# Teachers Matter

## Report on the State of Education in 2013

HUMAN CAPITAL
NATIONAL COHESION STRATEGY

MINISTRY OF NATIONAL EDUCATION

IBE entuzjaści edukacji

EUROPEAN UNION
EUROPEAN SOCIAL FUND

HUMAN CAPITAL
NATIONAL COHESION STRATEGY

MINISTRY
OF NATIONAL
EDUCATION

IBE entuzjaści edukacji

EUROPEAN UNION
EUROPEAN
SOCIAL FUND

# Teachers matter

## Report on the State of Education in 2013

Warsaw 2014

Content editors:
*Professor Michał Federowicz*
*Professor Jolanta Choińska-Mika*
*Dominika Walczak, PhD*

Series editors:
*Professor Michał Federowicz*
*Michał Sitek, PhD*

Reviewers:
*Professor Stanisław Dylak,*
*Professor Jarosław Górniak*
*Katarzyna Hall*
*Professor Krzysztof Konarzewski*
*Professor Zbigniew Kwieciński*
*Professor Grzegorz Mazurkiewicz*
*Professor Maria Mendel*
*Magdalena Swat-Pawlicka*

Authors:
*Piotr Bordzoł*
*Professor Jolanta Choińska-Mika*
*Monika Czajkowska, PhD*
*Kamila Hernik*
*Małgorzata Kłobuszewska*
*Martyna Kobus, PhD*
*Agnieszka Kopańska, PhD*
*Jakub Lorenc*
*Karolina Malinowska*
*Krzysztof Mrozowski*
*Małgorzata Musialik, PhD*
*Aleksandra Oniszczuk*
*Margaryta Orzechowska*
*Barbara Ostrowska, PhD*
*Katarzyna Paczuska*
*Urszula Poziomek*
*Jadwiga Przewłocka*
*Professor Rafał Piwowarski*
*Magdalena Rokicka, PhD*
*Michał Sitek, PhD*
*Magdalena Smak*
*Jacek Staniszewski*
*Klaudia Starczynowska*
*Magdalena Szpotowicz, PhD*
*Dominika Walczak, PhD*
*Andrzej Wichrowski*
*Zofia Zasacka, PhD*

Publisher:
*Instytut Badań Edukacyjnych - Educational Research Institute*
*ul. Górczewska 8*
*01-180 Warszawa*
*tel. (22) 241 71 00; www.ibe.edu.pl*



English language editing:
*Patrick Fox*

Translation:
*Monika Bokiniec*
*Patrick Fox*

*ISBN 978-83-61693-47-5*

*Publication developed as a part of the systemic project: Quality and effectiveness of education - strengthening of institutional research capabilities, co-financed by the EU from the European Social Fund and implemented by the Educational Research Institute.*

*Free copy*

# Contents

# The dilemmas of the teaching profession

'The teacher is of vital importance', is an expression of ever greater significance, worthy of repetition and search for its new meanings. It is almost certain that the importance of the teacher is not one that will last for eternity. Today the role of the teacher is not the same as in the past, when schools were being built and numbers in the profession rose quickly. Now, teaching is one of the largest professions, rather varied, but with a strong common sense of identity. This engenders strengths and weaknesses in the development and projection of the teacher's new role. **Between times, just what modern teachers are and will be like, signifies the country's capacity for long-term progress.**.

This is why this year's report is reserved for teachers. Its function is to present facts, supported by national and international research, to describe the situation and contribute to mature public debate on the topic. The main audience includes the broad range of public opinion, together with educationalists, economists, politicians and above all teachers themselves. This implies both those teaching in the school system and in Higher Education, two communities which are poorly connected - something which impedes further progress. University resources, if made more widely available, could be used to unleash new approaches to work with young people to guarantee the constant creative foment needed as the foundation for the modern teacher's role. The report does not pretend to offer a 'grand synthesis' or 'conclusive recommendations'. For this, a wider public debate would be necessary. The report does, however, offer a faithful picture of the present situation. A number of problems and also their legal remedies require considered discussion for revision of the functions of institutions, which at this time are written into law. The institution of teacher career progression is one clear cut example.

## Changes to the role of teachers

We think, that with suitable legislative support, gradual but not prolonged evaluation of methods to activate the teacher's role will create opportunity to release the social energy needed to improve Poland's social, economic and political potential. Success of Polish teachers, involving those at newly established lower secondary schools, has attained world attention. It is worth considering progress and the aspects of the Education system which have either not so far been discussed, are not operating on a wide enough scale or which may be in decline.

Provision for education has two main set goals. The first is to build Poland's development potential and the second to strengthen functional social cohesion. Both aims are inter-related. Development potential is inherent in increasingly more conscious development of the elite, together with the improvement of general education, to offer more favourable conditions to those with special talents and creatively provide outlets for their work. The elite is better established if wider roles are offered; from this it should be inferred that greater access to high quality education is needed. In this way both educational goals are bound together. The basis for social integrity does not only depend on working with the weakest and reducing the risk of social exclusion, but also keeping the gates wide open for individual development.

Both educational goals demand individual attention for children and young people. **In the modern world, general education can only strengthen development potential and social cohesion in as much as it can avoid homogeny in individualised work with students**. This is the crux of the matter for modern education systems, which were built on altogether different principles. It also explains the need for change in the role of the modern teacher.

The main dilemma facing modern education is in the essential range of autonomy available to the teacher. Effective teaching requires an element of creativity. To unlock the potential of every child, each young person and young adult as a student, it is necessary to find the right key. Do education systems, created to operate on a mass scale, allow this possibility?

## The example from past centuries

Looking to the past, to the time of the birth of mass education, one might recall the received wisdom, that the Franco-Prussian war of 1871 was not won by soldiers but rather by the Prussian schoolmaster. This was explained by the fact that Prussian soldiers had generally attended school and understood modern technology, as well as the principles of communication as used in the armed forces. This model was formed, doubtless, to accord with the national mission, so it does not seem surprising that it assumed the prevalent infrastructure used for national and military support, i.e., bureaucracy. This model reflected the growing demands of industry which was intending to increase its scale of operations. Such a system was not created to foster talent or pay special attention to individual needs. The elite was educated separately, following a different pattern to that available to the masses. This did not necessarily rule out recognition of special talents and many dedicated teachers cared well for underprivileged students. However, the system was not obliged to encourage special treatment and it was

much later that people became aware of the need to rebuild social cohesion.

Industrial development in the West became an example for Russia after 1917. The communist leadership were inspired by the achievements of mass production (Lowit, 1971) and made efforts to transfer its principles to many areas of life in the society that they were creating. This resulted in a strange fusion: social mobilisation and a bureaucratic model for management, two opposing principles for a single society. This system was then applied to post war Poland. Attack on illiteracy was the given reason for mass education although the main goal was ultimately to govern people's minds. Daily practice both at a mass level and in the narrow fields of university education functioned in parallel to create modern man according to the templates of attitudes and ideology of the earlier generations' educated. **Post war school was intended as a conveyer belt which allowed no room for teacher autonomy**. The example set by the intelligentsia, for whom the role of the teacher had been integral from at least the second half of the 19th Century (Czepulis-Rastenis, 1973), underwent increasingly stronger reinterpretation and started to lose continuity. Today, teachers only sporadically refer to the classical model described and their roles are divided between meritocracy and etatism.

## Breakthrough – 1989

Particularly timely to note, on the auspicious 25th anniversary of the transformation, restoration of autonomy to schools and universities, with the broad support from those in Education, was brought about in 1989 by prof. Henrik Samsonowicz, a new minister in Mazowiecki's first non-communist government, working with Anna Radziwill who was responsible for changes in Education. **The idea of autonomy defied the previous order.** Changes to legislation allowed many new initiatives and fusion of teachers' creative energy with the willingness of parents to contribute. Initial enthusiasm propelled the system through the necessary changes.

Today it is worth trying to find how teacher autonomy, which is in fact written into law, albeit with many inconsistencies, really functions and how much it is disabled by the bureaucracy entailed with the job. This is key to the release of new energy for society.

## Creativity — need and necessity

**School in a democratic society, above all, prepares conscious citizens,** prepared to make choices. They should be resistant to manipulation, gifted with the skills of argument, ready to work with others and to take responsibility for their own duties. This is an ideal which is somewhat distant from reality, not only in Poland. Similarly, most countries, which until recently lived in the comfort that their systems had solved the issue of general education, are convinced that their models no longer rise to the challenge of contemporary demands. The labour market demands the combination of social and intellectual abilities, rapid learning and competence in dealing with new problems, revision of previously learnt skills and their augmentation. The world of routine, to which school has long belonged, is becoming marginalised in the workplace, a thing of the past. More profitable activities, more interesting and allowing a stronger place in the market, require greater elasticity. Education is incomplete if it does not prepare people for new roles as adults.

This combination of demands cannot be satisfied without unleashing teachers' creativity and their will to cooperate and requires their autonomous initiative. It is not possible for a system, designed along military or bureaucratic lines, to regiment a creative approach. Still, the modern military is hardly similar to that of the 19th century and civil servants are now set broader tasks; instead of strict controls, a more elastic approach is applied to their evaluation. **Today, finding new approaches to the demands on general education is a challenge worldwide**.

## PISA — A partial reflector of education

The PISA study, carried out with the assurance of the most rigorous standards to allow international comparability, yielded a curious finding. It made the world aware of the phenomenon of Finnish education. Although Finland had its share of woes, it can now boast the unquestionable educational and economic successes which allowed them to become European leaders. It was a prize won by Finnish school teachers. The key was discovered to be autonomy. The Finnish infrastructure allows autonomy for teachers , but at the same time, there are demands placed on them too.

**Polish achievements in the same study, were without doubt a significant success demonstrating a strong effort on the part of our teachers, but it is too early to say whether these results will be a lasting.** Interestingly, the national feelings aroused, were rather of disbelief that Polish schoolchildren could perform so well. Twelve years earlier, it was inconceivable that our children could perform so badly. It is difficult to discern whether these reactions were obtained from close analysis of the available data. This is why it is time for a proper debate about the virtues and defects of our education system and the changing role of modern teachers. To enter the debate, we emphasise the undeniably good result achieved by Polish schoolchildren, but it is only in the nature of things that it promotes an image reflecting how the test itself was devised. Just the same, our main concern is that there is much room for improvement outside the areas tested. This is described in the third part of this report, based on many recent national findings.

## Work behind closed doors

It is worth pointing out **the problem of integrating pure teaching of general subjects with successful development of students' social skills**. For example, abilities: to describe what they are doing; listening to other people; keeping their word and respecting obligations to peers; working in a group; to be bold and actively think about how unsolved problems can be successfully approached. The list of detailed abilities desirable now, which could be taught in schools, is long. They are all skills needed in adult life. They are not tested by examination, because they cannot currently be evaluated by the types of tests available. This could, however, become a field of interest using self-assessment and seeking opinions of teachers about the results. The issue is really how educated attitudes, which are grounded in firm values through real action, can be instilled into students. Relationships can be formed while cooperating as part of students' main schoolwork, in a way that social interaction does not become undesirable but an integral aspect of normal lessons. This is already happening in many schools, where children who are lucky enough to cooperate well with teachers, generally, perform well in external examinations. **The myth of teaching for the test does not prove to have a rational basis**. The phenomenon is probably more of a smoke screen and is used by teachers who are too timid to plan creative lessons. Broad recognition of the need to use time at school more imaginatively is still far off..

This is not encouraged by the traditional organisation of school, together with the almost complete division of lessons. Equally, the way in teachers' hours are spread is unhelpful and not much encouragement is provided by frequent lack of available space for teachers to perform their own work outside lessons. **The entire, traditional, school ritual does not favour team work among teachers, spending a particular time together**, group work looking for ideas or natural exchange of experience. This is described in the second part of the report, illustrated with the findings from relevant studies..

Of course there are many exceptions, but on a general level, teachers have very little time together or with parents. Surprisingly, they spend equally little time on essential school paperwork. This rather counters the myth that they are overloaded with administrative responsibilities, which, however, may reflect the impression of multiplying demands placed on teachers, concern about potential inspections and lack of autonomy.

The problem is real, because teachers have a broad range for autonomy and many use it, but they also respond to the externally applied demands felt, which damages self-confidence and causes underestimation of their own ability. This results in disincentive to take the initiative. They feel it is better to adopt defensive strategies against potential inspections, avoiding risky explanations of original ideas or imaginative work methods. Teachers can effectively exercise choice over teaching materials, but in general they opt to cling to the textbook. Rather than choosing between the books on offer, they should be independently and creatively adapting the dynamics and sequence of their teaching to particular groups. This is discussed in the context of lesson observations and discussions with students and their teachers.

This report does not describe any easy answers, rather, it aims to stimulate the debate. Building mutual trust between different cogs to synchronise and oil the educational machine is an enduring process. In comparison with many other countries, up until now, **a work culture seated behind closed doors has for generations dominated in Poland**. This is seen in the closing of doors to the classroom, where teachers face a class, alone. Loneliness at work, not just in the classroom but also in the staffroom is often the experience of young trainees, but also can impinge on many experienced teachers. The unfamiliarity of running lessons with doors wide open may also fuel teachers' reflexive doubts of the quality of their own work, which paradoxically, does not invite self-confidence.

**The establishment of a new culture of evaluation,** aiming primarily to understand difficult situations and encourage their resolution, is a long road. The first steps have been taken. The dilemma of choice between inspection or evaluation is undecided. The number of schools is growing which regard internal evaluation as a useful tool to achieve their goals.

## The Teacher's Charter

In the past, general education in many countries was, to a great extent, fairly uniform. This is no longer the case, however, we are a far from coping with the variety, typical for our times. This does not concern habits or what people are accustomed to, but the complex nature of acts of law, which over a long period have introduced various forms of order. The Teacher's Charter is one such example. It was negotiated during the unprecedented times of the Solidarity movement and became the first legal move under martial law in January 1982. While the government dampened the energy of social rebellion, it also lauded this act of law, which without social approval could not restore order if it maintained a logical façade. What had been negotiated in 1981 was largely a response to the shortcomings of the system which had accumulated over decades. However, it initiated dealing with the responsibilities for completely different times. Today, multiply revised, it is some of the most complicated and opaque legislation in existence.

**Teaching, as a trusted public service requires new regulation,** which should both service the stability of teaching

as a profession and mobility and readiness to take on new roles. The present remedies encourage the profession to remain hermetic, which causes the greatest setback to society . Concerns about openness do not encourage development of its own value.

## The future of the teaching profession

There is a tranche of questions concerning new approaches to careers and the prediction that people will change their jobs and occupations several times during their working lives. **Which new skills do teachers now need to improve their teaching and also improve their prospects outside education?** How can they improve their social skills, in combination with their experience, to make themselves more attractive to other employers? How much will work with young people be in demand, as compared with adults returning to education? Is it possible that companies themselves will need these services? What does career development really depend on for access to the labour market and professional mobility? The dilemmas of career development can be seen in another light when they start to become an issue – even regulated – through the prism of the portfolio of competencies gathered, potentially useful in a variety of circumstances and in more than one occupation

It is worth underlining, that what today seems obvious, that practically all teachers have completed higher education (figures describing this and other matters are to be found in part 1 of this report). Hardly anyone now recalls the lack of educated and qualified staff that characterised the system for much of the 20th century. Still in 1988, over 18% of teachers had only high school education and at that were below average. In 1992, one teacher in eight had no training in their chosen subject. This affected mostly teachers of Polish, mathematics and western languages, the main teaching subjects for which regions had previously endured a shortfall of about 50% (Osiecka, 1996). Only at the turn of the century was the shortage of suitably qualified teachers made up, following the reforms of Professor Mirosław Handke, the minister responsible. The criteria for promotion, which are now quite correctly criticised, then, however, played a positive role.

Current regulation for the teaching profession was influenced by decidedly different circumstances. Today the need for higher education is no barrier to recruitment, however it is necessary to find a solution to allow greater flexibility in the range of teachers' competencies. This way nobody will feel held back in one career, imprisoned in a hermetically sealed environment. They will also enjoy a much greater degree of autonomy in their plans and work.

Potential for progress in the Polish education system is conditional on teacher autonomy, both in perception and actions. Opening the profession to all willing with a suitable competency range and with open channels to other careers, should give rise to the situation, for which the slogan, which has been over recent years that teaching is a positive career choice. This is not a recommendation, but a voice in the discussion. In arming you with this report, we invite you to join the debate..

Michał Federowicz

# Summary

# Part I: Education in numbers

## 1. 1. The education of Poles

Chapter 1 of this report presents a synthesis of the current Polish educational structure adults' skills and situation on the labour market. Polish educational attainment is improving. Fewer people are leaving education without any level of education successfully completed, whereas the proportion of people with degrees is increasing. These changes are almost exclusively the effect of the youngest cohorts entering adulthood with skills comparable to their peers in the OECD. Polish fifteen-year-olds have demonstrated that they are among those with the highest levels of competence in Europe. However, the adult uptake of continuing education remains quite poor and that has not improved in the last few years. People without work or with basic education are the least likely to advance.

The chapter also discusses the impact of changes in Polish education profile on the labour market. In Poland, educational attainment still determines position on the labour market as indicated by professional activity and unemployment rate, however, the difference between the graduate unemployment and that in the general population is narrowing yearly. There is a similar tendency in terms of income. Average monthly income increases with level of higher education, although its relative benefit over the secondary vocational education is diminishing. This situation is reflected in the changing perception of the role of education in professional and personal life. In 2002, 92% of respondents declared that it was easier for educated people to succeed, whereas in 2013 this belief was only shared by 80% of Poles. Education no longer guarantees employment and career prospects, as was widely assumed at the beginning of the 21st century. Now, with the greater prevalence of graduates, the key to maintaining a stable position on the labour market seems to lie in improving qualifications and learning new skills - life-long learning.

## 2. 2. Education in numbers

The second chapter summarises the uptake of formal education by children and young people, changes in school numbers and organisation. Expenditure is also discussed. A detailed description of the Polish teacher population and their salaries is also included.

Current demographic changes are the fundamental challenge to the Polish education system. Over the past two decades, the birth rate has dramatically decreased, resulting in declining student numbers at all levels. An exception to this tendency is in the number of first-graders at primary schools which will increase especially in 2015/2016 as a result of reforms lowering mandatory school age. However, this will only be transient with no long-term consequences.

The decreasing number of students is leading to necessary rationalisation in school organisation. The number of establishments and their average size is dropping and schools, especially primary and lower secondary, are transformed by school governing authorities into school complexes. The expenditure on education per student increases, affecting the amount of education grant allocated and local authority spending on their own role in supporting education. For several years this increase has been related to the most important category of spending – salaries. While running costs and capital investment in education markedly reduced in 2011-2012, assuredly a sign of the worse state of public finances in the period and the introduction of other communal investments, jointly financed from foreign sources.

Numbers of teachers have reduced over recent years although the fall is proportionately lesser than would be dictated by the dynamics of the pupil population. At the same time, there was a reduction in overtime worked, per teacher and the number of full-time teachers. In the period under investigation there was a marked change in profile of the profession in terms of professional status. In all domains there was an increase in the proportion of those who had reached the highest level. This is the main factor in determining salaries. These changes caused a rise in average teaching salaries. Average earnings for teachers also depend on the local authority: teachers working in schools operated by the gmina are the best paid but the worst paid are in powiat maintained schools. Teachers are relatively well paid compared to others, with the exception of those working in larger cities (Warsaw, Tricity, Silesia conurbation), where gross earnings are about 70% of the general average.

# Part II: Profession – teacher

## 3. Image of teachers

The second part of the report deals with the following questions: What do teachers think about themselves and their work? How did they become teachers? Where do teachers work? For how long? How do they improve their skills?

**Teachers about themselves and their work**

As the qualitative study demonstrates, women and men differ in their motivation to become teachers. Women usually chose the teaching profession from a passion for teaching cultivated since childhood. It should be emphasised that the choice of profession in their case was usually related to a person connected with education in their close family or to meeting a teacher during their education who served as their role model. Men more often than women chose the teaching profession 'by accident'. Even though they have predisposition towards working with students and they develop their professional skills, they less frequently report willingness to continue to pursue a teaching career. The main demotivating factor was found to lie in the unattractive salary.

As many as 92% of teachers are satisfied with the quality of their work at school. Almost as many are content with their work. The majority of teachers admit that their work provides them with the opportunity to maintain contact with people and for personal development. It offers longer holidays than other professions. Moreover, the vast majority of teachers like their work and would recommend their school as a good place to work. Only a few report regretting their choice of profession - men slightly more frequently. Teachers rarely associate their work with satisfying income and prestige.

**Entry to the profession**

In terms of both background and entry path to the profession, two groups of teachers are especially interesting: early education and general upper secondary school teachers. Early education teachers form the oldest group with significant numbers in possession of diplomas certifying completion of studies and qualification courses. They come from small towns. General upper secondary school teachers live in big cities and usually have partners who are also teachers.

There are significant differences between teachers at different educational levels in terms of their parents' academic attainment. Parents of teachers working at higher educational levels were better educated than those of teachers at lower levels.

The most frequent means of obtaining qualifications are studies including teacher training specialisation - two thirds of lower secondary, general upper secondary and basic vocational school

teachers obtained their qualifications this way (less frequently technical upper secondary and more often primary school teachers).

## 4. The school as workplace

### Opinions about teachers and their work

In the eyes of the public the teaching profession enjoys considerable prestige and teachers' work is considered to be responsible, stressful and hard. Teachers are perceived as highly qualified and willing to improve their skills. Despite this positive social image, teachers themselves do not feel respected.

The evaluation of teachers' working conditions vary - half of the population believes that teachers' holidays are too long and their income is appropriate to their working time. Others think that teachers' working time should not be changed and their social position should be rewarded with an accordingly higher income.

Students' opinions on their teachers vary according to age. Younger students have a more positive image of their teachers, whereas older students are more critical.

Students are rather critical about relations and communication with teachers or their openness and they have a better opinion about content of their classwork. They also claim that in Polish schools there are teachers who do not meet their obligations.

Parents usually have positive opinions about teachers. The studies reflect a high level of satisfaction with their relations with teachers. The area of parent-teacher relationships that could, however, be improved, is the greater role of parents in the school decision making process, in a way that parents would feel more like partners.

### Relations between teaching staff

The most common form of cooperation reported by Polish teachers is discussion of individual students' progress. Another common subject includes behavioural issues - 80% of teachers declare seeking other teachers' advice about dealing with students' behavioural problems several times a month.

Teachers less frequently cooperate on preparation of tests or joint lessons. Most teachers report support from other teachers in problematic or complex situations.

This support from co-workers protects teachers against professional burnout. Sometimes difficult situations occur between teaching staff - 10% of Polish teachers declare experiencing mobbing. Additionally, Polish schools have problems with group work.

### Teaching aids and equipment

Various Polish studies on teachers' working conditions obtained different findings. The vast majority of teachers, when asked about their working conditions, declare satisfaction (92%). However, when asked about problems at work, only 30% of teachers don't perceive poor working conditions as an issue. Others point to minor or major inconveniences in this area (including lack of teaching materials, office supplies or overcrowded classes). Four in five teachers believe that working conditions defined and perceived in such way are not a reason to change school (if such a possibility existed) – moreover, they would recommend their school as a good workplace. Therefore, while analysing teachers' working conditions we should take into consideration such indicators as school equipment, including classrooms and staff room, as the actual drivers for teachers' perception of their working conditions.

Polish teachers have access to basic office and technical equipment essential for their work (93-97% of respondents confirmed they had access to: a computer, Internet, copier, printer, CD/DVD player). Schools are also striving to manage their resources to respond to teachers' needs relating to the specific profile of their work. In reality, however, the overwhelming majority of teachers have limited

prospects for using such facilities (lack of paper and/or toners for printers, long waiting time to use some devices, damaged equipment). Another notable shortcoming is the absence of a place for individual work at school and the functionality of the staff room which in many schools was reduced to a "checkroom" or a break room mainly intended for meals and drinks.

**Teachers' individual work - at home or at school?**

The specific profile for Polish teachers' work is mainly driven by individual efforts, including preparation for the classroom, evaluating students' work or keeping school records, whether in school or at home. Such tasks often require silence and concentration, a secluded place. This is one reason why most teachers (53%) choose home as their preferred place for individual work and argue that this is also where they benefit from access to all essential materials and are able to work when they like. Another 35% of respondents prefer to perform some tasks at home (conceptual work, evaluating students' papers) and other work at school (which requires access to school records or office equipment). Only 8% of teachers prefer to do individual work at school. For the remaining 4% it makes no difference where they perform their individual work. The declared reasons for encouraging teachers to perform most of their work at home includes insufficient school equipment (mainly computers with access to Internet, printers) and of the lack of a quiet place for work demanding concentration.

The findings of *Time and Working Conditions of Teachers* study give grounds to determine the time spent on main activities as five core elements. These five main activities are: preparing and teaching regular lessons, preparing and teaching extracurricular classes, and assessment of students work. For the "typical" teacher, who teaches 18-27 lessons a week and does not perform other functions beyond being a class teacher, the time spent on these activities amounts to 34 hours 35 minutes a week.

There are differences between teachers by degree of professional advancement (teachers with the highest professional status work more) and by subject taught: the most time is spent by Polish teachers (40 hours a week) and the least by PE teachers (28 hours). There are no observable differences between teachers working in big and smaller cities. It should, however, be taken into account that this study did not account for commuting time, which could differ according to the size of the place of residence or if living and working in the same city.

For teachers teaching fewer than 18 "blackboard" hours, the more lessons, the more time they spend on preparation, however, those with more than 18 hours a week spend the same time on preparation, regardless of whether they teach 18 or 27 hours. This is explained by the fact that those teaching more classes usually cover the same subject in several parallel classes. Therefore, they prepare one lesson for several classes.

A typical teachers' "blackboard" time (a teacher who teaches 18-27 "blackboard" hours for one employer) was found by the study of teachers; working time and conditions were similar to results from TALIS 2013 for all lower secondary school teachers based on different survey methodology.

### 5. Development of teaching competence

Over 90% of Polish teachers are involved with activities helpful to their professional development. Development activities were predominantly for subject related knowledge or methods, knowledge of the curriculum, evaluation and assessment practices, and approaches to individualised learning. At the same time teachers express the need for activities in the area of classroom management, teaching cross-curricular skills and ICT skills for teaching. Professional development most commonly takes the form of courses, workshops and educational conferences. Participation in networks of teachers as a part of the new model for school support and professional development is also relatively popular.

Even though most teachers make efforts to develop their professional skills, the relevance of professional development is disappointing. Problems include unsuitable offers for the support of school and teachers, mistaken organisation of financial support and insufficient support for schools resulting in incompatibility between training and work obligations.

Teachers also perform various daily activities and roles which allow them to develop many skills relevant to the labour market and one in four had professional experience outside school.

The professional promotion system should play a significant role in motivating teachers to develop their skills, however, analysis of Polish promotion system reveals its many flaws. Therefore, the chapter includes recommendations for system changes.

## Part III: Teachers in action

### 6. Polish language teacher

This chapter describes Polish language teachers' attitude towards their job and teaching work. It is based mainly on IBE's study *Teaching Polish literature and language in lower secondary schools according to the new core curriculum*, the objective of which was to diagnose the state of teaching Polish language levelled towards the new core curriculum at the third level and to describe influential in and out of school environments. The empirical findings from the study were analysed in order to discover how these teachers conducted their lessons, what methods and didactic aids they used and how they communicated with students and evaluated them. The daily problems faced by teachers and their successes in the classroom were also diagnosed. The chapter concludes with a summary of the optimum characteristics and strategies used for teaching.

### 7. Mathematics teachers

Mathematics is one of the cornerstones of education. Despite the fact that mathematics is included in the curriculum after the first grade of primary school, or even preschool, continuing until Matura or higher education, mathematics is one of the most challenging subject to teach and learn. For many years efforts have been made to find the most effective ways to teach mathematics and to prepare young people to teach the subject. This is the problem for contemporary teaching methods, especially in terms of technological, social, cultural and economic change in the modern world.

The description of the mathematics teacher described in this chapter was from three studies conducted by the Mathematics Section at the IBE (*School of independent thinking, Teaching Mathematics in lower secondary schools* and *Professional development needs of early education and mathematics teachers*) and other relevant publications. The findings offered a general description of mathematics teachers, characterising their strong and weak points

## 8. Foreign language teachers

For several decades foreign language teaching in Poland has been developing dynamically. Serial reforms of the education system have lowered the age for compulsory foreign language learning and it has been emphasised by inclusion with the compulsory examination subjects. Teachers are prepared to teach different age groups and use various teaching aids in order to motivate their students and to meet the challenge of disseminating foreign language learning. The data presented in this chapter, based on several studies including one at international level, project a picture of foreign language teachers' workshop (?). The most important challenges faced by foreign language teachers are also described.

## 9. History teachers

The chapter on history teachers presents existing qualitative data on history teaching and suggests further areas for research. The text is drawn mainly from the most recent investigations conducted by the IBE's History Section. The main part of the chapter is divided into eight subsections which present findings on the work of history teachers. The last part includes conclusions relating to the desired competencies of history teachers.

The core findings primarily include: domination of textbooks in planning and implementation of the teaching process, a high level of teacher awareness of their subject, still insufficient emphasis placed on teaching historical skills (especially the ability of students to create a longer narration and excessive focus on encyclopaedic knowledge). Teachers' declarations suggest that some of their deficiencies (for example, insufficient use of student-activation methods or omitting iconographic analysis) are the consequence of limited access to high-quality training.

Teachers rarely have the opportunity to test various methods and techniques useful for teaching skills which are important in the study of history.

## 10. Science teachers

This chapter is entirely devoted to teachers of science subjects: from science in primary schools to biology, chemistry, physics and geography in lower and upper secondary schools. It describes Polish science teachers using research and analysis carried out by IBE's Science Section, the Centre for the Development of Education and the National Foundation for Computer Literacy in collaboration with Adam Mickiewicz University in Poznań within the framework of Śniadecki College, the Faculty of Physics (Jagiellonian University, Cracow, within the framework of SECURE project) and the Institute of Philosophy and Sociology, Polish Academy of Science, Warsaw.

Different aspects of science teachers' daily work are discussed:

– overriding educational goals, ways in which teachers prepare for classes and plan their lessons, teaching aids and methods used during lessons, methods used to foster and develop science skills (such as experiments, observations, field work, creating and developing ability to apply scientific method), communication between students and teachers, ways of assessing student progress, factors hindering a teacher's work and their definition of success. The last subsection attempts to describe an impression of the ideal science teacher, from the collected opinions of students, teachers and experts on the subject.

Science teachers perceived satisfying the core curriculum requirements (those subject to evaluation), developing subject skills, transferring knowledge and practical skills applicable to normal life as primary goals. Textbooks and exercise books are the most frequently used teaching aids during science lessons. They also use various maps and models. In the lesson planning process, most teachers use ready-made examples suggested by the textbook used together with the accompanying workbooks. The majority of interviewed teachers used a lecture-based approach

and rather underused field work, experiments, observations or measurements, particularly those carried out by students (individually or in groups). If there is an experiment during class, it is usually demonstrated by the teacher. The communication process during science lessons is usually reduced to students expressing their opinions on a subject or explaining their ideas. Controlling and assessing student progress is also an important part of a teacher's work. Assessment is usually based on test results and oral answers. Less frequent evaluation methods include homework or classroom work. There are also teachers who require more advanced student work, such as presentations or projects. The report mentions factors hindering science teachers' everyday work, such as oversized classes, problems with discipline and lack of interest in science subjects. Studies on definition of success and sources of job satisfaction show that this group of teachers value student interest in their subjects and changing the attitudes of low achieving or disrespectful students. Teachers value student initiative, good relations with students or school alumni who value their work years after graduation. They are also proud of pupils' success in competitions. The last subsection gives a description of good science teacher and the skills necessary to become a model teacher. There is also a description of directions for science teachers to follow in the 21st century.

# Part I

## EDUCATION IN NUMBERS

# 1. The Education of Poles

Authors:
*Magdalena Rokicka*
*Michal Sitek*

In this section we would like to describe the most important tendencies and transformations influencing the educational expectations of Poles, change in educational profile and the situation on the labour market. Most parents would like their children to complete HE, according to the literature, even though over the last few years, the value and prestige of education have been waning. An increasing number of Poles doubts that it guarantees work or career prospects. This sentiment is based on reality, although we have a very high indicator for uptake of HE, for which numbers fell in 2012. However this relatively high indicator for young people originated from changes in the education of the whole population. At present, 25% of Poles of working age have obtained HE, which was only 17% in 2005. According to OECD estimates, this is set to rise, although more slowly for men than women.

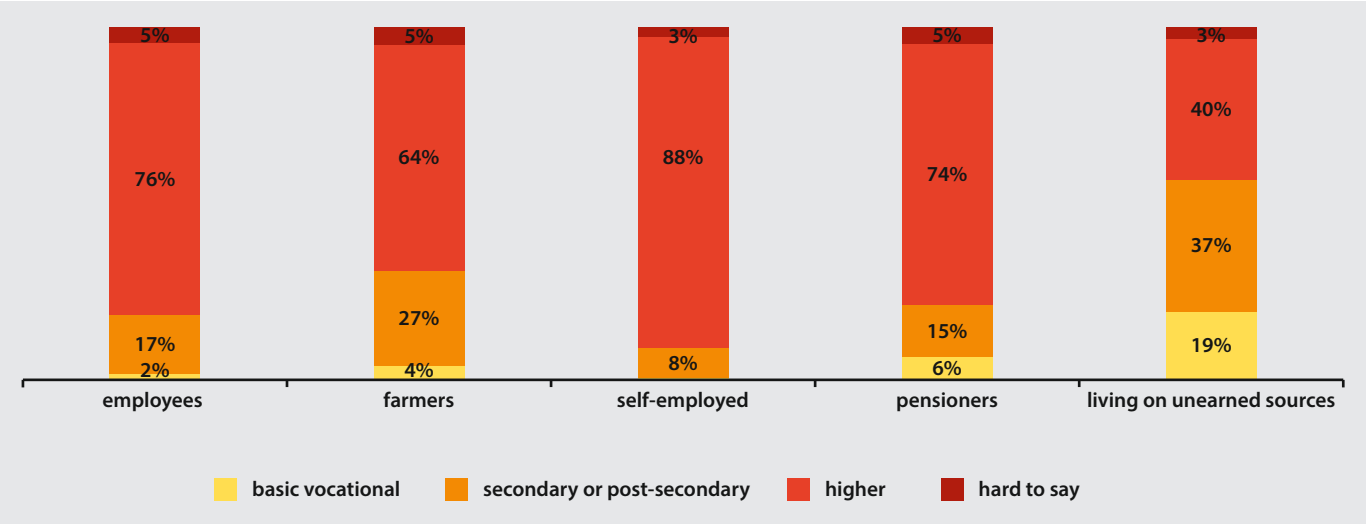
How do changes in educational profile interface with the labour market? While the situation is still conditional on level of education, as measured by career activity or unemployment, the difference between unemployment rates for educated people and the general population is yearly diminishing. There is a similar tendency for earnings too. The higher the level of education, the higher mean earnings are, although compared with those finishing secondary technical school the difference has reduced. It seems then, that owing to the increased uptake for HE, qualifications and acquisition of new skills are going to play an increasing role in maintaining a stable position on the work force — continuing education.

Polish adult uptake for education is comparatively low and is remaining low. Young people, those with HE and the employed are keener to expand their skill areas — those out of work or with little education, much less often. Changes to the educational profile and improvement in general education can be interpreted by the level of adult competence. The ability of Polish young people is around the mean for OECD nations, although 15 year olds score amongst the highest in Europe. The challenge is however to maintain and develop skills through continuing education in adult life. In this way older people will increase their engagement with learning, something which has a particular inter-generational significance in Poland from the educational perspective.

## 1.1. Polish expectations from education

Just as for the changing economic profile with an increasing role of services in the GNP, the use of modern technologies and the changing face of the labour market, there are also indicators for Polish educational expectations and aspirations. Surveys, by CBOS, showed that in 1996, 17% of respondents indicated that they hoped for their daughters to successfully complete secondary technical school and 23% wanted the same for their sons. By 2004, these figures had reduced to 3% for daughters and 4% for sons. Curiously, by 2009, these figures were rising again; to 5% for daughters and 9% for sons in 2013 (CBOS, 2013b). At the same time, for the majority, about three quarters of those included in the survey, hoped for HE for their children — again there were gender differences (in 2013: 76% for daughters, 73% for sons). These tendencies were confirmed by GUS, who in 2011 found that 75% wanted their children to attend HE, while it is worth noting that this was down 2 percentage points from 2004 (77%: GUS, 2013c). Associations between place of family home and socio-economic status and educational expectations are also visible (graph 1.1). In towns, 83% aspired for HE for their offspring, while in villages this was down to 65%, very similar to those working in agriculture, 64%. Those who had their own businesses held the highest hopes..

**Graph 1.1. Parents' economic expectations by socio-economical groups in 2011.**



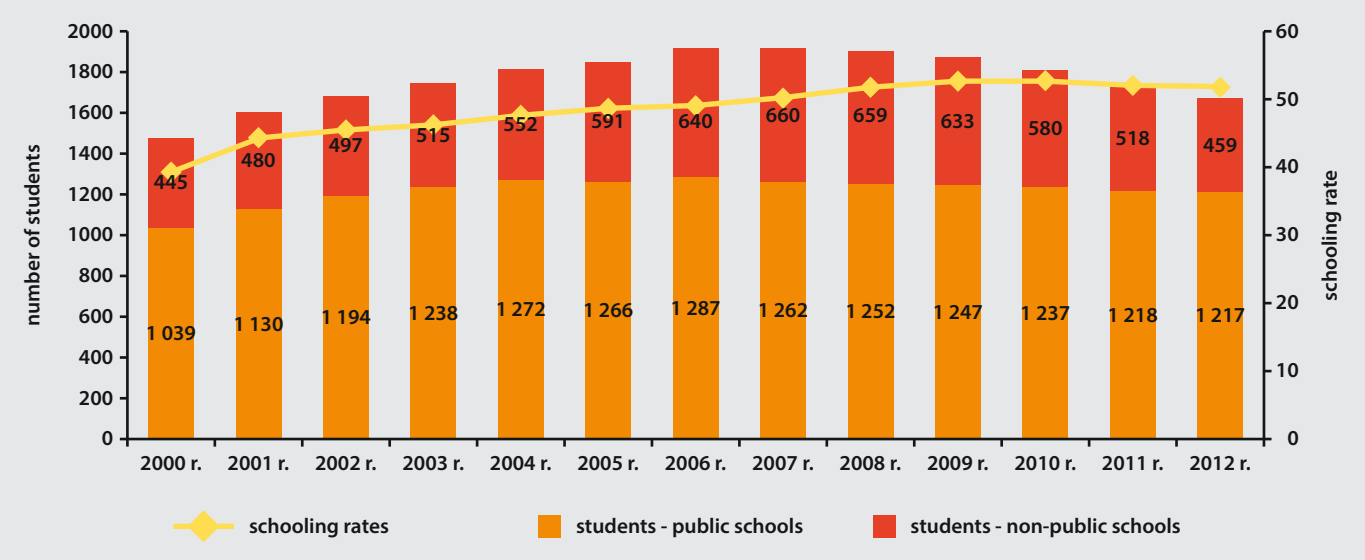

*Source: Based on: "Educational choices and occupational status of Poles", GUS [Central Statistical Office of Poland], Warszawa 2013.*

The opinion, that education is worth having, is dominant, held by 82% of respondents (CBOS, 2013b). This is a rise from 1993, 76% but a fall from the levels found in the first decade (91%-2002; the highest in 93%-2004). The reduction in belief in the sense of education is bound by changing understanding about the role of education in work and at home. In 2002, 92% thought that education was helpful in forging a career, whereas by 2013, only 80% respondents agreed with this. In contrast to the first decade of the century, people hold less to the belief that education guarantees employment. Whilst in 2002 80% considered HE protected against unemployment, in 2013, only 57% of respondents held that view. In reality, as will be shown below, those with HE suffer the lowest prospects of unemployment compared with other categories, although in 2012, this group was larger than in 2000.

### 1.1.1. Students and their studies

Changing opinions on the importance of education are confirmed by interest shown in HE. Although the gross indicator for uptake of HE rose until 2010/2011, in 2012 it decreased to 52.7%. In 2012 there was a sharp decrease in numbers entering private sector HE, 11% compared with the previous year, while in the state sector the reduction was minimal (0.1% - for the same period).

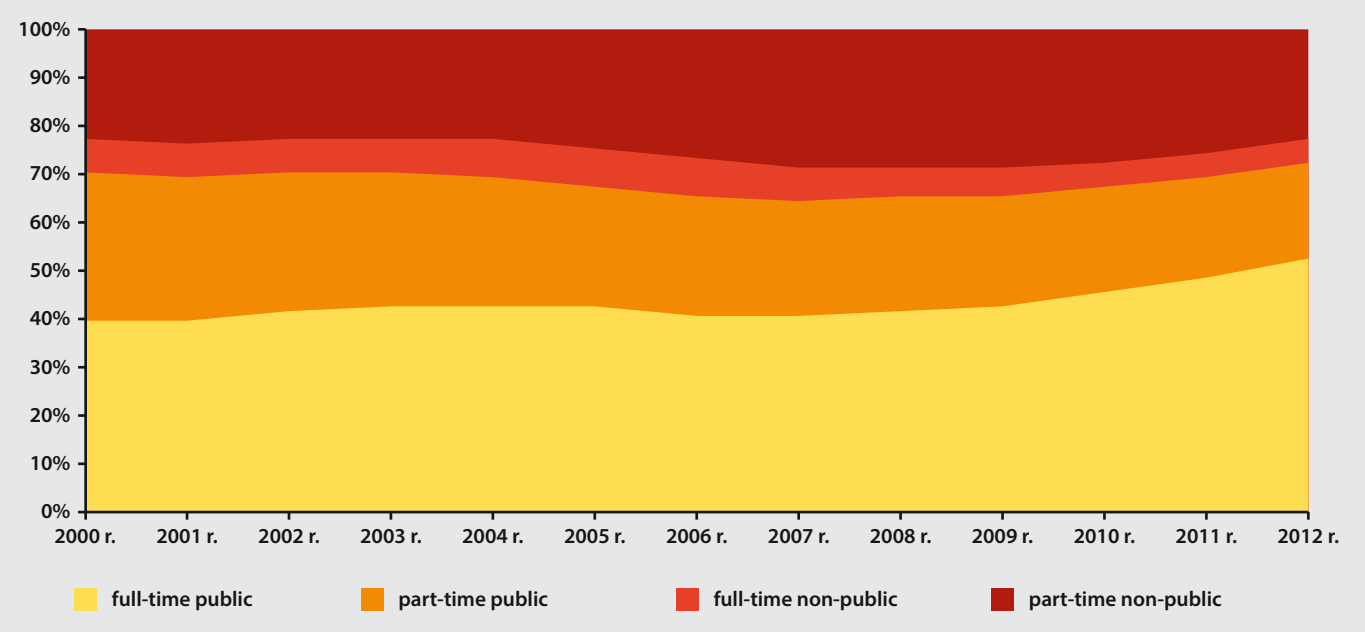
**Graph 1.2. The gross schooling rate of people aged 19-24 (%) and the number of students (thousands) of public and non-public universities.**




*Source: IBE calculations from the Local Data Bank, GUS..*

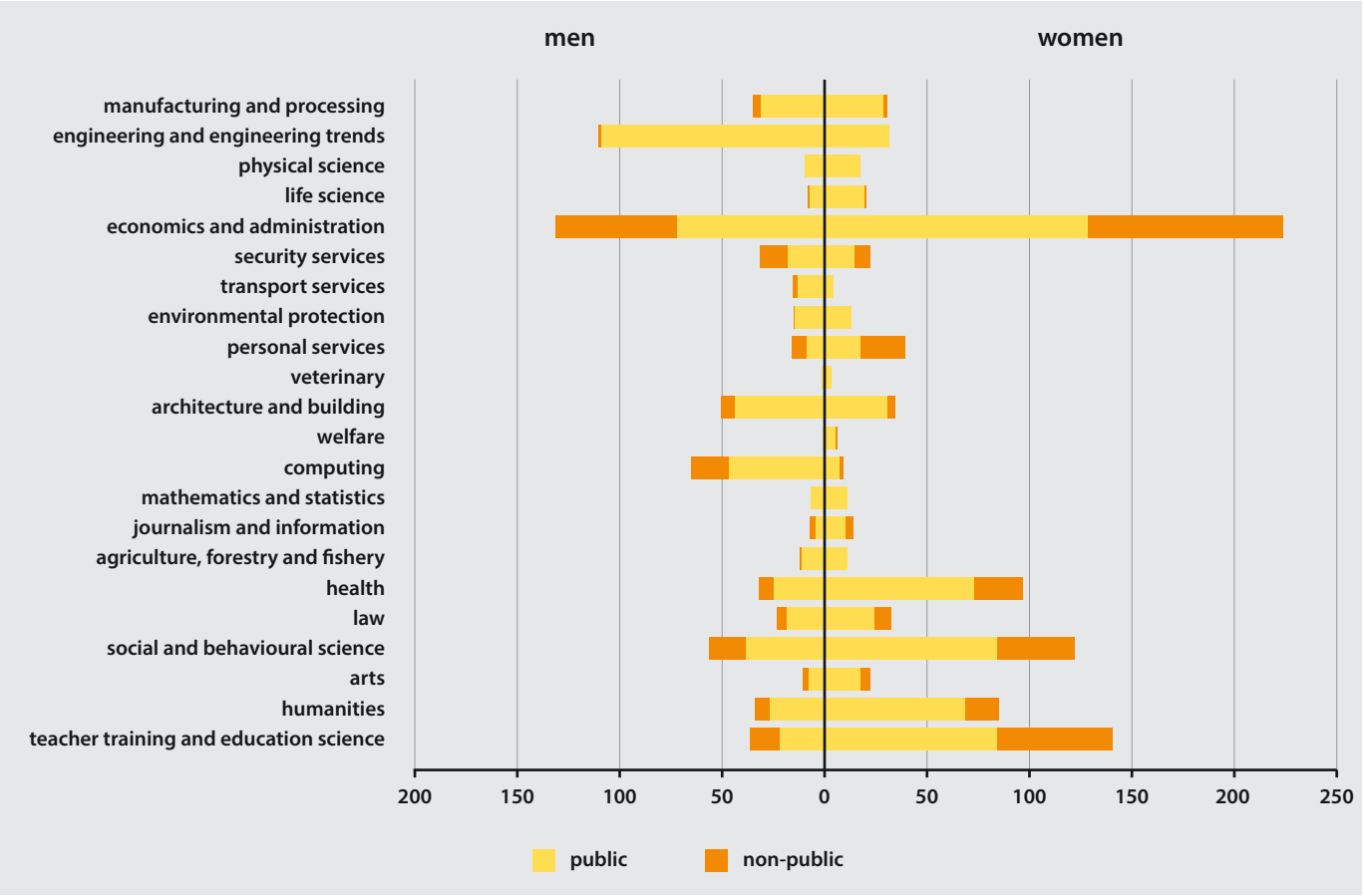
These changes are plotted in the following graph which illustrates profiled educational choices according to institution type. Since 2006, the increasing proportion of full time students attending state HE, 53% in 2012, together with a diminishing presence of part-time students attending state or private institutions. As indicated by the authors of Edukacja dla Pracy (Sztanderska et al., 2007), the number of full time state places resulted directly from government spending and the expense of offering courses; whilst in the case of part time studies, demand plays a greater role, especially in private institutions. We may presume that the decrease in the young population in the 19-24 range induced a reduction in demand for part-time private study and explains the direction of students towards full time courses offered by the state system, free of charge.

**Graph 1.3. according to forms of study and university types in 2000-2012 (%).**




*Source: IBE calculations from the Local Data Bank, GUS.*

**Graph 1.4. Students (thousands) by programme types and sex, in public and non-public higher education institutions in 2012.**




*Source: IBE calculations from the Local Data Bank, GUS.*

Gender difference in terms of choice of HE is of interest. In 2012, 57% of students in the state system were women and 63% in private establishments. As shown in graph 1.4, women are over-represented in courses on Economics and Administration, Social Science, Arts, Medicine and Education, whilst men more frequently choose Engineering and Technical disciplines, IT and building and architecture.

## 1.2. Education of the population

As discussed previously, the significant interest shown by 19-24 year olds is reflected in the educational profile of the population. Since education is compulsory to the age of 18, there is a high and stable proportion of those completing secondary education in Poland compared with some other countries. In contrast, the population with HE has changed dynamically. Whilst in 2000 only 11.5% of those aged 25-64 had some form of HE, in 2012, the proportion reached 25%[1], close to the OECD mean, which was 30% 2010. The table below shows the changing educational profile over the last 10 years.

[1] IBE calculations from BAEL data, Q4 in a given year..

**Table 1.1. Education profile for the population of Poland aged 25-64 (%).**

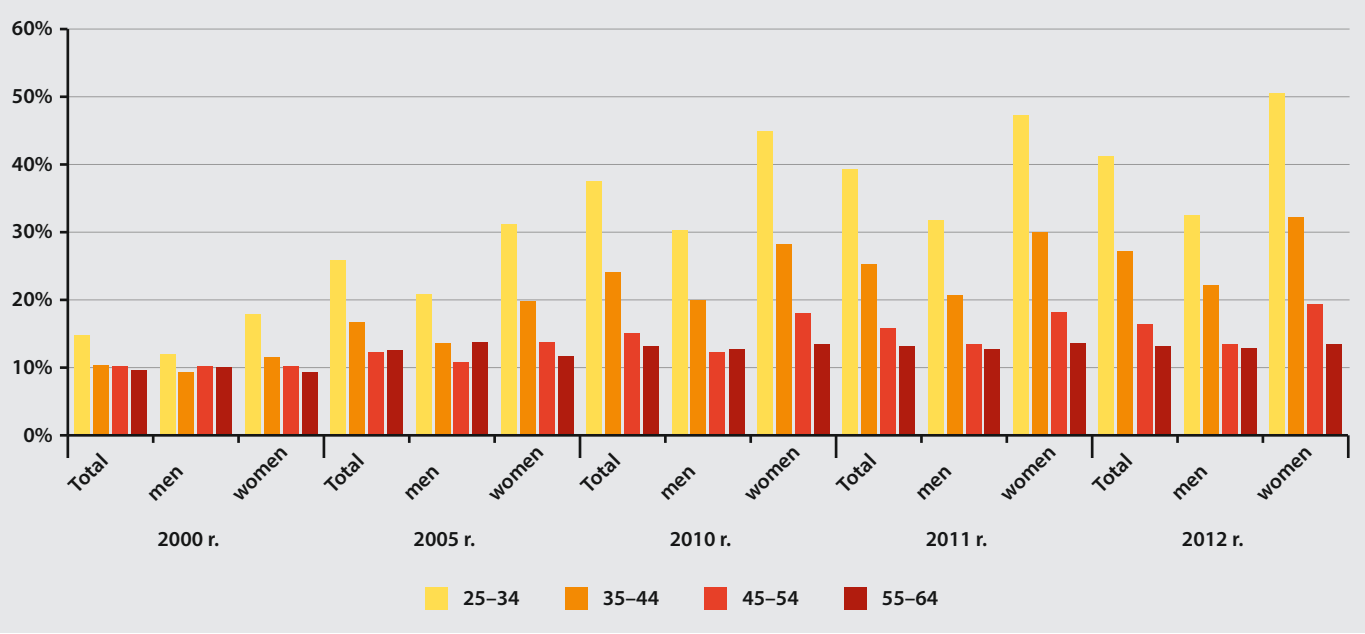
| year | education level | | | | |
|---|---|---|---|---|---|
| | higher secondary | vocational and post-secondary non-tertiary | general upper secondary | basic vocational | lower secondary and below |
| 2000 | 11,5 | 27,7 | 6,8 | 33,9 | 20,0 |
| 2005 | 17,4 | 27,2 | 7,4 | 33,6 | 14,4 |
| 2010 | 23,1 | 26,7 | 8,0 | 30,9 | 11,3 |
| 2012 | 25,2 | 26,4 | 8,1 | 30,2 | 10,2 |

*Source: IBE calculations from BAEL data, Q4 in selected years.*

The yearly rise in the proportion of graduates in the working population (25-64) is systematically increasing. At the same time these changes are reinforced by retirement of the least educated from the oldest cohort up to the age of 64. Graph 1.5 shows HE within 4 cohorts: 25-24, 35-44, 45-54,55-64 by gender. Between 2000 and 2012 the oldest cohort remains stable and between 200 and 2005 there is a slight increase in HE from 10 – 13% and remained at a similar level to 2012. Similarly, there was some fluctuation in the 45-54 cohort.

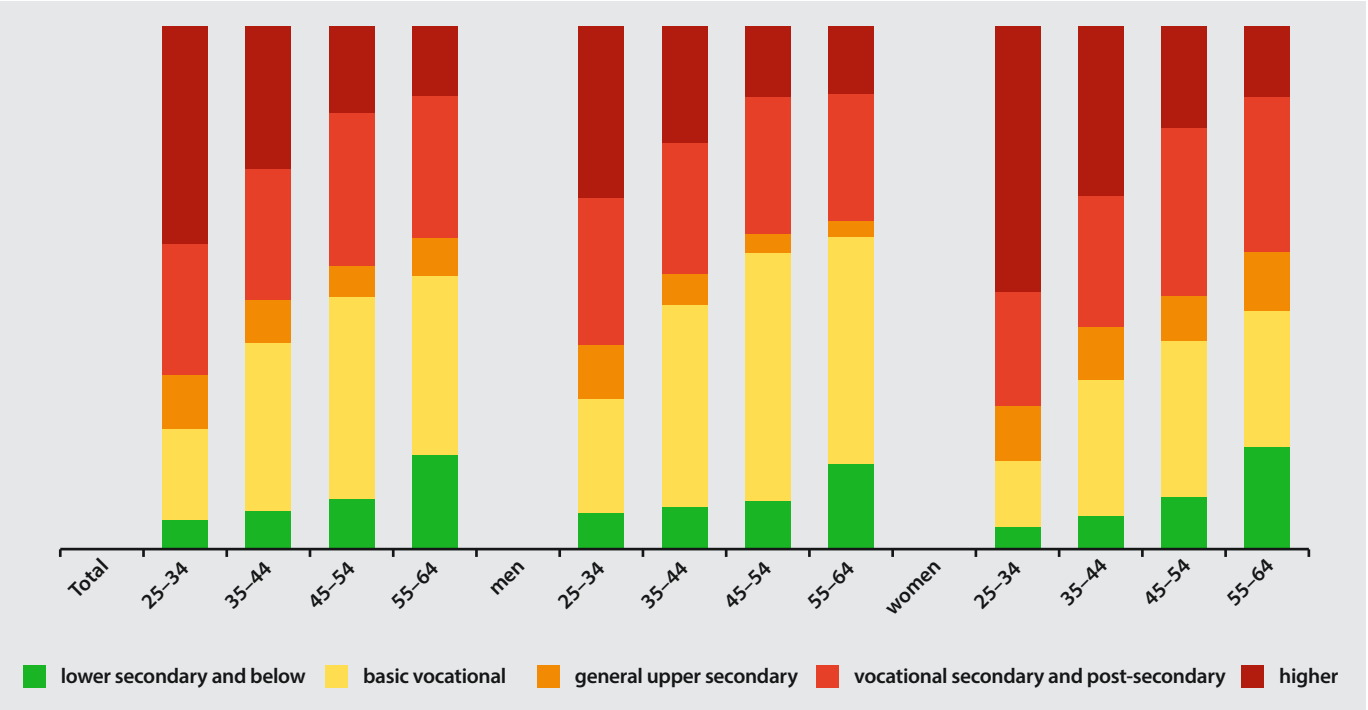
The youngest age group 25-34 contributes most to the dynamics of change, while demonstrating major gender differences. HE became almost universal amongst the younger women. 51% of women aged 25-34 but only 33% of men in this age group had obtained degrees in 2012.

**Graph 1.5. Percentage of people with tertiary education by age groups (%).**




*Source: IBE calculations from BAEL data, Q4 in selected years.*

**Graph 1.6. Education profiles for men and women aged 25-64 (%) in 2012.**



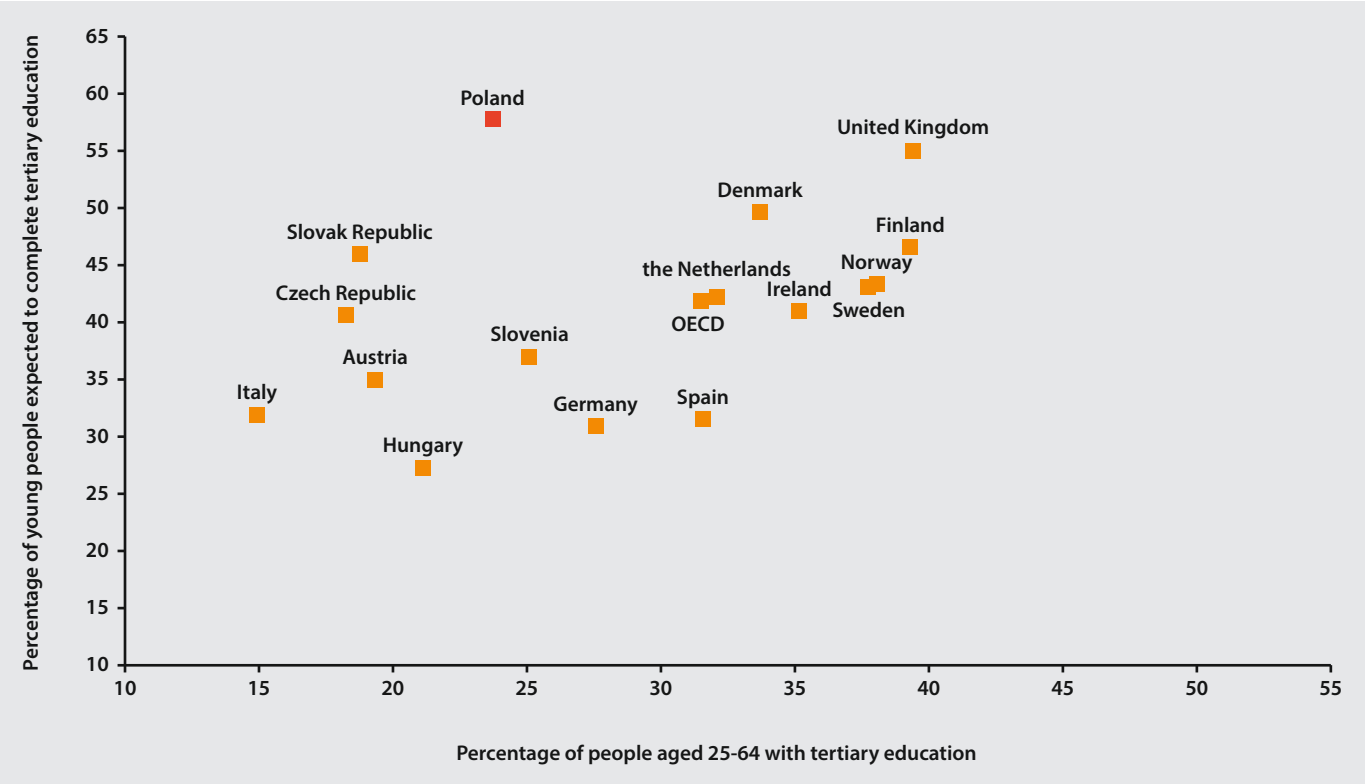

*Source: IBE calculations from BAEL data, Q4 in 2012.*

Accompanying this relative increase there was a reduction in those finishing education before matura level. This is an encouraging sign demonstrating inter-generation educational mobility. Only 6% aged 25-34 had this low educational attainment in 2012, whilst in the 55-64 age-group they still accounted for 18%. There were major changes in the groups with basic vocational education. These differences can be clearly seen, only 17% in the youngest cohort compared with over 34% of the 55-64 year olds. There were no changes to the population with general and vocational secondary education. The OECD projection based on the profiles of different age-groups, estimated the uptake for HE for young people. Poland, as compared with other OECD countries, has a good chance of attaining the highest levels of HE uptake to join the UK, Denmark and Finland. The question is however is raised whether this position and interest in HE in Poland will be sustained or is simply the consequence of catching up with other OECD economies. From data shown above in Students and their studies, although the gross figure for uptake to HE is still high, it nevertheless still decreased in 2011 and should discourage hasty prognosis.

One important aspect of HE in Poland is its relatively easy access, as seen in the large number of students, especially in first year. However, according to the OECD indicator, the completion level of studies (62%)[2], is below the OECD average (68%). Countries such as Hungary, Norway, Sweden and the USA score below Poland, but Denmark, Finland, France, Japan and Spain score over 75%. (OECD, 2013)

[2] Defined by OECD as the proportion of graduates in the number of students entering tertiary education in a given age cohort.

**Graph 1.7. The population of Poland aged 25-64 with tertiary education compared to OECD in 2011.**



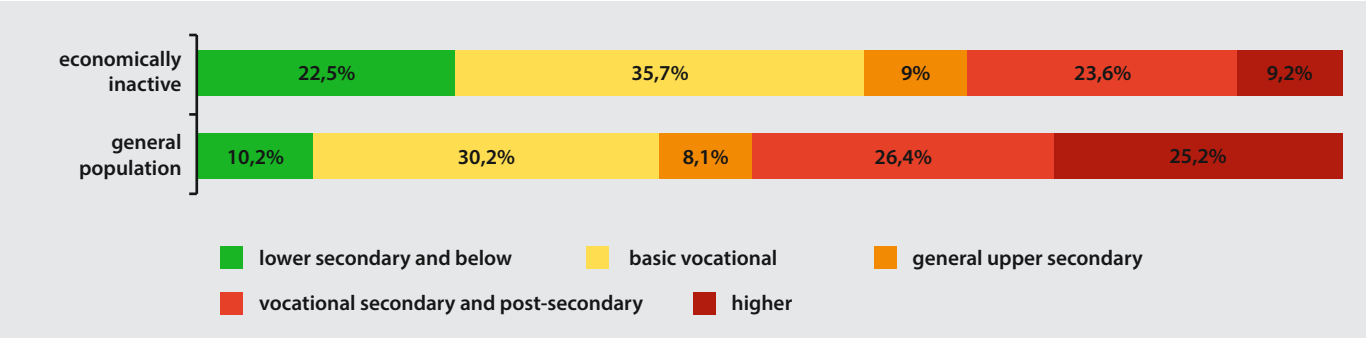

*Source: Based on data from OECD/ StatExtracts, accessed: 19.02.2014.*

### 1.2.1. Education and professional activity

A few factors are involved in educational profile and increase in interest in HE in Poland. The foremost are the following: increase in the number of secondary schools qualifying students for university entry; rising aspirations and expectations of young people with respect to work opportunities; and avoidance of unemployment owing to HE. The expectations are for good reason; as studies show, people with HE are less threatened by unemployment, find work more quickly, have greater opportunities for career development and achieve higher salaries than their lesser educated peers. (Mincer, 1974; Psacharopoulos, 1985; Mincer, 1991; Machin and Manning, 1999; OECD, 2013). Economists explain that greater ease in finding employment is the result of their greater fluency with finding and using information about potential jobs, their qualifications allow them greater flexibility in meeting employers, needs and they are more willing to supplement their qualifications with newly gained expertise. Employers searching for graduates preferentially finance their recruitment compared with non-graduates. Moreover, firms are reluctant to shed educated specialist workers in comparison with those who are more easily replaceable.

Comparison of educational profiles of those who are professionally inactive with the general population reveals significant differences. Unlike those with HE, the population leaving school before matriculation as a proportion of those professionally inactive, is twice that of those aged between 25-64. The reverse situation is observed in those with HE.

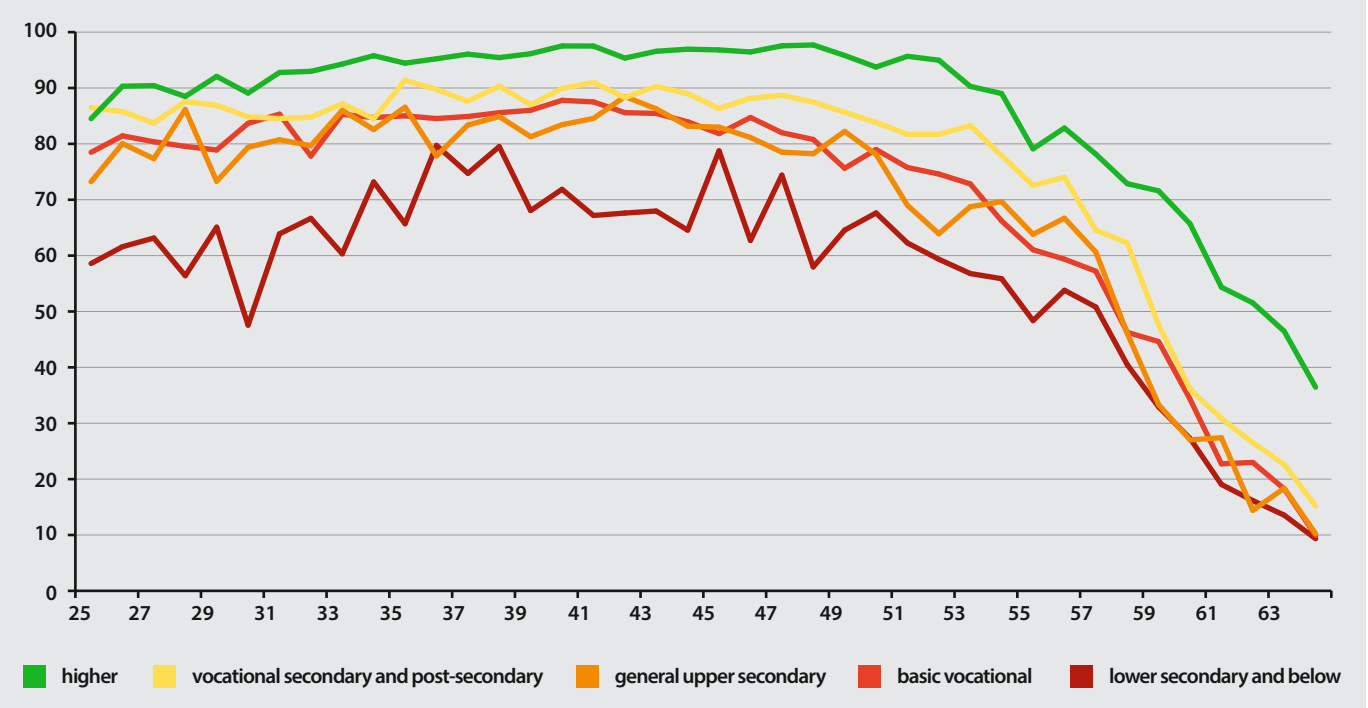
**Graph 1.8. The structure of economically inactive and general population aged 25-64 by level of education in 2012 (%).**




*Source: IBE calculations from BAEL data, Q4 in 2012.*

In 2012, professional activity as measured by the proportion of those in employment or looking for work for a given age group is the greatest for those with HE, it reduces with level of education, whilst activity of those with basic vocational education closely matches those with general secondary education. At the same time, the highest proportion of those working or looking for work is in the 35-44 age group, for every educational level – see graph 1.9.

**Graph 1.9. Economic activity of population age 25-64 by age groups and level of education in 2012 (%).**




*Source: IBE calculations from BAEL data, Q4 in 2012.*

A more precise breakdown of professional activity by age and gender is presented in the table below. Professional activity is observed greatest amongst those with HE and this covers the entire period 2000-2012, although gender differences account for some disparity. Men with secondary vocational education achieved similar activity to those with HE in 2000 and 2012, but even greater in 2011.

**Table 1.2. Economic activity by age and sex (%).**

| year | sex and age group | higher | vocational secondary | general upper secondary | basic vocational | lower secondary and below | Total |
|---|---|---|---|---|---|---|---|
| 2000 | Total 25–64 | 88 | 80 | 70 | 76 | 53 | 73 |
| | men 25–64 | 91 | 86 | 80 | 82 | 64 | 81 |
| | women 25–64 | 86 | 75 | 66 | 65 | 44 | 66 |
| | Total 25–34 | 94 | 88 | 81 | 86 | 75 | 86 |
| | men 25–34 | 97 | 96 | 89 | 96 | 87 | 95 |
| | women 25–34 | 92 | 81 | 77 | 70 | 61 | 77 |
| 2005 | Total 25–64 | 89 | 77 | 68 | 73 | 50 | 73 |
| | men 25–64 | 91 | 84 | 79 | 80 | 62 | 80 |
| | women 25–64 | 87 | 71 | 63 | 61 | 40 | 66 |
| | Total 25–34 | 93 | 88 | 81 | 85 | 71 | 86 |
| | men 25–34 | 97 | 95 | 88 | 95 | 82 | 94 |
| | women 25–34 | 91 | 81 | 75 | 68 | 56 | 79 |
| 2010 | Total 25–64 | 89 | 75 | 68 | 70 | 48 | 73 |
| | men 25–64 | 93 | 84 | 83 | 78 | 59 | 81 |
| | women 25–64 | 86 | 67 | 60 | 57 | 38 | 65 |
| | Total 25–34 | 92 | 85 | 79 | 81 | 66 | 85 |
| | men 25–34 | 97 | 95 | 88 | 93 | 74 | 93 |
| | women 25–34 | 89 | 74 | 70 | 61 | 53 | 77 |
| 2011 | Total 25–64 | 89 | 76 | 69 | 70 | 48 | 74 |
| | men 25–64 | 93 | 85 | 85 | 78 | 59 | 81 |
| | women 25–64 | 86 | 68 | 60 | 57 | 38 | 66 |
| | Total 25–34 | 92 | 86 | 78 | 83 | 60 | 85 |
| | men 25–34 | 96 | 96 | 91 | 93 | 72 | 93 |
| | women 25–34 | 89 | 73 | 65 | 65 | 43 | 77 |
| 2012 | Total 25–64 | 89 | 76 | 70 | 69 | 49 | 74 |
| | men 25–64 | 93 | 85 | 87 | 77 | 60 | 81 |
| | women 25–64 | 87 | 68 | 60 | 57 | 38 | 67 |
| | Total 25–34 | 91 | 86 | 79 | 82 | 62 | 85 |
| | men 25–34 | 96 | 96 | 92 | 91 | 73 | 93 |
| | women 25–34 | 88 | 72 | 66 | 65 | 43 | 77 |

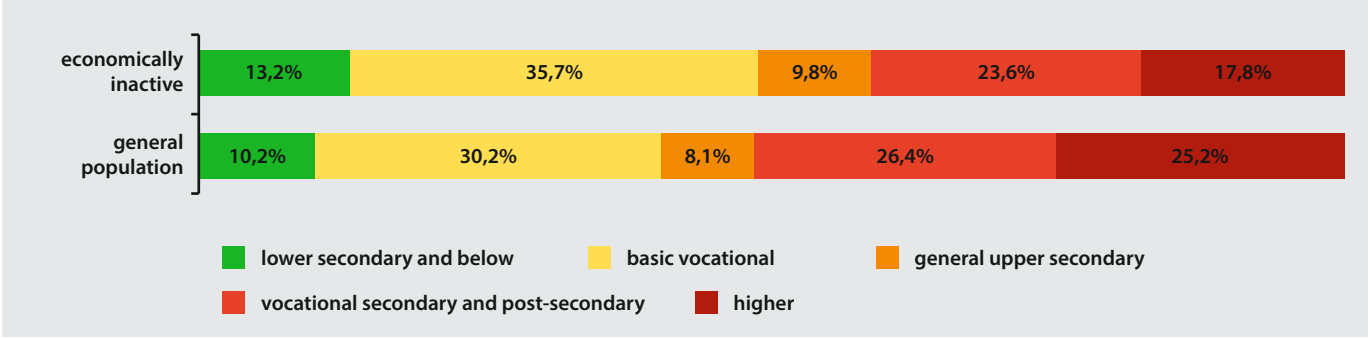
*Source: IBE calculations from BAEL data, Q4 in selected years. The category: higher education includes persons with academic degree (at least doctoral degree), Master's degree or equivalent, Bachelor's degree or equivalent; the category: vocational secondary includes persons with post-secondary school graduation certificate or secondary vocational education; the category: lower secondary and below includes persons who completed: lower secondary school or primary school, have incomplete primary education or have no formal education*

People with primary education or lower demonstrated the lowest professional activity. Only a half had found work and women were the least active on the labour market. Only 38% of these women, aged 25-64, were professionally active in 2012, lower than in 2000. Interestingly, young men in this category were particularly active, 73%. Of the three remaining groups: secondary vocational, secondary general and basic vocational, those with secondary general figure least in employment, although yet again there is a disparity between men and women. This pattern is repeated for general population in employment and for men, but not for women. Women with secondary education are more active in employment or looking for work than those with only basic vocational education. This is the risk group.

### 1.2.2. Education and the labour market

The unemployed, according to the international definition, who are able and searching for work, have an educational profile which is closer to that of the population aged 25-64 than those who are professionally inactive. Those with primary general, secondary general and basic vocational education are more frequent among the unemployed, whilst those with secondary vocational and HE figure less in the population as a whole.

**Graph 1.10. The structure of unemployed and general population aged 25-64 by level of education in 2012 (%).**




*Source: IBE calculations from BAEL data, Q4 in 2012.*

In spite of the increase in those graduating with HE and their greater proportion in the whole population, this group is least threatened by unemployment in comparison to those with other levels of education. In 2012, of those with degrees and professionally active, 5% were unemployed, whilst among those with the lowest educational achievement (lower secondary school or below), this figure was as high as 16% and among those with general secondary education almost 11% of professionally active were unemployed. This tendency has prevailed since 2000, although the advantage of a degree seems to have less influence. Whilst in 2000, unemployment among those with higher education was 10% lower than the whole population, in 2012 that difference was only 3.5%. This may be attributable to popularisation of HE and increasing numbers of graduates.

**Table 1.3. The level of unemployment is inversely proportional to level of education (%).**

| year | sex and age group | higher | vocational secondary | general upper secondary | basic vocational | lower secondary and below | Total |
|---|---|---|---|---|---|---|---|
| 2000 | Total 25–64 | 4 | 11 | 15 | 16 | 20 | 13 |
| | men 25–64 | 4 | 8 | 12 | 13 | 18 | 12 |
| | women 25–64 | 4 | 13 | 16 | 22 | 21 | 16 |
| | Total 25–34 | 6 | 12 | 19 | 20 | 30 | 16 |
| | men 25–34 | 6 | 7 | 10 | 15 | 27 | 13 |
| | women 25–34 | 6 | 18 | 23 | 29 | 35 | 20 |
| 2005 | Total 25–64 | 6 | 12 | 16 | 19 | 25 | 15 |
| | men 25–64 | 6 | 9 | 12 | 16 | 23 | 13 |
| | women 25–64 | 7 | 15 | 19 | 24 | 27 | 16 |
| | Total 25–34 | 9 | 15 | 20 | 20 | 36 | 17 |
| | men 25–34 | 8 | 11 | 15 | 17 | 33 | 15 |
| | women 25–34 | 10 | 20 | 24 | 27 | 41 | 19 |
| 2010 | Total 25–64 | 4 | 7 | 10 | 9 | 16 | 8 |
| | men 25–64 | 4 | 6 | 9 | 9 | 15 | 7 |
| | women 25–64 | 4 | 8 | 11 | 11 | 17 | 8 |
| | Total 25–34 | 6 | 10 | 13 | 12 | 24 | 10 |
| | men 25–34 | 6 | 8 | 13 | 10 | 20 | 9 |
| | women 25–34 | 7 | 12 | 14 | 17 | 34 | 11 |
| 2011 | Total 25–64 | 5 | 7 | 11 | 10 | 16 | 8 |
| | men 25–64 | 4 | 6 | 8 | 9 | 14 | 7 |
| | women 25–64 | 5 | 10 | 13 | 12 | 17 | 9 |
| | Total 25–34 | 7 | 11 | 12 | 14 | 22 | 10 |
| | men 25–34 | 6 | 7 | 10 | 12 | 19 | 9 |
| | women 25–34 | 8 | 16 | 16 | 18 | 31 | 12 |
| 2012 | Total 25–64 | 5 | 7 | 11 | 11 | 17 | 9 |
| | men 25–64 | 5 | 6 | 8 | 10 | 15 | 8 |
| | women 25–64 | 5 | 9 | 14 | 13 | 19 | 9 |
| | Total 25–34 | 8 | 10 | 12 | 15 | 23 | 11 |
| | men 25–34 | 7 | 8 | 9 | 12 | 19 | 9 |
| | women 25–34 | 8 | 14 | 17 | 22 | 36 | 12 |

*Source: IBE calculations from BAEL data, Q4 in selected years. The category: higher education includes persons with academic degree (at least doctoral degree), Master's degree or equivalent, Bachelor's degree or equivalent; the category: vocational secondary includes persons with post-secondary school graduation certificate or secondary vocational education; the category: lower secondary and below includes persons who completed: lower secondary school or primary school, have incomplete primary education or have no formal education*

The level of unemployment is inversely proportional to level of education. People with secondary vocational education are less at risk from unemployment compared with those with secondary general, who are less threatened than those with only a basic level of vocational education. Poland is, in this respect, no exception. As the OECD figures show, most OECD nations and in particular the EU 21 member states illustrate the strong dependency between education and employment (OECD, 2013).

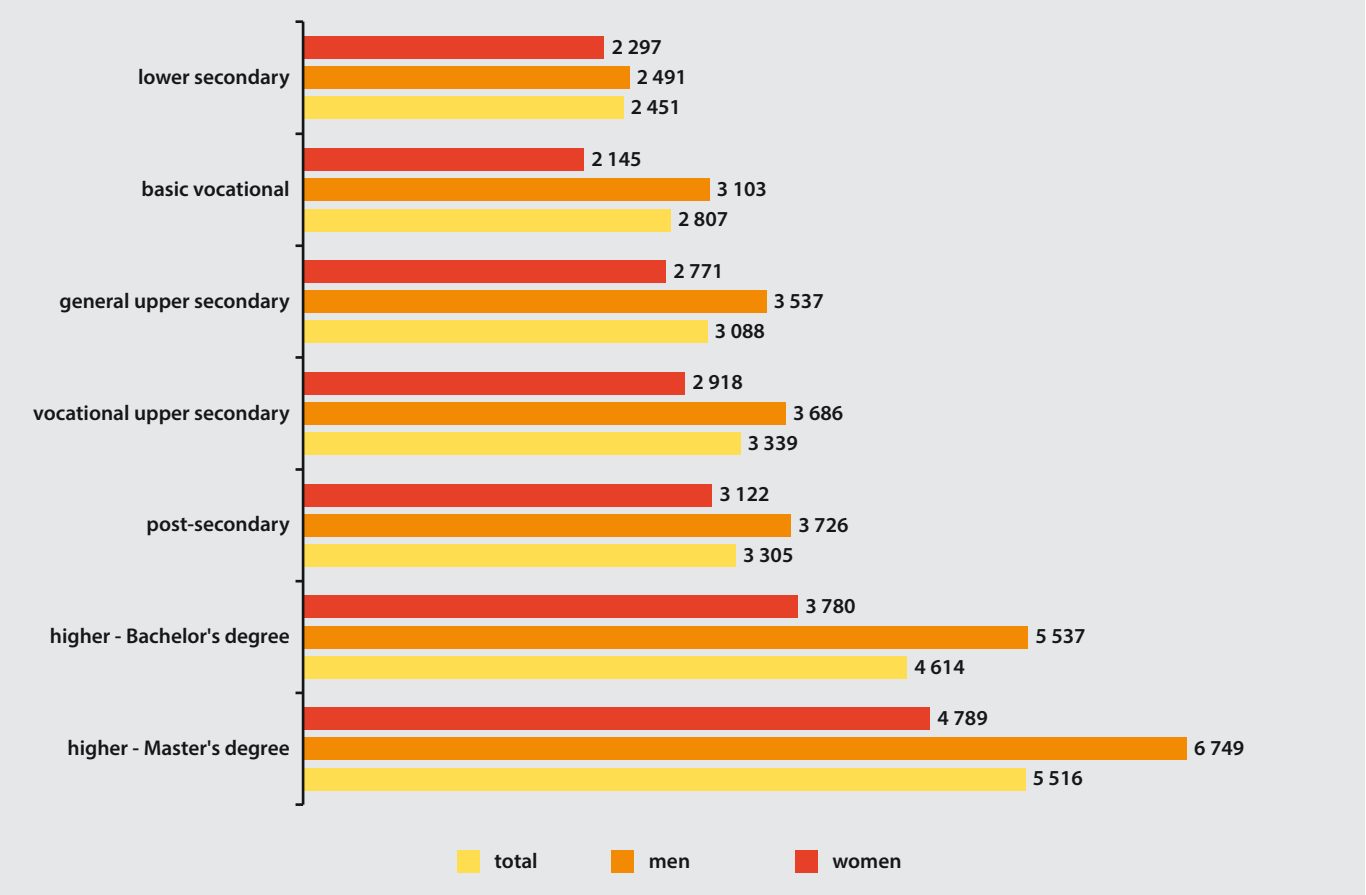
**Graph 1.11. . Differentiation of unemployment rates by level of education in population aged 25-34 in OECD countries in 2011 (%).**


*Source: Based on the OECD data (2013), Table A 5.4 (Web only), 24.01.2013 version.*

### 1.2.3. Education and earnings

As mentioned earlier, level of education also has an effect on expectations (CBOS, 2013b) and on remuneration within reach (graph 1.12). The higher the level of education, generally the higher the salary obtained.

**Graph 1.12. Avarage gross wages and salaries in October 2012 by level of education (in PLN).**




*Source: Based on data from Structure of wages and salaries in October 2012.*

*The category: higher education - Master's includes persons with at least doctoral degree and Master's degree, Medical Doctor degree or equivalent; the category: higher education - Bachelor's degree includes persons with Bachelor's degree, Engineer's degree or equivalent; the category: post-secondary includes persons who completed post-secondary or post-secondary non-tertiary schools.*

According to the theory of human capital (Becker, 1964), investment in the human capital of an individual contributes towards their productivity, explaining the greater reward for their work. However, as Spence (1973) argues, employers cannot fully estimate the knowledge and skills of potential employees or their effectiveness – so they use information about their level and course of studies as a guide.

Studies on the return from education in Poland have been conducted for many years (Strawiski, 2006; Newell and Socha, 2007; Myck et al., 2009; Gajderowicz et al., 2012). From these analyses the findings are fairly congruent:

- the premium of education is higher in the private sector than the state sector (Newell and Socha, 2007; Gajderowicz et al., 2012),
- the return from HE for men is lower than for women[3] (Myck et al., 2009),
- between 1995 and 2009, the premium from HE relative to secondary education has been reducing (Gajderowicz et a.l, 2012).

Above all, studies have shown that many factors beyond pay have a measurable influence on decisions about education, sometimes comparable with expected level of pay. Examples include prestige and life style associated with a profession (Kalisiak et al., 2012).

[3] Men with higher education degree may expect 7-10% higher salaries than men without .

In short, the educational profile of Poland in 2012 can be observed to be changing and the changes are most striking in the youngest cohort aged 25-34: the contribution of those with HE is growing, in particular for women, together with diminishing roles for those with lower levels of education, that is, those with primary general education or less. The situation for people on the labour market, as measured by both professional activity or unemployment, is also greatly influenced by level of education. While in 2012, people with HE were the least affected by unemployment, the difference between them and the general population is diminishing and which to a large extent is the result of their increasing numbers. In recent years, those aged 25-34, with secondary vocational education have been faring similarly and in 2011, they demonstrated even greater professional activity than those with HE. Opinion about the favourable work situation for this group appeared in the report of the Study of Human Capital in Poland (Gorniak, 2012). Those completing this course of study under the age of 30 and qualified as technicians, are decidedly well placed in comparison with other secondary school leavers (higher earnings and lower unemployment) and this would appear to offer a sensible choice for those who do not plan to continue to HE. It may well be worth observing this phenomenon to monitor how these particular students fare in the future on the labour market. Still, education has a specific effect on level of earnings and in particular the return from those with HE, at least at Masters' level, throughout the whole population (graph 1.12) just as for those under 30 (Gorniak, 2012).

## 1.3. Skills

### 1.3.1. Adult education

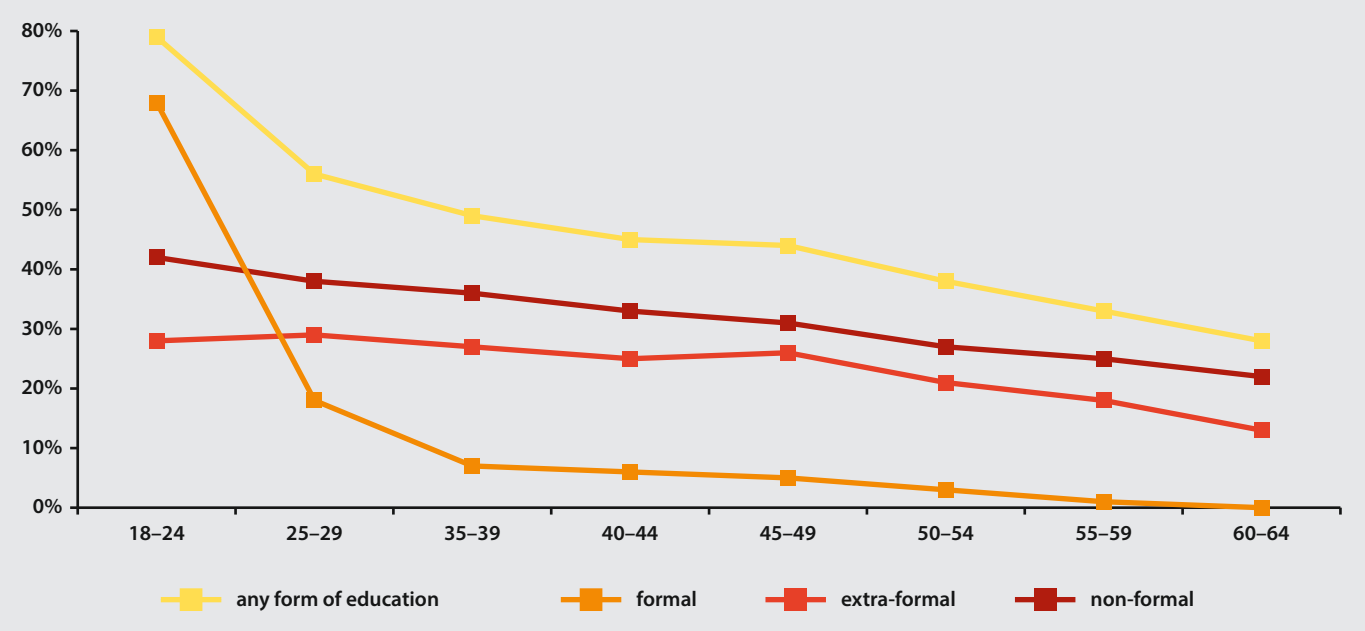
The basic criterion used to evaluate the state of education was until recently based on the level of education achieved. As asserted earlier, this is justified. Formal education, to a great extent, is the deciding factor for chances to find work and successful earnings. Information about level of education is easy to obtain: data on school-leavers and students are available and questions about educational level are invariably addressed in educational and employment studies. This information is also required by employers and is used to select candidates for vacancies.

In spite of this, for many reasons, information about level of education is imperfect and increasingly imprecise in showing the state of education in society, for which formal education does not reflect the variety of actual competencies. This equally affects successive years of school leavers, just as people completing specific levels and types of school over the decades. Above all, changes in the labour market lead to irrelevance of knowledge and skills which are tied to use of certain technologies. Adult learning has increasing significance, which does not occur to a great extent within the framework of formal schooling, but more frequently from participation in training and other forms of organised learning, not to forget, self-learning. Working, social activity and civic involvement form an important source for new skills. An important factor is the changes in the labour market profile: a reduction in the number of jobs involving routine, simple tasks – which can successfully be performed by machine – and increasing numbers of jobs in the service sector, which can require analytic skills, problem solving and social skills. An increasingly better understood phenomenon is the process of aging and the cognitive advantages and problems of older people, which is of fundamental significance in an aging population, as we also have in Poland.

In Poland, compared with other EU countries, relatively few adults participate in education or training. One noticeable factor is age – older people, not only participate less often but also rarely engage in independent learning. There is a sharp fall in participation in education and training observed in the over-50s, which is possible to tie to earlier occupational disengagement than in other countries and disinclination of employers to invest in training this age-group. Young well-educated and working town dwellers are the most frequent to participate. Managers, specialists

and middle-ranking technicians are among the more frequent attending training or courses. The unemployed and those with minimal levels of education rarely supplement their competencies – the very people who would be most likely to be able to attend (Szczuka et al., 2012).

**Graph 1.13. Adult uptake of continuing education in 2011.**




*In the 2012 study, respondents were asked about their participation in different forms of learning during 12 months prior to the interview.*
*Source: IBE calculation from Adult Education 2011. GUS, Warszawa 2013.*

The above data indicate that the traditional model for education still dominates in Poland, in which education is the focus before entering a career or starting a family. The indicator for formal and informal learning in the 4 weeks prior to interview, calculated on the basis of the Study of Human Capital in Poland study has remained practically unchanged over the last two decades. Between 2003 and 2012, this indicator has varied between 5.6-6.5%. In 2012, the figure was a meagre 5.7% in comparison with the EU-27 mean of 10.4%.

### 1.3.2. Changes in the competencies of young people

Available comparative data from international studies measuring skills has provided an important basis for discussion about the quality of education over the last two decades, including in Poland. Two particular studies are of particular significance to the debate in Poland: PISA (Programme for International Student Assessment) and PIAAC (Program for the International Assessment of Adult Competencies). Successive rounds of the PISA survey every three years allow evaluation of changes to the Polish education system. In the year 2000, the survey covered children in their first year at secondary school after 8 years primary school. In 2003, children in their third grade of lower secondary school, the second year of intake, were tested and in 2012 the survey covered first grade at lower secondary school, the year that had been taught according to the new general core. PIACC is one of the first comparative international studies to investigate adult competencies.

Poland was one of the few countries in which the results from 15-year olds had improved according to the three areas tested. It is almost impossible to pinpoint the general factors or cause and effect mechanisms, but there is a lot of persuasive evidence to suggest that reform of the system mostly lies behind Polish improvement. Evidence of this is in the fact that results improved for students from various environments, socio-economic groups, villages and towns

**Table 1.4. Average scores* of 15-year olds in Poland and OECD in three skills measured by PISA in 2000-2012.**

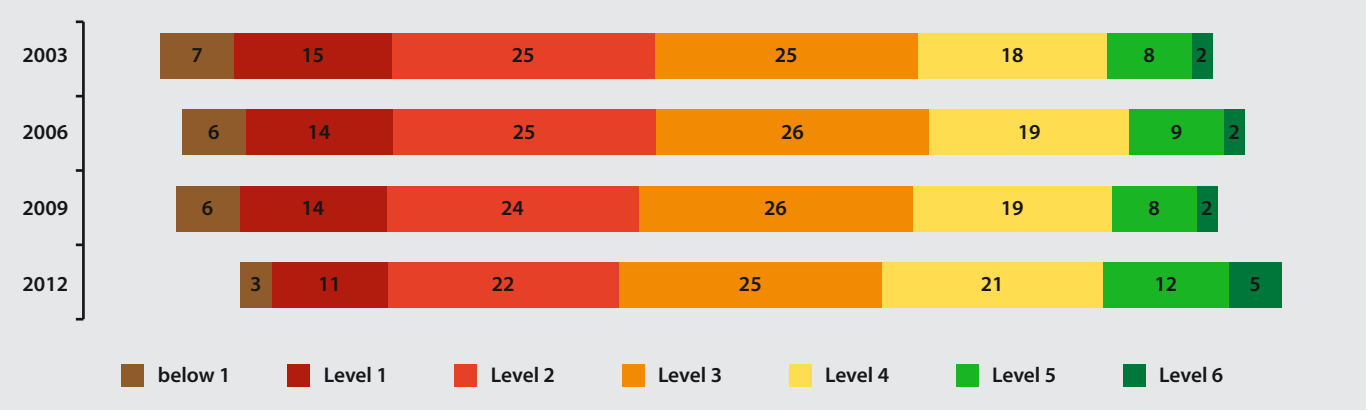
| skills | countries | 2000 | 2003 | 2006 | 2009 | 2012 |
|---|---|---|---|---|---|---|
| Reading literacy | Polska | 479 | 497 | 508 | 500 | 518 |
| | OECD | 500 | 494 | 492 | 494 | 496 |
| Mathematics | Polska | - | 490 | 495 | 495 | 518 |
| | OECD | - | 500 | 498 | 496 | 494 |
| Scientific literacy | Polska | - | - | 498 | 508 | 526 |
| | OECD | - | - | 500 | 501 | 501 |

** The table includes only results comparable across years. The PISA results are shown on a scale normalised for OECD countries in the first year of comparable measurement (mean 500, standard deviation 100).*

*Source: Polish Results from PISA 2012. Warszawa: Instytut Filozofii i Socjologii PAN 2013.*

It is possible to describe the variation using the levels of competence defined for PISA. In the case of mathematical skills those at the lowest levels are only able to solve the simplest types of problem based on direct figures requiring only routine calculation. People at the highest levels can model a complex situation, connect facts, come to conclusions, choose a solution strategy and explain their method of understanding. In Poland the percentage of people achieving only very low scores is systematically declining (the agreed level is below the second level of competence): for reading this percentage reduced fro, 23,5% in 2000 to 13,2% in 2012[4]. The percentage of 15-year olds reaching the highest level of competence is growing. Improvement in the mathematics results, in particular, was encouraging; in Poland there was no noticeable significant change between 2003 and 2009.

**Graph 1.14. Students at different mathematics performance levels in Poland between 2003 and 2012 (%).**




*Source: IBE calculation from OECD PISA.*

In fact, the percentage of students who scored the lowest was amongst the lowest in Europe so its further reduction is quite a challenge. As revealed by the Polish part of the PISA study, in the first year after lower secondary school the weakest students finishing primary education attend basic vocational schools. In effect, over half of those starting in basic vocational schools have very low levels of general competence (below second level), which could be a particular barrier to acquiring

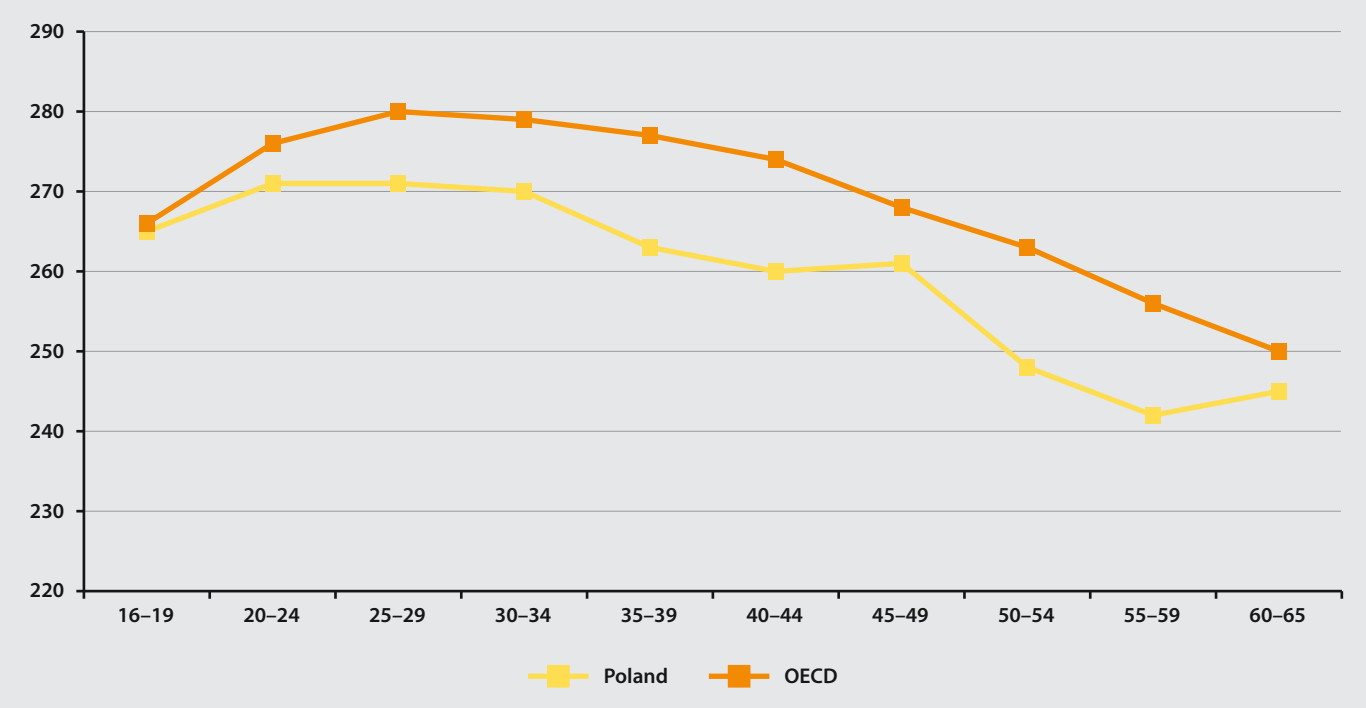
[4] In the European Union, the decreasing the proportion of students under level 2 was among indicators of the European cooperation in the area of education. It as assumed that by 2020 this proportion should not exceed 15% in areas measured by PISA for the member countries. The proportion of students under level 2 in reading literacy was included in the list of indicators used by the European Union to assess the risk of social exclusion..

occupational competence and one of the causes of difficulty for school leavers from these schools in the workplace.

### 1.3.3. Adult competencies

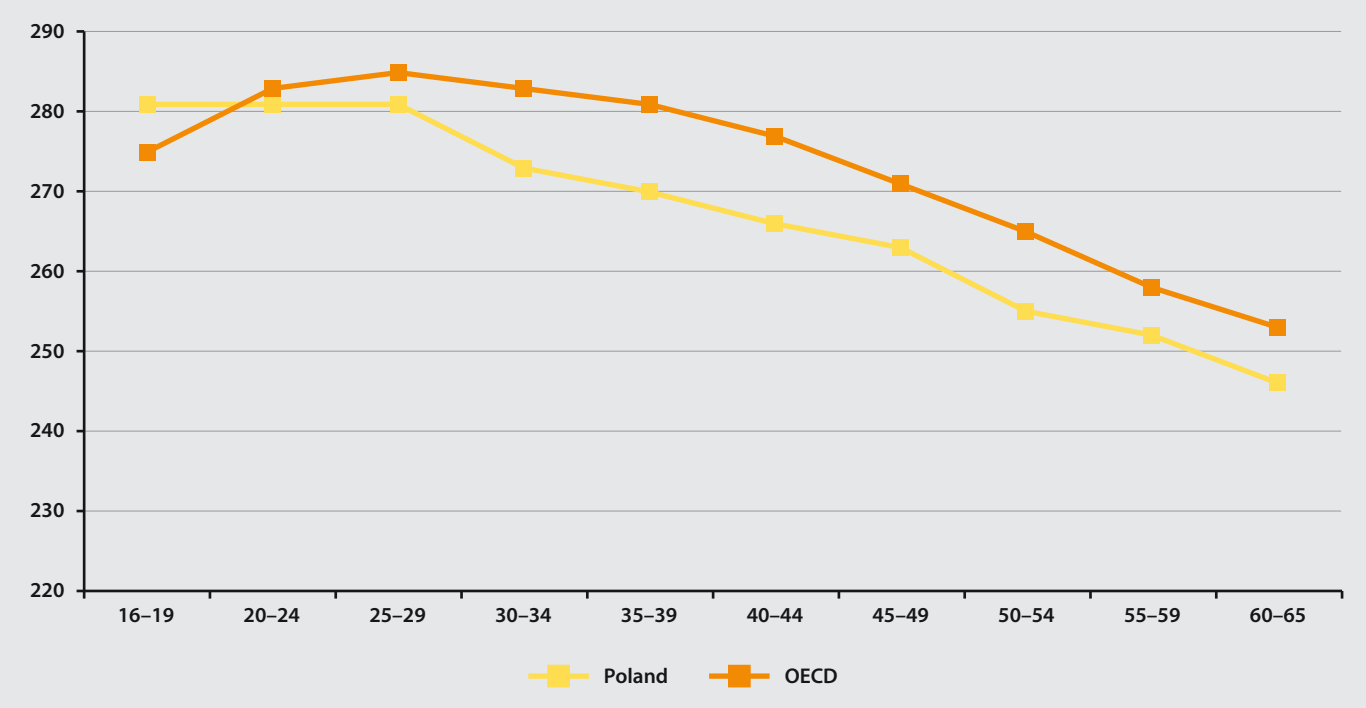
The second meaningful study, important from the perspective of assessment of the state of Polish education, was PIAAC. PIAAC measured basic abilities, essential for the modern world and forming the basis for acquisition of new skills: reading comprehension and mathematical reasoning. Introduced additionally into the study was a component to examine use of IT for solving problems[5]. The mean level of Polish achievement for 25-64 year olds was below the average for 22 OECD countries in the study. In both study areas, comprehension and mathematics, Czechs, Slovaks and Germans scored better. Only the French, Spaniards and Italians performed below Poles. Americans and the Irish scored below Poles in mathematics. Differences in mean country scores were modest. The main benefit of the test is to show variation of ability within countries. Differences in the mean values for different age groups showed that young Poles scored close to the OECD mean. In Poland, no increase in scores was observed between the ages of 20-29, as was observed in other countries participating.

**Graph 1.15a. The average level of reading literacy in Poland and OECD by age.**




[5] The detailed description of the study results and additional analyses are available in the Polish report (Rynko, 2013)..

**Graph 1.15b. The average performance level in Poland and OECD by age.**



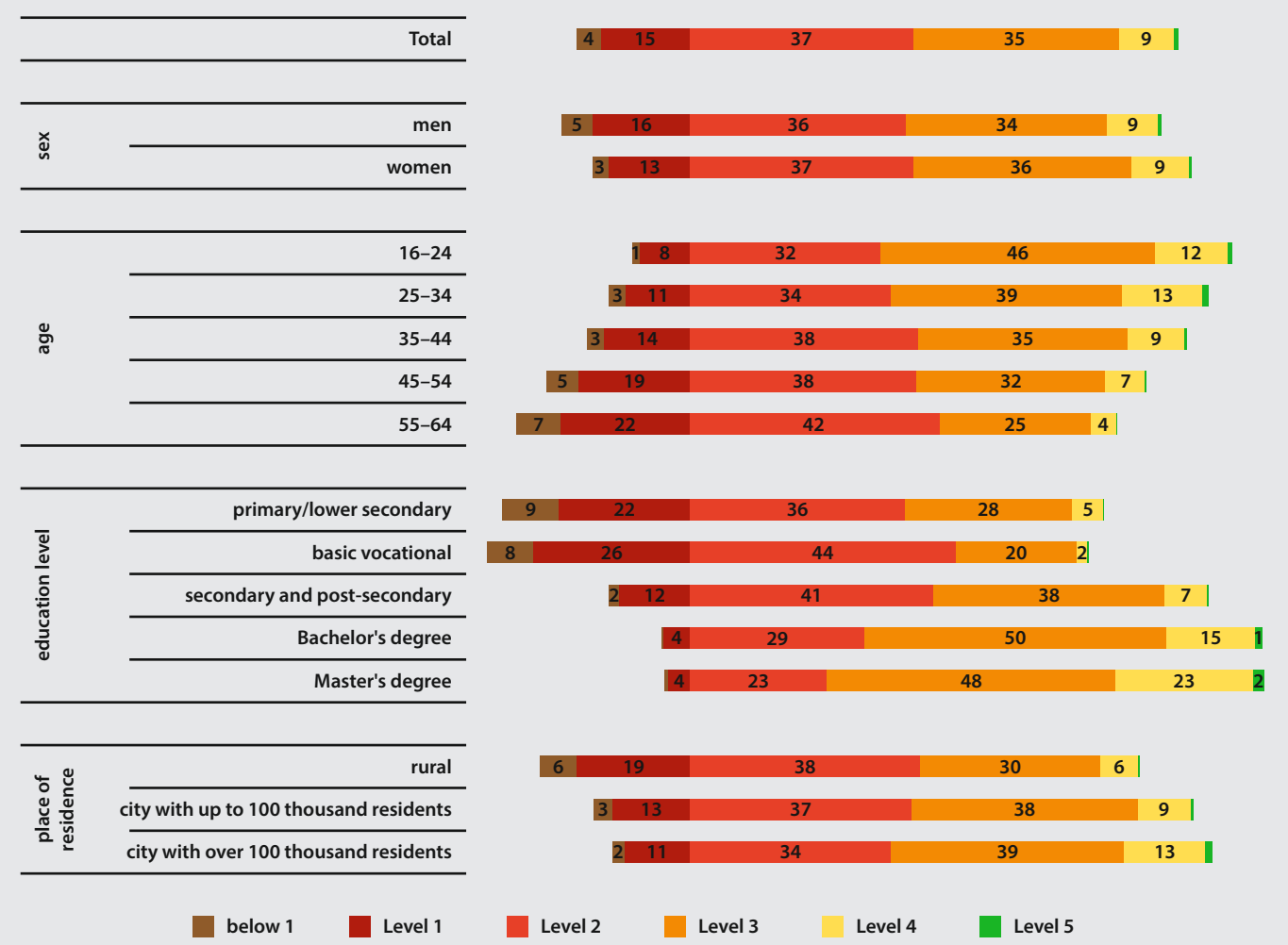

*Source: Rynko (ed.) Umiejętności Polaków – wyniki Międzynarodowego Badania Kompetencji Osób Dorosłych (PIAAC), Warszawa: Instytut Badań Edukacyjnych, 2013, p. 54.*

In order to illustrate variations in the PIAAC better, results are banded into six levels of performance. Just as in the PISA study, people below the second ability level can be regarded at risk – with poor abilities, which might render daily, personal, social and working life difficult. People at the highest levels, 4 and 5, might be regarded as the "opportunity groups", being the potential for innovation and commercial competitiveness. The proportion of people of lowest ability increased with age – the people with greatest ability reduced. Differences between those with primary, basic vocational and higher education were marked. Just the same, each of these groups was internally varied.

Comparing the PIAAC 2011 with the IALS carried out in 1994 showed a significant rise in ability in Poles' reading comprehension. Poland noted the greatest improvement of all 15 countries. In 1994, 40% of Poles had very poor abilities for reading comprehension. Between 1994 and 2011, this proportion halved. This improvement was noted for all age groups – so it was not the effect of remediation of educational profile or changes in the labour market.

Poles achieved very poor results in the part of the PIAAC survey concerning use of IT. People who participated in this part of the study were only those who had basic computer skills and agreed to the computer version of the test. A mean of three quarters from OECD countries participated in this test – in Poland only half (about 24% of respondents refused to participate in the computer test, 19,5% claimed to lack experience with computers and 6,5% did not pass the test of basic computer skills). Polish abilities were significantly lower than the OECD mean. Poor IT skills were confirmed by Polish PISA results. Polish 15-year olds stand out amongst their peers in terms of home computer use, but they performed poorly in the computer related parts of PISA: covering the reading and using computer tools to solve mathematical problems.

**Graph 1.16. Reading literacy performance levels of Polish population aged 16-65 by social and demographic attributes.**




*Source: IBE calculation from OECD PIAAC.*

The PIAAC results and publically available information from studies of ability allow a better understanding of the meaning of educational quality and its role in creating competitive economies and social cohesion. First analysis of PIAAC showed that in Poland formal education plays a greater role than in other countries which can be drawn from the relatively low frequency of Poles in continued education and the relatively strong relationship between education and participation in various types of learning. For people aged 35-55 in full-time employment the association between education (measured in years of study) and achieved earnings is stronger than in other countries. The level real ability for people with comparable education and work experience plays a less significant role in Poland than in most other OECD nations (Hanushek et al., 2013).

The success of young Poles in studies of ability encourage optimism. The main challenge is the significant difference between generations in terms of formal education and ability level and involvement in learning. Adult engagement with learning after finishing formal education is very low in Poland which constitutes an important barrier to increased competitiveness and improved social coherence.

# 2. Education in numbers

Autors:
*Małgorzata Kłobuszewska*
*Martyna Kobus*
*Agnieszka Kopańska*
*Magdalena Rokicka*

In this section we present a view of the most important quantitative changes in the Polish education system that have occurred in the last few years. The assessment presented refers to changes in numbers of children and young people in school, the number of schools and teachers and educational spending. In this analysis, information was drawn from publicly available graphs (GUS - Central Statistical Office of Poland), local government budgets and data from the educational information system.

The most important factor influencing quantity changes in education is the diminishing number of children. The lower number of students is the result of demographic changes affecting everything other than pre-schools which are becoming more accessible. The average number of students in classes and schools is reducing in urban just as in rural areas. A definite exception to this tendency is in the number of students in first classes at primary schools which as a result of reform of school starting age will generally increase in the school year 2015-2016. At this time we can expect numbers of children comparable to two decades ago and this year will graph in future years at successive levels of education and which will require infrastructure and staffing to be adjusted accordingly.

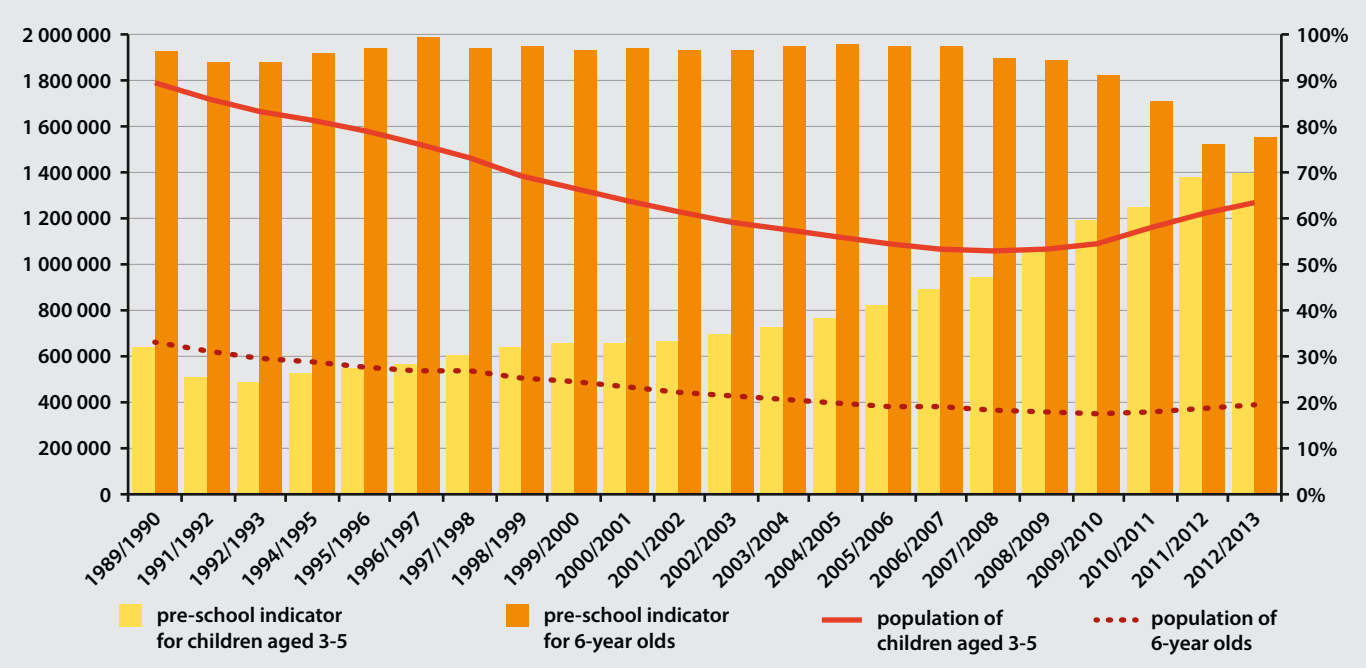
The most important requirements for education are the responsibility of local government at various levels. Over the last few years local government spending has generally successively risen. However, for the last two years this increase has been restricted to only one - the most important category of cost – salaries. The remaining running expenses and investment have fallen markedly in 2011 and 2012. This was connected to the crisis in public finances and also from the significant financial effort by local governments directed at community investment, jointly financed from foreign sources. Local governments, forced to seek savings, made them where it was relatively the easiest, where they were not constrained by legal demands. The lowest general increase in spending owing to lower numbers of children in schools effectively means that the cost of education per child will increase. Unfortunately the budget classification according to which public spending is categorised does not allow detailed analysis. For example, there is no classification which separates schools for young people from those for adults and also basic vocational are grouped together with technical schools. These problems with information render a faithful analysis of public spending on education rather difficult.

Changes in the numbers of children and young people influence the work of teachers. In recent years a slight drop in the number of teachers has occurred, while there has been a particular increase in pre-school establishments. At the same time, the number of posts has been falling faster than the number of teachers. In the same way, overtime has also decreased. Over the period analysed, the structure of professional promotion has significantly changed, at all levels of education there has been an increase in the part played by teachers at the highest level of career advancement. This has manifested itself in increased salaries. Changes in the regulation of teachers' pay were additionally significant. Median actual pay rose for all groups of teachers – comparatively the most in the case of trainee teachers. Comparing teachers' salaries with those of other people, they earn above average in most Polish local regions. Average teachers' pay is only lower than others' in the largest towns. Yet another important feature of teachers' pay is in its dynamics, significant in comparison with other professions. Pay dynamics in the teacher's career cycle is an important attraction to women in their choice of a teaching career. Their prospects in other work places are worse than in the teaching profession.

## 2.1. Participation in formal education and its resources

Demographic changes are the fundamental challenge to Polish education. Over the last two decades the number of births has fallen drastically, resulting in increasingly smaller cohorts of students at every level. Although between 2004 and 2010 there was a small increase in the number of births it did not , however, reach the level prior to 1990. Together with the accompanying reduction in child population, however, their participation in pre-school rose (graph 2.1). Over successive years increasingly more children between the ages of 3 and 5 entered various types of pre-school care. Change over the analysed period was significant. While in 2006 fewer than half of these children attended pre-school in 2010 the graph approached 63% and in 2012 – just under 70%. Without a doubt, this is the result of the introduction of the compulsory preparatory pre-school year for children aged 5 which has been in force since school year 2011-2012. In this age group, 92% of the children legislated for received pre-school care. This is related to several factors: postponement and emigration. According to GUS, in 2011 4.3% of children aged 0 to 4 and 3.7% aged between 5 and 9 were resident abroad (GUS, 2013b).
The increase in the popularity of pre-schools is possible owing to the significant increase in the number of pre-school establishments. In 2006 there were 7811, in 2012 – 9822, a 26% increase over 6 years. Accompanying this, pre-school groups and pre-school access points over the last five years increased from 209 to 1752 – a sevenfold increase (first data collected by GUS in the school year 2008-2009).

**Graph 2.1. Pre-school indicator (%) for children of pre-school age.**



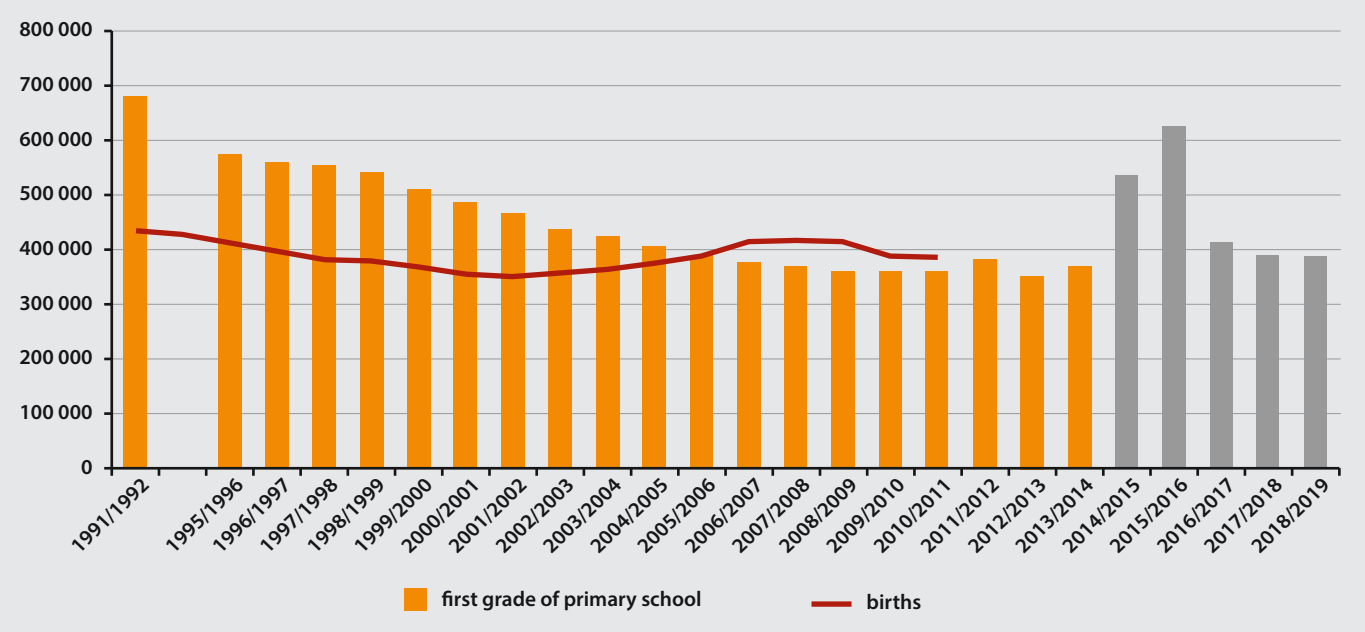

*Source: Source: IBE calculations from Education in 1989/1990 (2012/2013) school year (GUS). Pre-schooling indicator: proportion of children attending pre-school institutions in 1989-2012 in the total population of children in a given age. Left scale: population, right scale: pre-school indicator.*

Demographic changes are also reflected in the number of first year students. In the first grade of primary school, in school year 2012/2013, the number was half of what they were at the beginning of the transformation period, although, as mentioned earlier, between 2004 and 2010 a slight return occurred from the drop in births and it was the children from these momentary increases that have been starting school in recent years. This caused a visible increase in the numbers of children in the first grades in 2011/2012. Added to this were changes in mandatory entry age to school. The intention of the reforms carried out in 2008 was that all 6-year old children would enter the first grade from 2012. However, protests created a delay for this requirement. In successive

years only a small proportion of 6-year olds will enter the first grade. In school year 2010/2011 they accounted for 9%, in 2011/2012 about 20% and in 2012/2013 – 17% of children. After the changes, as intended by the reforms, school year 2013/2014 was the last in which all parents could choose to send their 6-year old to school or to keep them for another year at pre-school. From school year 2014/2015 schools will be obliged to accept all children aged 7 and 6-year olds born in the first half of 2008. In school year 2015/2016 the other half of the 2008 children will enter first grade; schools will also have to accept all 6-year olds, i.e., children born in 2009.

These changes, following the intentions of reform and the fact that years 2008-2010 were years in which more children were born, mean that we can expect noticeable accumulation of children in schools in 2015/2016 (Graph 2.2). Estimates for children in first grades in future years-based on the assumption that 15.4% 6-year old children entering first grade in 2013/2014 were born in 2007 and that in 2014/2015 50% of children were born in 2008 (6-year olds) and after that all children will be aged 6. This implies that in 2014/2015, 85% of the year will be 7-year olds (the remainder entered school in 2013/2014) and 50%, 6-year olds. These estimates are shown in Graph 2.2 below. As can be seen, in school year 2015/2016 we can expect a similar number of children in first grades to the level of two decades previously. This year's intake, by passing through all levels of education will weigh on the organisational strength of schools, demanding greater numbers of teachers. After these students leave successive levels of schooling, again following the demographic tendency, there will be a reduction in the need for staff and infrastructure[6].

**Graph 2.2. Number of students in first grade of primary school from 1989–2012, and estimates for 2014/2015-2018/2019.**



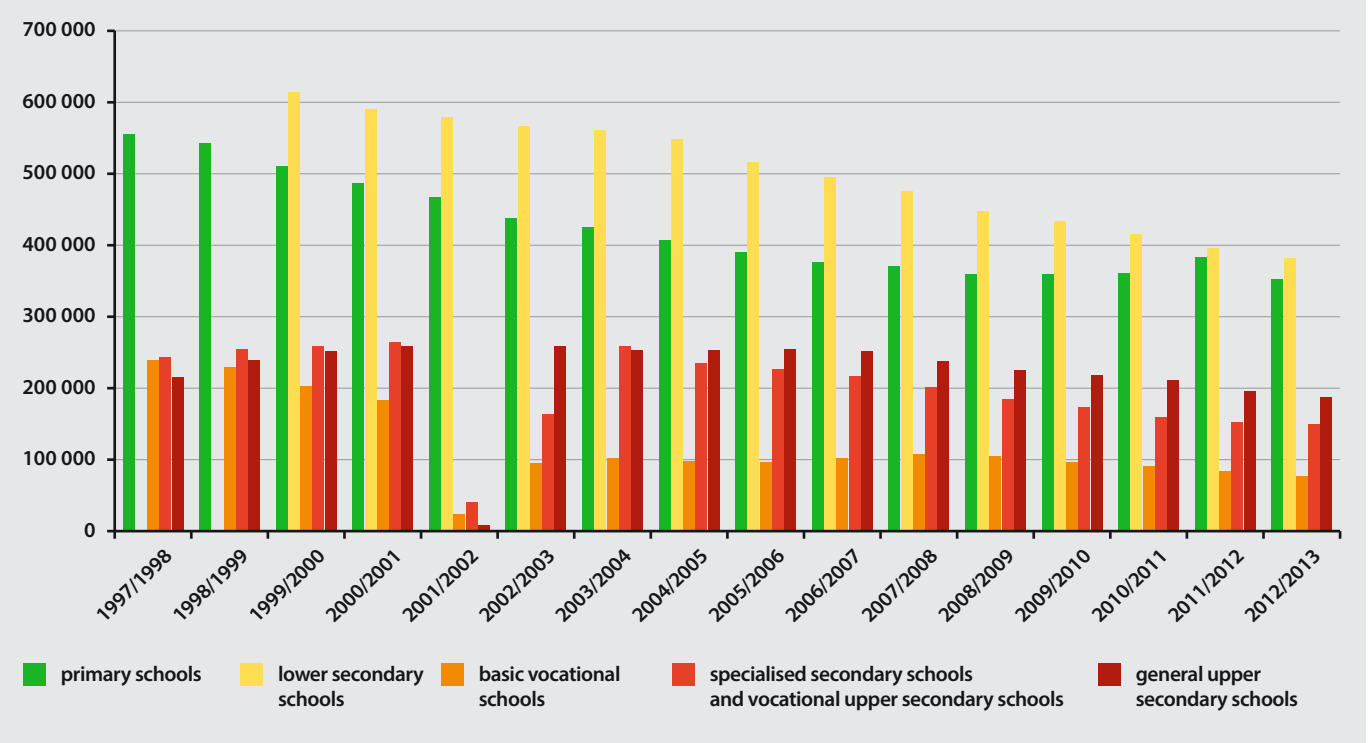

*Source: IBE calculations from the Local Data Bank, GUS. Grey columns are estimates.*

Demographic changes during the last 20 years can also be generally seen in students of primary, lower and upper secondary schools. From the perspective of education reform, data from before 1999 and later reflect different populations (different cycles of study at general levels of education) and cannot be directly compared. However, it is possible to represent the scale of demographic change. Further, it should be remembered that in school year 2001/2002 lower secondary schools started to operate at full capacity (grades one to three), in this year there was no new intake to upper

[6] These estimations are based on the number of births in succesive age groups. It should be noted that the number of children in schools is slightly lower (approximately 2-3%).

secondary schools (basic vocational schools, specialised, vocational and general upper secondary schools), which explains the sudden fall in the number of students in first grades.

**Graph 2.3. Number of grade I students in the years 1997 - 2012.**



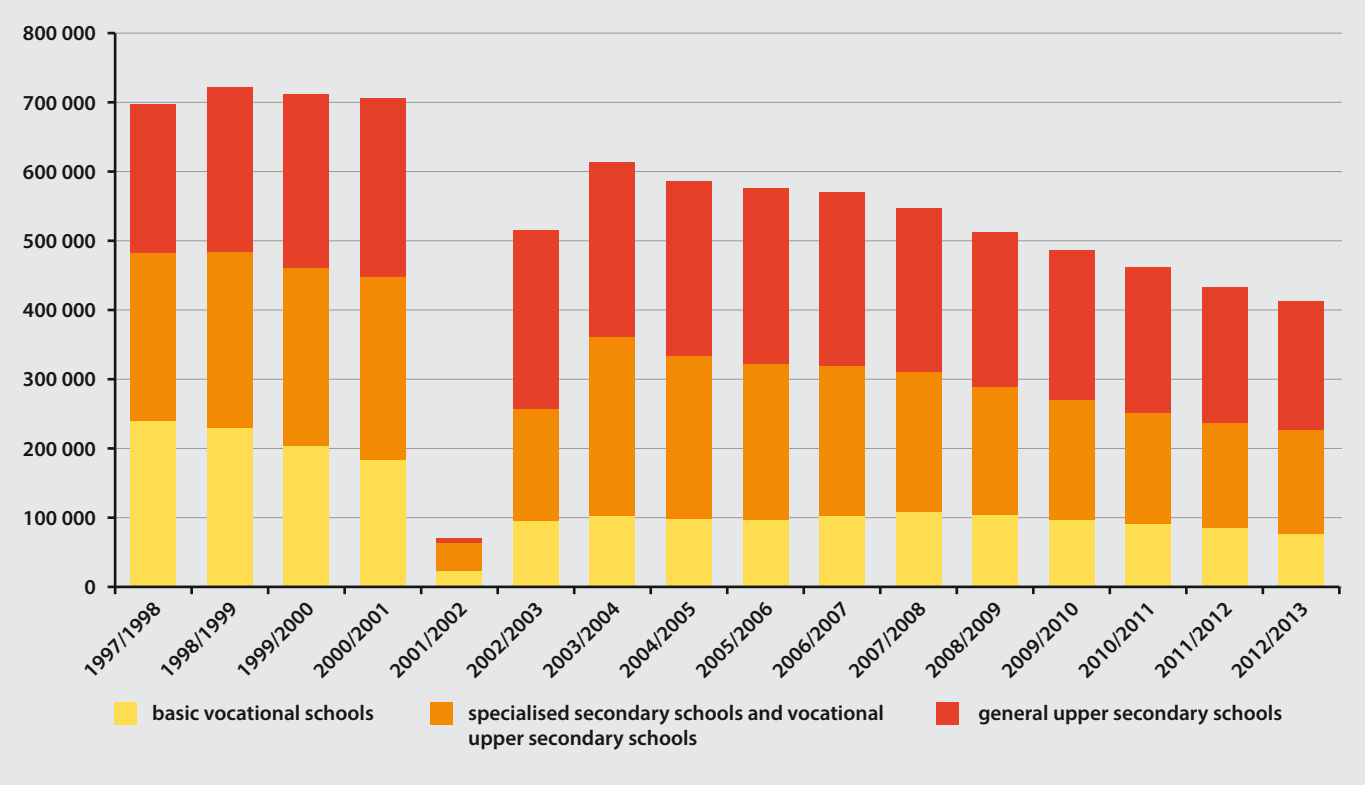

*Source: IBE calculations from Education in 1989/1990 (2012/2013) school year (GUS). Data include: schools for children and young people as well as special schools. Schools for adults are excluded.*

However, comparing the situation in 2012 to that in 2006, when reforms had already been fully implemented, the falling number of students starting schools can still be seen, by 23% in lower secondary schools and 27% in upper secondary schools. Interestingly the reduction in the case of upper secondary schools for adults is much smaller: 0.6% more students entered these schools, mainly the number of students at technical and basic vocational schools for adults decreased, while those studying at upper secondary schools for adults increased by over 60%. At the same time, as many as 32% of the adults attending upper secondary school for adults were aged below 19.

There is also a visible change in the profile of upper secondary schools for young people (Graph 2.4). The number of students in basic vocational schools reduced – in 2012 only 18% chose this type of school at this level, while in the year 2000 they accounted for 26%. The change in numbers of students choosing secondary vocational schools (vocational and specialied upper secondary schools) was proportional to the demographic change, i.e., the number of students fell but as a proportion of the population of grade I students in upper secondary schools remained unchanged (37% in 2000/2001 and 36% in 2012/2013[7]). In the same period grade I students at general upper secondary schools as a proportion of grade I students in upper secondary schools rose from 37% in 2000/2001 to 45% in 2012/2013.

[7] Pursuant to the act of 19 August 2011 amending the act on the educational system, as of 1 September 2012 enrolment to specialised secondary schools was stopped. Therefore, the 2012 data relate only to vocational upper secondary schools. At the same time, up to 2003, the GUS yearbook of education includes only the total number of first grade students of vocational and specialised secondary schools, which is reflected in the categories on the graph.

**Graph 2.4. Profile of grade I upper secondary school students by type of institution.**




*Source: Education in 1989/1990 (2012/2013) school year (GUS). Data include: schools for children and young people as well as special schools. Schools for adults are excluded.*

This reduction in numbers requires adjustment in terms of number of teachers[8], buildings and school infrastructure in order to keep it rationally economic. And, of course, a fall in numbers of classes in schools can be seen, above all in lower secondary schools at around 17% and upper secondary schools about 12%, primary schools 7% in comparison with the 2006 level. What may be interesting is that the tendency described in upper secondary schools appears mainly in general upper secondary schools, while at the same time there was an 8% increase noted in classes at vocational schools.

There was analogical change in the mean number of students per class and per school (table 2.1). Teachers at primary schools now generally teach classes of 20 students, in lower secondary schools there is a mean of 22 students per class and only slightly more in upper secondary schools, in particular general and technical. The effect of reduction in size of classes on educational achievement of students is, however, according to empirical findings, ambivalent and perhaps depends on many additional factors (Hanushek, 2002).

**Table 2.1. Number of students per school and class years 2006, 2010 – 2012.**

| year | pre-schools | primary schools | lower secondary schools | basic vocational schools | vocational secondary schools | general upper secondary schools | post-secondary schools |
|---|---|---|---|---|---|---|---|
| **number of students per school** | | | | | | | |

[8] Detailed analysis of changes in number of teachers and students per teacher can be found in a separate section of this chapter (Teachers in numbers).

| year | pre-schools | primary schools | lower secondary schools | basic vocational schools | vocational secondary schools | general upper secondary schools | post-secondary schools |
|---|---|---|---|---|---|---|---|
| 2006 | 50 | 171 | 216 | 130 | 237 | 298 | 75 |
| 2010 | 55 | 157 | 173 | 128 | 259 | 268 | 86 |
| 2011 | 58 | 159 | 165 | 120 | 257 | 258 | 87 |
| 2012 | 59 | 159 | 158 | 112 | 259 | 246 | 90 |
| **number of students per school unit** | | | | | | | |
| 2006 | 21 | 19 | 24 | 24 | 27 | 29 | 23 |
| 2010 | 21 | 18 | 22 | 22 | 24 | 28 | 26 |
| 2011 | 21 | 18 | 22 | 22 | 24 | 27 | 21 |
| 2012 | 21 | 18 | 22 | 21 | 24 | 27 | 20 |

*Source: IBE calculations from the Local Data Bank and Education in 1989/1990 (2012/2013) school year (GUS). Data include schools for children and young people as well as special schools. Basic vocational, general and vocational upper secondary schools for adults are excluded. Further, pre-schools include: pre-schools, pre-school classes in primary schools and other pre-school settings, including pre-school units and centres.*

At the same time these changes can be differentiated according to size of town. The mean number of students in primary school classes reduced from 23 to 22 students between 2006 and 2012 but in village schools from 16 to 15. In lower secondary schools there was no change in towns and urban areas. The mean number of students in a class remained 25. Classes in rural lower secondary schools reduced from 23 to 21 students. Slightly greater differentiation in terms of average number of students in schools and classes at primary schools becomes evident according to classification of the type of area (see table 2.2).

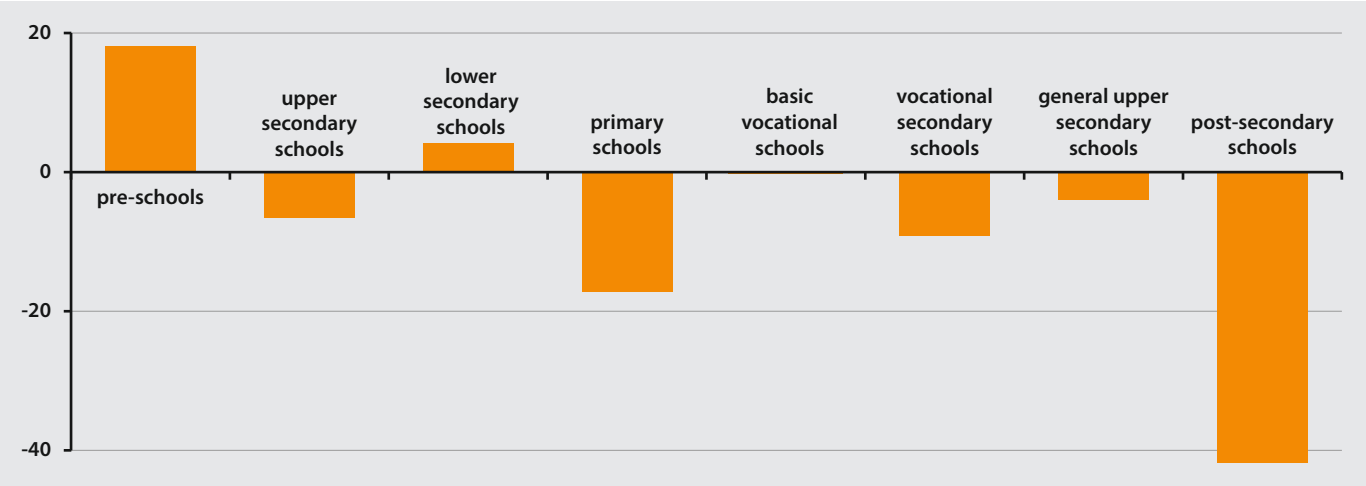
**Table 2.2. Average number of students at primary schools – 2007/2008 and 2012/2013.**

| type of local authority | 2007 | 2012 | 2007 | 2012 |
|---|---|---|---|---|
| | number of students per school | number of students per school | number of students in school per class | number of students in school per class |
| cities with powiat rights | 338,9 | 317,6 | 22 | 22 |
| gminas (communes) within agglomerations | 371,8 | 331,4 | 23 | 22 |
| gminas (communes) outside agglomerations | 198,0 | 202,8 | 20 | 20 |
| industrial gminas (communes) | 162,1 | 151,9 | 19 | 18 |
| post-state farm gminas (communes) | 144,5 | 133,9 | 18 | 17 |
| mixed rural gminas (communes) | 141,5 | 131,4 | 18 | 17 |
| typically rural gminas (communes) | 100,2 | 95,1 | 16 | 15 |
| total | 173,6 | 167,6 | 19 | 18 |

*Source: Herczyński and Sobotka, 2013.*

Diminishing classes and schools become relatively more expensive, particularly with reference to standing costs which, irrespective of the number of students, must still be borne and lead to higher unit costs for a smaller number of children. For this reason, in spite of the important social costs, in recent years this has led to consolidation, closure or transfer of parts of schools. As shown in Graph 2.5, there was a reduction in numbers of primary and upper secondary schools but an increase in pre-schools and lower secondary schools. As Herczyński asserts, it is a result of rationalisation of the net of lower secondary schools and the fact that in spite of the fall in pupil numbers, schools are quite big and might be 'decongested'. At the same time a decisive proportion of newly opened schools are in the private sector (Herczyński and Sobotka, 2013).

**Graph 2.5. Change in numbers of school 2006 – 2012 (%).**




*Source: IBE calculations from the Local Data Bank and Education in 1989/1990 (2012/2013) school year (GUS). Data covers schools for children and young people, excluding schools for adults. Data include: schools for children and young people as well as special schools. Schools for adults are excluded. Upper secondary schools include basic vocational schools, vocational and general upper secondary schools.*

The number of upper secondary schools over the analysis period fell. Interestingly the number of secondary schools for adults grew by over a half, which in most cases were opened by private bodies (73% in 2012). Such significant private interest in offering schools for adults hinges on demand – as mentioned earlier there was an increase in students at these schools during the period of interest (GUS, local data base).

Changes in the number of schools of different types occurred variously in the public and non-public sectors. At all levels of education the increased significance of non-public establishments can be observed which, in effect, dominated further education (over 63% of schools and almost half of those attending in 2012 were at non-public establishments). Basically, the higher the level of education the greater the proportion of students at p non-public schools and a greater number of these schools. With the exception of further education, children and young people in Poland, however, predominantly attend state schools and only 3-5% (depending on level and type) are educated privately. Further, the proportion of non-public schools at all levels of education is greater than the proportion of students at non-public schools, which suggests that they are decidedly smaller. The average non-public basic school in 2012 had 70 students and a state school had 165; at lower secondary schools there were 56 and 168, respectively, and at upper secondary 74 and 179. Over the last few years, 344 primary and 157 lower secondary schools were created in the private sector. As Herczyński and Sobotka (2013) indicate, primary schools often only change the managing authority whilst entirely new institutions are not created. So, the large number of schools, as shown by the statistics, is the result of the transfer of local schools to associations. In 2012, local authorities transferred 244 primary schools to associations and 17 to commercial organisations. In the case of lower secondary schools the situation is quite different

– they appear mainly in towns and are created completely from scratch. As the authors emphasise, those transferred by authorities to other bodies are a rare occurrence. In 2012, only 7 lower secondary schools were transferred to associations and only one to a body which was other than an association.

**Table 2.3. Proportion of students and non-public schools out of all students and schools by level of education in given years.**

| year | primary schools | lower secondary schools | basic vocational schools | general upper secondary schools | vocational upper secondary schools | specialised secondary schools | post-secondary schools |
|---|---|---|---|---|---|---|---|
| **proportion of students in non-public schools** | | | | | | | |
| 2006 | 1,5% | 2,1% | b.d. | b.d. | b.d. | b.d. | 20,9% |
| 2010 | 2,2% | 3,0% | 4,0% | 3,7% | 2,0% | 3,9% | 38,7% |
| 2011 | 2,5% | 3,2% | 4,5% | 3,8% | 2,0% | 4,2% | 45,2% |
| 2012 | 2,9% | 3,4% | 5,1% | 4,0% | 2,0% | 4,9% | 49,1% |
| **proportion of non-public schools** | | | | | | | |
| 2006 | 3,8% | 7,8% | b.d. | b.d. | b.d. | b.d. | 29,9% |
| 2010 | 4,7% | 8,6% | 6,1% | 16,9% | 6,1% | 5,7% | 53,8% |
| 2011 | 5,3% | 9,0% | 6,8% | 17,0% | 6,3% | 6,1% | 60,8% |
| 2012 | 6,6% | 9,6% | 7,5% | 17,4% | 7,3% | 6,6% | 63,7% |

*Source: IBE calculations from Education in 1989/1990 (2012/2013) school year (GUS).*

Changes definitely also occurred in the organisation of schools. As shown in table 2.4, above all the number of lower secondary and primary schools operating in the framework of a schools complex increased.

**Table 2.4. Schools operating in complexes as a proportion of all schools by level and type.**

| year | primary school | lower secondary school | general upper secondary school | vocational secondary schools | basic vocational school |
|---|---|---|---|---|---|
| 2007 | 32% | 53% | 63% | 96% | 95% |
| 2008 | 33% | 55% | 63% | 96% | 94% |
| 2009 | 34% | 56% | 62% | 95% | 94% |
| 2010 | 35% | 57% | 62% | 95% | 94% |
| 2011 | 36% | 58% | 62% | 95% | 93% |
| 2012 | 38% | 60% | 62% | 94% | 93% |

*SSource: IBE calculations from the Educational Information System 2007/2008 – 2012/2013. Data include schools for children and young people, excluding supplementary upper secondary schools.*

The most frequent model for school complexes with reference to primary schools is their joint operation with lower secondary schools and – in second place – with pre-schools. Lower secondary schools, if they are part of a complex, are most often with a primary school, or basic and pre-school, while only 468 were combined with upper secondary schools in 2012 (see Table 2.5). As Herczyński and Sobotka (2013) underline, over 61% of organisational changes[9] for lower secondary schools are the result of their consolidation with primary schools, which may indicate that in order to improve their economic efficiency and reduce costs they are operated by the same administrations. Of the upper secondary schools, vocational schools operate almost entirely as part of a complex: 94% of technical and 93% of basic vocational schools, while general upper secondary schools are much less frequently part of such a complex, in 2007 – 2012 at a level of 63-62%.

**Table 2.5. Number of schools and students by type of organisation.**

| **primary schools** | | | | |
|---|---|---|---|---|
| **type of school organisation** | **2007/2008** | | **2012/2013** | |
| | **schools** | **students** | **schools** | **students** |
| branch | 611 | 13 487 | 428 | 10 870 |
| independent unit of primary school without pre-school section | 2 653 | 728 402 | 1 794 | 431 095 |
| independent primary school with pre-school sections | 6 980 | 1 002 069 | 6 527 | 995 191 |
| primary school as part of pre-school plus primary school complex | 630 | 84 350 | 814 | 115 629 |
| primary school as part of primary plus lower secondary school complex | 2 002 | 395 183 | 2 260 | 417 015 |
| primary school as part of pre-school plus primary plus lower secondary school complex | 418 | 72 791 | 644 | 104 479 |
| primary school as part of other school complex | 171 | 42 680 | 223 | 52 302 |
| total | 13 474 | 2 340 539 | 12 696 | 2 127 891 |
| **lower secondary schools** | | | | |
| **type of school organisation** | **2007/2008** | | **2012/2013** | |
| | **schools** | **students** | **schools** | **students** |
| independent lower secondary school | 3 295 | 920 806 | 2 909 | 644 480 |
| lower secondary school as part of primary plus lower secondary school complex | 1 998 | 311 830 | 2 257 | 285 493 |
| lower secondary school as part of pre-school plus primary plus lower secondary school complex | 418 | 58 268 | 644 | 73 964 |
| lower secondary school as part of lower plus upper secondary school complex | 419 | 100 380 | 468 | 96 838 |

[9] The analysed changes in school organisation include the following forms: lower secondary school transformed into part of primary plus lower secondary school complex, into part of pre-school, primary and lower secondary school complex, into part of lower and upper secondary school complex of a part of some other school complex, as well as transformed from a part of school complex into an independent lower secondary school.

| lower secondary schools | | | | |
|---|---|---|---|---|
| **type of school organisation** | **2007/2008** | | **2012/2013** | |
| | **schools** | **students** | **schools** | **students** |
| primary school as part of other school complex | 144 | 25 694 | 190 | 29 569 |
| total | 6 274 | 1 416 978 | 6 468 | 1 130 344 |

*Source: Herczyński and Sobotka, 2013.*

## 2.2. Educational finance from public sources

State budget allocation for education of children and young people plus adults can be understood according to the following categories:

1) In relation to education from pre-school to upper secondary level
   a. Part of the general education subsidy to local government,
   b. Subsidy for the operation of schools and care including educational supervisory care, to local governments and also directly to schools; funding is sourced from the state budget (ministries) and from European funding[10];
2) With respect to higher education subsidy is for teaching[11]
   c. Subsidy to finance requirements for education of full-time students,
   d. Subsidy for statutory operations (for institutions operated by ministries other than the Ministry of Science and Higher Education).

Besides funding from the state budget, public spending for successive levels of education is provided by regional government and can be identified in their budgets.

'Responsibilities in the area of education and pastoral care, including social support' (article 3, act 13 on the education system: Education Act EA) represent the majority of the responsibilities of local government at all levels (local, area and regional councils). Division of responsibilities for education and pastoral care between the various levels of regional government is written into the basic logic of the principles of decentralisation, specifically, division of the benefits area for economic good or public services (Oates, 1972).

Gminas (communes) (2413 units), being the smallest and at the same time the most important[12] level of Polish administration are responsible for implementing educational responsibilities 'in pre-schools and other forms of pre-school care (...), and also primary and lower secondary schools with the exception of special primary and lower secondary schools, art, correctional and prison schools, and care centres for the young' (article 5a, act 2, para. 1 EA). Powiat councils (314 units), the level of administration above gmina are responsible for education 'in special primary, lower secondary and upper secondary schools, including integrated classes, sport and Olympic schools and institutions for pastoral care, continuous education, art: educational psychology: approved schools (...), institutions offering care and supervision to students in education away from home, excepting institutions of regional or super-regional significance' (article 5a, act2, para. 2 EA).

[10] State administration manages over 100 establishments, including especially vocation schools under the authority of the Ministry Of Agriculture and Rural Development and the Ministry of the Environment. Since these schools are only a small part of total spending on education, they are not analysed separately.

[11] Higher education institutions also receive research and development funding, but this analysis takes into account only teaching grants.

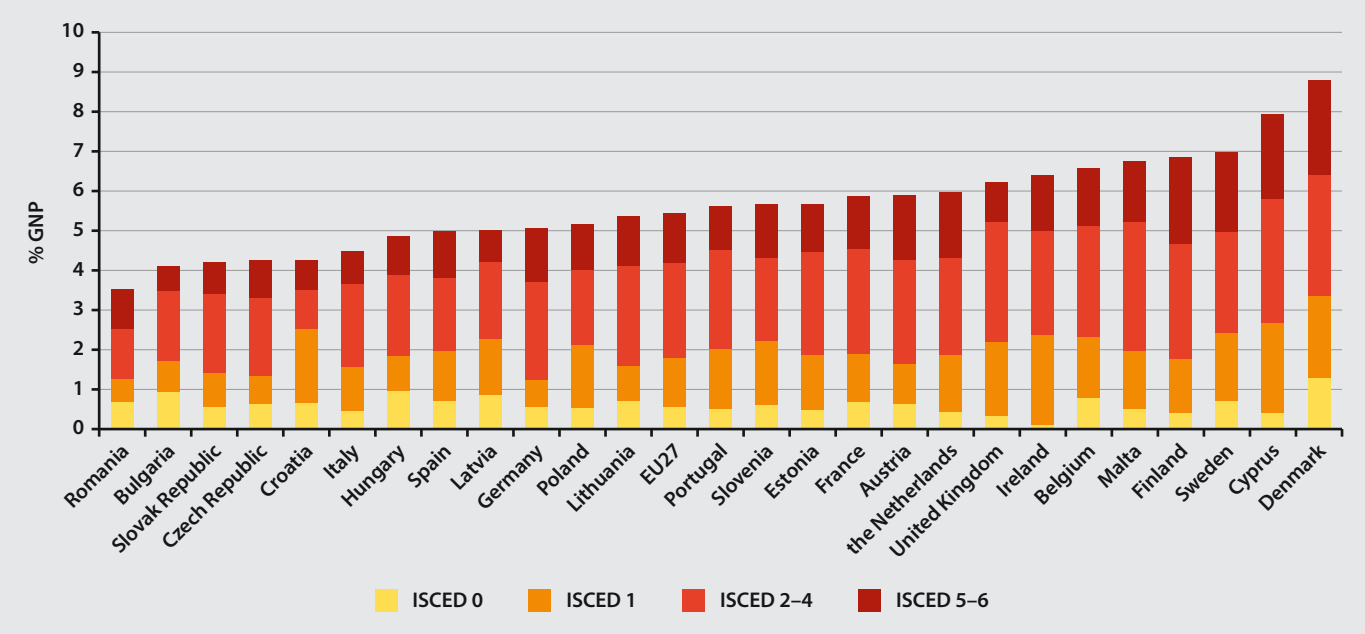
[12] Which is reflected in their wide rage of competence in local issues and relative financial independence. It is also confirmed by the most important legal regulations. For example, gminas (communes) are the only named level of local authorities.

Provinces[13] (16) are responsible for 'schools, institutions of regional significance, education centres, teacher training establishments and colleges for the social services and educational libraries' (article 5a, act 2, para. 3 EA).

Besides the above types of regional government, cities with powiat rights should be mentioned – these include the 66 largest Polish towns which owing to their nature (also metropolitan) are responsible for responsibilities of gminas and powiats (ZEE, 2011).

In accordance with the law on higher education (article 94, act 6) institutions can obtain funding from local government or related sources. The fact that there is no direct mention made of higher education in the acts concerning the responsibilities of local aauthorities in gminas and powiats, results in that such finance is regarded as imprecisely defined in law (KRRIO, 2012; Czołpińska, 2009). Only in the regulation of provinces (article 14, act 1.1) is higher education mentioned as a responsibility of the region in the scope of financing this type of education. The responsibility at province level is described by acts of law, in particular in relation to state education including higher education. Nevertheless, authorities at all levels channel subsidies into higher education towards teaching and research and, of course, financial help to students.

**Graph 2.6. Public spending on education by level (ISCED 97) as a percentage of GNP (EU countries – 2010).**




*Source: Source: IBE calculations from Eurostat [educ_figdp].*

Public spending on education in Poland is close to the European Union average. According to Eurostat it was 5.17% of GNP in 2010, while for 27 EU countries it was 5.44%. At the same time it was quite significantly different from its profile in division between different levels of education, particularly education from primary school to adult education (ISCED 1-4). Polish spending on primary schools was decidedly above the EU average (ISCED 1). The next stage (ISCED 2-4) is characterised by decidedly low spending. That on pre-school (ISCED 0) and HE (ISCED 5-6) is a little below the EU average.

For education at pre-schools to upper secondary the largest part of the state budget is on the general education subsidy. The education subsidy is defined yearly in the budget. Until 2004 the education budget was not less than 12.8%[14]. After 2004 it took a weaker position according to which the

[13] Every province has both central and local administration with separate objectives. In this chapter, however, the term „province" refers to local authorities at the province level.

[14] In fact, this figure was higher.

amount of subsidy could not be less than the year before[15]. A reserve is subtracted from the subsidy, which up till 2012 amounted to 0.6% of the general education subsidy but then reduced to 0.25% and from 2013 to 0.4%. The reserve is divided between local authorities to finance educational goals according to need and exceptional circumstances (e.g., natural disasters and errors in the subsidy calculations). The division of funds originating from the educational subsidy is calculated using an algorithm described by legislation. In this way the legislation demands that this part funds regional educational responsibilities with the exception of costs involved with transport of students and running pre-schools and other forms of pre-school care (article 28, act 5, law concerning regional administrational finance 2004). Additionally, the law describes the method for the division of the educational subsidy between local authorities in relation to types of schools and establishments run by these units, professional promotion grades of teachers and the number of students (article 28, act 6). In respect of these conditions, in spite of the drop in student numbers, educational subsidy has incrementally risen yearly. By 2012 it was greater in real terms by 19.2% compared with 6 years earlier.

**Table 2.6. State educational budget to authorities in the form of subsidy – years 2006, 2010 – 2012 (millions PLN, 2012, constant prices for 2012).**

| | 2006 | 2010 | 2011 | 2012 |
|---|---|---|---|---|
| educational subsidy | 32852,70 | 37866,08 | 38290,96 | 39161,10 |
| subsidies for running expenses | 1246,77 | 1154,15 | 1298,45 | 1253,78 |
| subsidies for investments | 232,91 | 754,92 | 771,46 | 666,24 |
| total | 34332,38 | 39775,15 | 40360,87 | 41081,12 |

*Source: IBE calculations based on budgetary data from RB27S report.*

State subsidy for authority tasks is not a stable source of income and which varies from year to year. In addition, in recent years a significant portion has been towards projects, part financed from outside sources[16]. This applies especially to investment – in 2012 72% of the subsidy from the state budget for investment by the education authorities was tied to these projects. Subsidy towards basic operations was 51% in 2012.

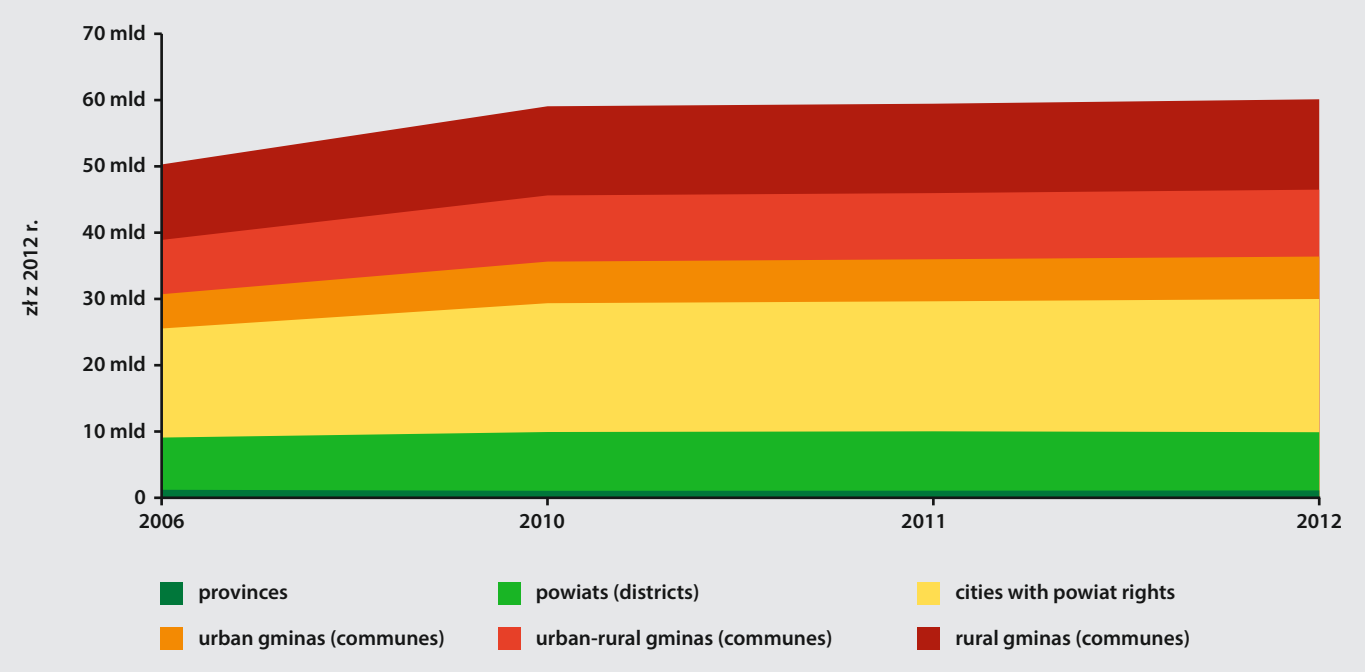
The majority of educational spending is from local councils (50%) and cities with powiat rights (33.4% - 2012). Local government spending on education and care[17], in the period 2006-2012, successively increased for all authorities other than province. Given that in spite of the observed falling pupil numbers this means that spending per student has increased over recent years.

[15] Which is contained in the act on the income of local governments..

[16] These are subsidies directly from EU budget or Polish funds - state budget, but funding programmes from non-refundable EU funds or other countries or institutions.

[17] Sections 801 and 854 of budget classification.

**Graph 2.7. Local authorities spending on education (sections 801 and 854 of budget classification) – years 2006 – 2010/2012 (constant prices for 2012).**




*Source: IBE calculations based on budgetary data from RB28S local authorities' reports.*

The budget classification allows calculation of local government spending per student at the various levels of education with a certain amount of approximation. Inexactitude is inherent to these calculations since they only include direct local government spending to schools of any given type (i.e., written into their own part of the budget classification). Additionally, it is not possible to identify vocational schools of different types – and so spending in one category includes basic vocational schools, technical and supplementary technical schools. The next problem is that of the impossibility of separating schools for young people and adults. They are reported according to the same classifications. In particular this influences data about vocational schools (where, for example, adult education is included) and general upper secondary schools (where spending also covers similar schools for adults)[18]. The most straightforward local government spending on any particular level of education is the highest public expense per student at primary schools. This is related to the fact that at this stage there are the most teachers per student[19], also classes are, in general, the smallest. Beyond this, it might also be related to teachers' pay scales. This means additional pay for teachers in village and small town schools. Almost 70% of primary schools are in rural areas where only 40% of primary school students attend. At the same time only 8% of general upper secondary schools are in rural areas (3% of students), basic vocational schools about 12% (6% of students) and technical upper secondary school 14% (8% of students). As shown in the part about teachers' pay, median remuneration for teachers from schools administered by gminas is higher than in schools under the area council and even those employed by schools in urban cities with powiat rights.

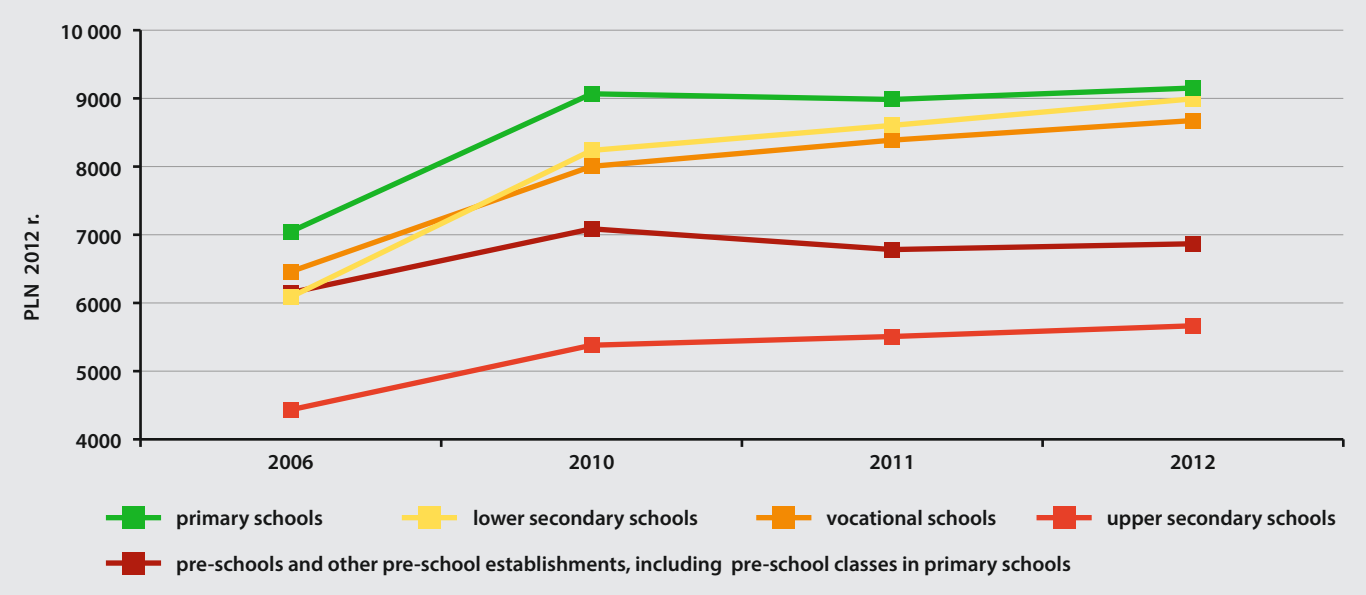
After primary schools, lower secondary schools are in second place regarding costs per student. Still in 2006, cost per student was lower in lower secondary schools than in vocational schools. The change observed results from the fall in numbers of lower secondary schools discussed earlier. Besides this

[18] In these calculations spending on special schools was included. It should be noted that in these schools, cost per student is several times higher than in other types of schools, but they constitute a small part of general expenditure of these schools (approximately 2,5%) and their students constitute less than 2% of all students, therefore, including them into the final result did not distort it.

[19] See the section *Teachers in numbers*.

similarly to primary schools, lower secondary schools are more frequently located in rural areas – 52% of the schools attended by 36% of students.

**Graph 2.8. Public cost per student* at various levels of education (2006, 2010-2012 – constant prices for 2012).**




** Since the budgetary classification is quite wide, it includes schools for children, young people and adults, including special schools, students of public and non-public schools. Spending also covers local government subsidies for non-public schools.*

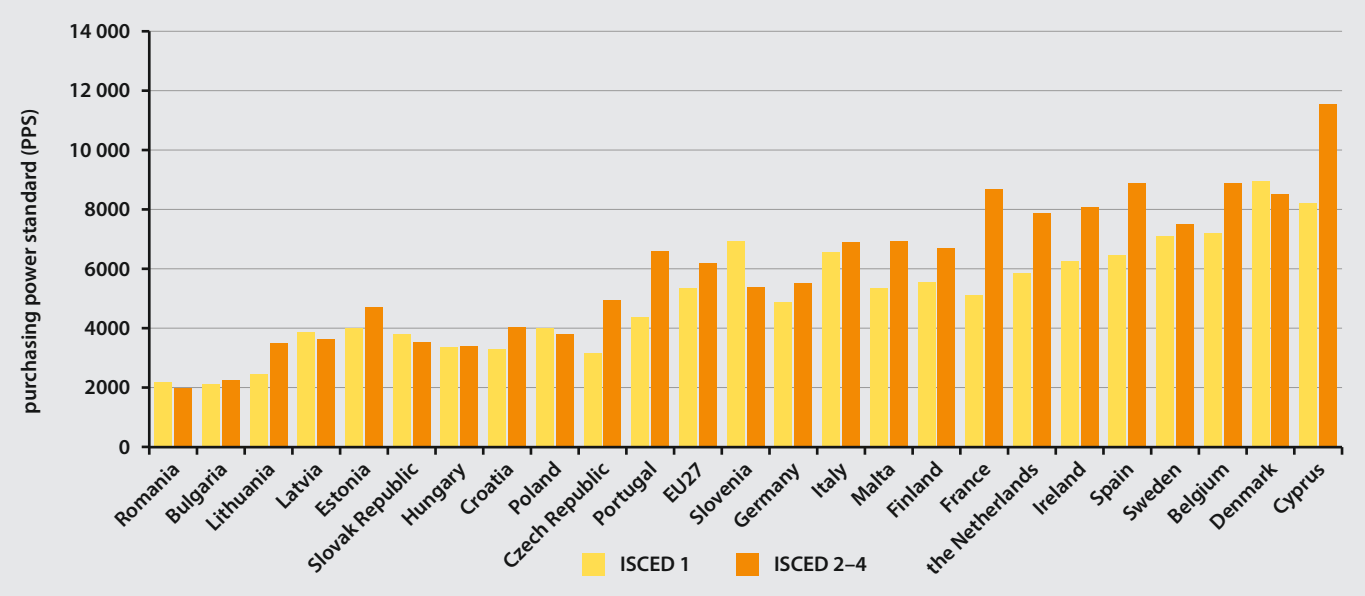
*Source: IBE calculations based on budgetary data from RB28S reports and statistical yearbooks of education.*

Spending on pre-school per child also increased from 2006 to 2012. However, the increase is the smallest of all levels of education. Moreover, in the last two years spending was lower than in 2010. This is certainly related to the steady development of the pre-school network and the increasing number of children in their care.

The lowest spending is on upper secondary schools. This is not surprising considering that they offer general education (less expensive than vocational), and at the same time the majority are located in towns (in contrast to primary and lower secondary). However, the magnitude of the difference is surprising. Spending per pupil is only 60% of that incurred in primary schools and 65% of that in vocational schools. This is probably related to the significant reduction in estimated spending on schools for adults including adult education. In the case of upper secondary schools, as shown, a particularly large proportion of students and institutions are private schools for adults. Schools which do not fulfil their expected responsibilities obtain subsidy per pupil attending at least 50% of lessons in any month at a level no lower than 50% of that set in the local or area budget for running expenses in state schools, according to type, calculated per student. If these subsidies are taken away and only account for public spending on schools operated by the authorities and students of these schools, public spending on state upper secondary schools for young people per student was about 6,500 PLN in 2012 (ZEE 2013).

It is worth noting what was obvious in the international data presented at the beginning of this section. The primary school stage of education is particularly expensive (ISCED 1). At the same time in the majority of EU countries (21 of 27), expenses per student are lower than successive levels of education (ISCED 2-4). The following graph confirms this.

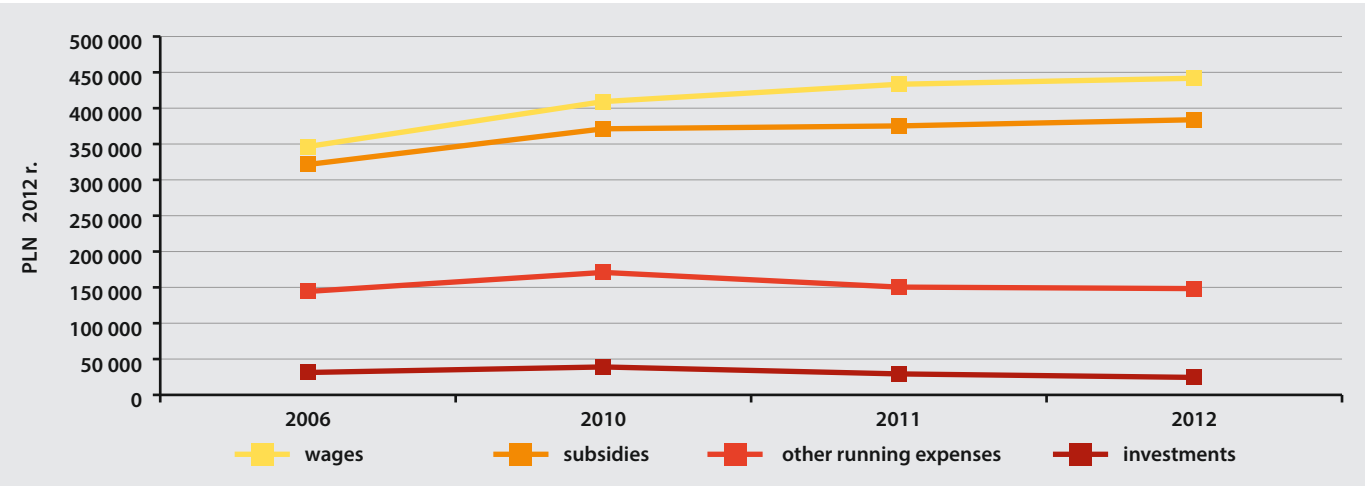
**Graph 2.9. Public spending on education institutions per student at levels ISCED 1-4 in EU countries by purchasing power standard (PPS) – 2009.**




*Source: Source: IBE calculations from Eurostat [educ_figdp].*

Analysis of public spending per student and costs of education in general, demonstrate steady real increase. Spending rose throughout the period analysed, 2006 – 2012. However, over the last two years one contribution to educational spending which rose, was on salaries. Salaries and wage costs graph as the most important education expense (75%) for authorities. Spending on salaries in real terms increased by 27.3% in real terms.

**Graph 2.10. Local authority (powiats and gminas) spending on wages, investment and other running expenses (sections 801 and 854 of budget classification) 2006, 2010-2012 (constant prices for 2012).**




*Source: IBE calculations based on budgetary data from RB28S local authorities' reports.*

Education as recalled, is the responsibility of the authorities. This does not mean, however, that these authorities have complete freedom to shape the task. This is reasonable considering the nature of education as economic good at above the local level. From the point of view of the politics of the leadership of local government, spending regulations affecting employment and teachers' salaries have the greatest significance. These are included overall, in the Teachers' Charter (Dz. U. 2014 – 191). This Teacher's Charter details the principles determining salaries, the relationship between average

wages[20] to the level of professional promotion grade and also the minimum basic pay (dictated annually in the revision of article 30 of the act). Average teaching pay is low for those entering the profession, in 2013, it was 74% of the average wage, however, for chartered teachers it is significantly more. In 2013 it was 136% of the average wage. As will be shown in the next section, in recent years many teachers have reached the highest level of professional promotion. In 2007, 32% of teachers but in 2013 there were already 50% at this level. What is more, teachers' salaries set centrally have been recently increased several times. In 2007 – 2013, for example, average salaries, guaranteed by the act, nominally increased by 75.6% for trainees and by 43.7% for chartered teachers (while average wages, in general, rose 35% over this period). The next major cost to local government associated with teachers' pay is the social fund which requires double the contributions demanded by labour law.

Limitations to local government politics in relation to teacher wages are also subject to article 30a of the act (an amendment from November 2008). If teachers in a given authority, at a particular level of professional promotion, do not receive average salary as dictated by the act then they have to be compensated by a one-off additional payment at the beginning of the next year. This must be paid irrespective of how other grades were paid. For example, in 2011 authorities had to pay 244mln PLN and this was necessary in almost 80% of authorities. The greatest problem reaching the average is for trainees, which results from the problems associated with timetabling lessons for young teachers which would guarantee them this amount.

Finally, demands of article 30a of the act created the situation that in 2011:

- in 1007 local government units – spending was above the minimum for the employment profile but it was still necessary to make the one-off paymentsy
- in 828 local government units – additional payment led to paying a greater amount than the minimum (RIO, 2012).

Considering the legal requirements above it should be understood that elasticity in the politics of teaching salaries is decidedly limited for local government units. This is how the authorities interpret it. A possible explanation for this by a representative of a small authority might be 'nobody asks me how much I want to pay teachers, the minster only gives tables and I have to pay' (ZEE 2012).

This lack of elasticity in the most important area of costs influences decisions on spending as regards other aspects. In recent years the remaining areas of authority spending on education fell in real terms particularly in relation to investment, where in the last two years, in particular, there was a fall (see Graph 2.10). In 2012, general authority investment in education was in real terms lower by 15% than in 2011 and 21% than in 2006. This affected gmina authorities in particular (a 35% drop compared to 2006). In powiat authorities it was only 15% in cities with powiat rights in 2012, at a comparable level with 2006. Outside employment costs for running expenses rose in real terms over the period of interest by 1.2%, however, for example, in powiat authorities in 2012 other running costs in education were, in real terms, lower, by almost 7% compared with 2006. The observed changes are related to the crisis in local finances and resulted from the fall in income to the authorities but also related to intense authority investment in the community economy, partly financed from EU sources. In the search for savings authorities limited spending in all areas which were the most flexible;

*Simply savings are mainly sought in material spending because there we can save, by providing fewer teaching aids and carry out less refurbishment, while teaching must continue and we have to employ teachers.* [ZEE 2012]

[20] The average salary of teachers at successive professional promotion grades must be reached at the level of the area of responsibility of a given local government unit and not each teacher employed in the school managed by this unit..

Spending associated with education and care is financed by authorities from earnings and the general grant but, above all, from part of the general education grant and also subsidy intended for education and care. As stated earlier, part of the education grant is not intended to finance all authority expenses related to education. Nevertheless, it is the most important source.

**Table 2.7. Proportion of the education grant and subsidy from the state budget in educational and care spending by local authorities (from section 801 and 854 of the budget) years 2006, 2010-2012.**

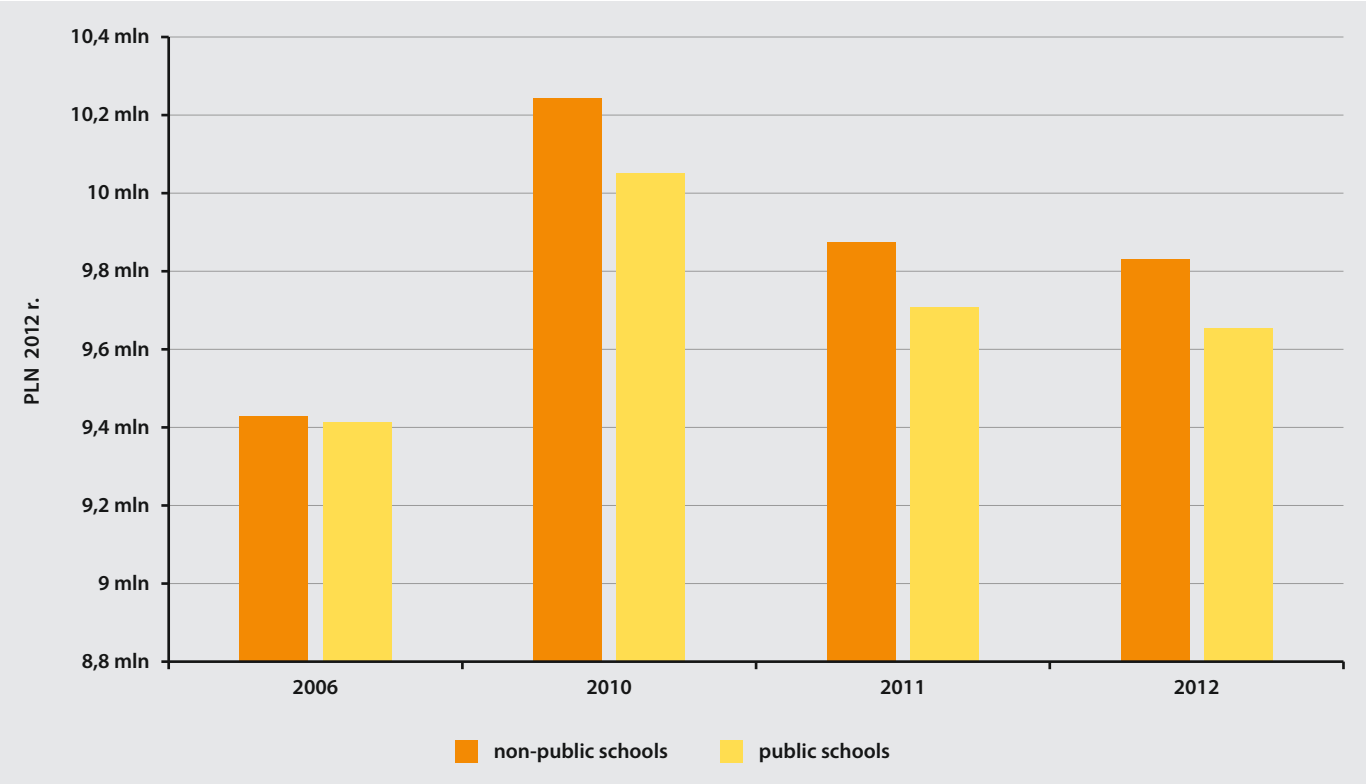
| Local government unit | 2006 | 2010 | 2011 | 2012 |
|---|---|---|---|---|
| provinces | 67,4% | 71,8% | 75,9% | 77,5% |
| land powiat | 93,3% | 93,1% | 93,8% | 94,4% |
| cities with powiat rights | 61,2% | 61,7% | 62,6% | 63,3% |
| urban gminas (communes) | 56,1% | 54,1% | 54,6% | 55,5% |
| rural gminas (communes) | 70,6% | 69,2% | 69,1% | 69,2% |
| urban-rural gminas (communes) | 62,9% | 60,8% | 61,0% | 61,6% |
| total | 68,3% | 67,3% | 67,9% | 68,3% |

*Source: IBE calculations based on budgetary data from RB28S and 27S local authorities' reports.*

Over successive years the grant and subsidies covered similar proportions of authority spending on education (68%), of which the lowest finance for these requirements is provided by powiat authorities and the most by town councils. Above all, this is the result of the fact that gminas and cities with powiat rights with area responsibility have particular financial responsibility for education, which by design is not calculated into the grant (pre-school care and school transport which account for about 15% of their education spending). Besides this, however, differentiation results from two factors: the possibility of financing different recipients and secondly allowances from the education grant. Primary and lower secondary schools (being the responsibilities of local authorities) in rural areas and small towns actually obtain more per student according to the rural weighting (weight P1 is 0.38), however, upper secondary schools run by powiat authorities receive an increased grant, for example, for vocational training with a weight, P8 equal to 0.19 and for special education depending on type and level of the handicap of students, in the range P2=1.4 to P5=9.5. Powiat authorities are, at the same time, the most poorly financed authority units which hardly obtain any income of their own and a significant proportion of their earnings is from specific subsidies. In comparison with powiat authorities, city councils and, in particular, cities with powiat rights have relatively greater freedom in profiling their own earnings.

As recalled at the beginning of this subsection, in the case of higher education, subsidy from the state budget, intended for teaching purposes is obtained by state and private institutions. It is provided to schools for the education of full time students. However, for this reason the majority of full time students are educated in state establishments (91.4%) and they receive a substantial part of these subsidies (97.8% in 2012). Subsidies from the state budget for teaching purposes were higher in 2012 than 2006. However, in the last two years a drop in these subsidies was visible. This has occurred in spite of the increase in full time student numbers. In 2012 the subsidy was lower by 0.4% than a year earlier whilst the fall only affected state schools (0.6%), subsidy for non-public institutions rose by 7.6%.

**Graph 2.11. Teaching subsidy in public and non-public higher education years 2006, 2010-2012 (constant prices for 2012).**




*Source: IBE calculations from higher education statistical yearbooks 2006, 2010-2012.*

HE spending on teaching besides subsidy from the state budget is subsidised by authorities from fees and other sources. State institutions offering higher education mostly finance teaching using state subsidy and private institutions with tuition fees. Both types of institution noted deficits in 2012 with regard to tuition. In state establishments this was the second time in a row and deeper than previous years. In private institutions this was first occurrence of such a deficit.

**Table 2.8. Proportion of various sources of income in tuition costs at public and non-public institutions of higher eduction 2006, 2010-2012.**

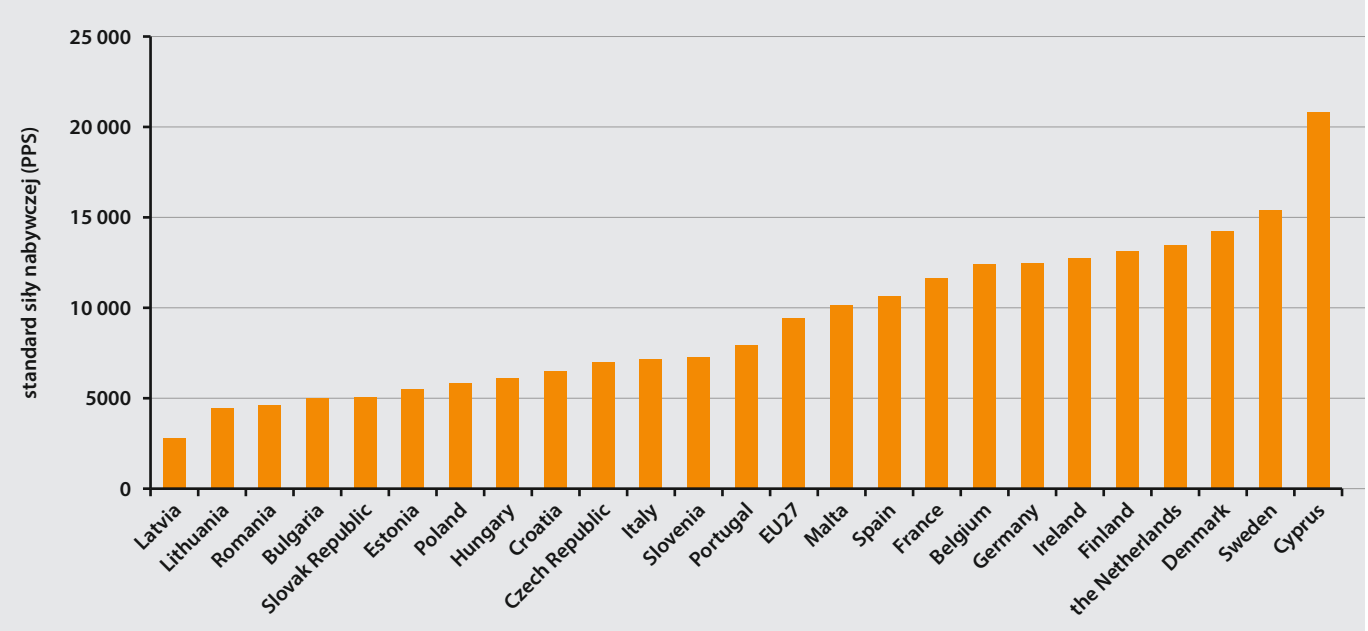
| public schools | | | | | |
|---|---|---|---|---|---|
| year | state funding | local government budgetary grants and other public funds | tuition fees | other | total coverage of tuition costs by income from teaching |
| public institutions of higher education | | | | | |
| 2006 | 70,9% | 0,2% | 19,3% | 6,9% | 97,2% |
| 2010 | 70,8% | 0,5% | 17,1% | 10,0% | 98,4% |
| 2011 | 68,8% | 0,3% | 16,2% | 11,1% | 96,3% |
| 2012 | 68,5% | 0,2% | 14,6% | 11,3% | 94,6% |
| non-public institutions of higher education | | | | | |
| 2006 | 0,6% | 0,4% | 100,3% | 4,2% | 105,6% |
| 2010 | 6,5% | 0,4% | 88,3% | 6,7% | 101,9% |

| public schools | | | | | |
|---|---|---|---|---|---|
| **year** | **state funding** | **local government budgetary grants and other public funds** | **tuition fees** | **other** | **total coverage of tuition costs by income from teaching** |
| 2011 | 6,0% | 0,1% | 85,4% | 8,8% | 100,3% |
| 2012 | 6,9% | 0,2% | 80,6% | 7,2% | 94,9% |

*Source: IBE calculations from higher education statistical yearbooks 2006, 2010-2012 (GUS).*

Polish public spending per student at state institutions (ISCED levels 5 and 6) is significantly below the European average. This is partly related, as shown above, to the significant proportion of Polish students at state establishments who pay for themselves.

**Graph 2.12. Spending on public institutions per student in higher education (ISCED 5 and 6) in EU countries according by purchasing power standard (PPS) 2009.**



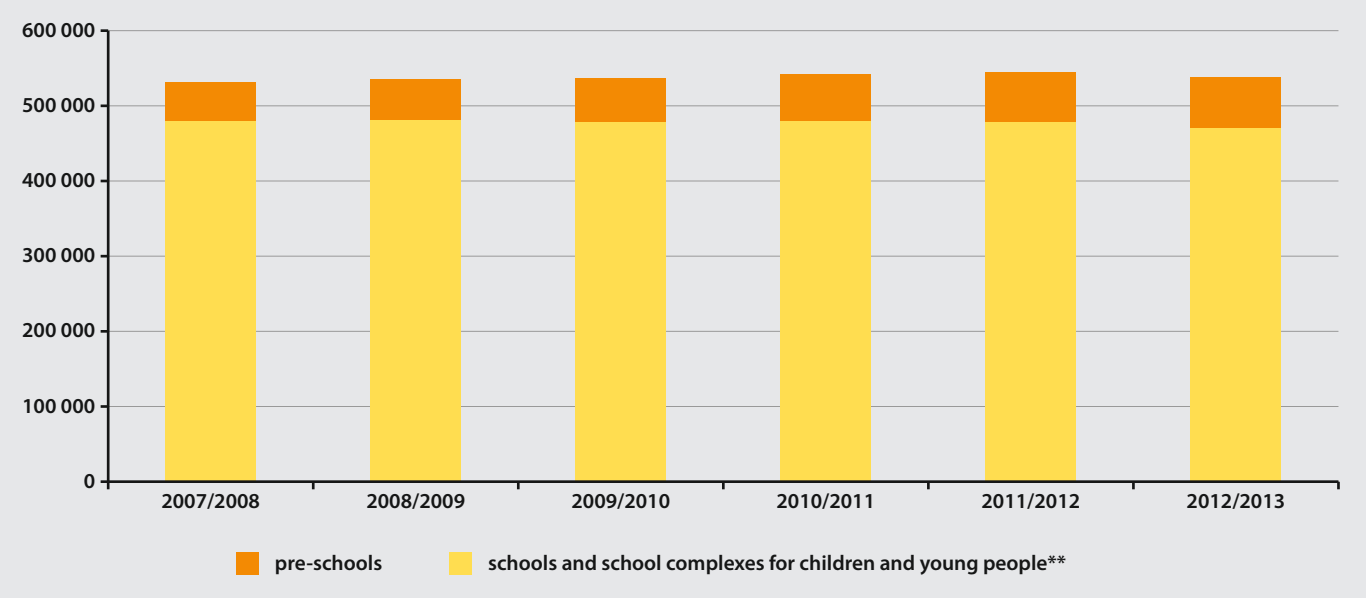

*Source: IBE calculations from Eurostat [educ_figdp].*

## 2.3. Teachers in numbers

In previous subsections, changes in the number of children and young people at various levels of education over the last few years are mirrored in the number of teachers[21]. Employment in pre-schools is growing (by 32% over 2007-2012) and is falling in schools and school complexes for children and young people (3%). Changes follow the same directions as student numbers but the dynamics are more attenuated.

[21] Data related to teachers are extracted from the Educational Information System. We only demonstrate the number of teachers who teach obligatory number of lessons (and, therefore, are sometimes called „blackboard teachers"). We do not cover teachers who are employed but do not teach, even if they have other duties. An employed teacher is understood as working full-time or part-time, regardless of the form of employment, so this category also includes teachers working based on contract of mandate or contract to produce a work.

**Graph 2.13. Number of people employed as teachers in pre-schools and schools for children and young people including special schools – school years 2007/2008 – 2012/2013*.**



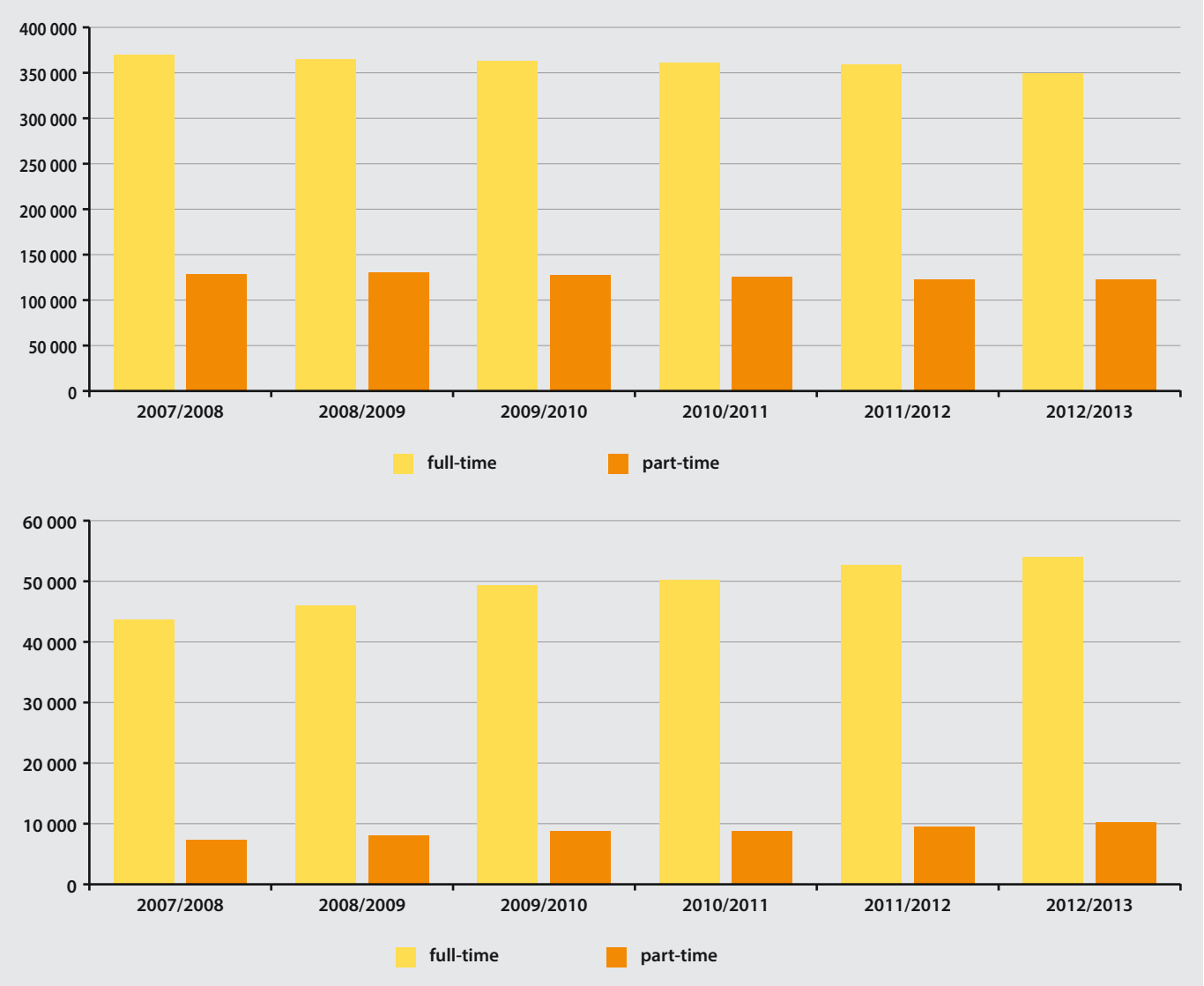

**Information includes all teachers including those who do not teach because of absence. This group is not reflected either in public statistics and in international statistics represents about 5% of teachers.*

***School complexes may include pre-schools*

*Source: IBE calculations based on data from the Educational Information System.*

Demographic changes can influence teachers' working time. The proportions of full and part time teachers practically did not change over the years. Part time teachers working in schools and school complexes for children and young people amounted to about 26%. In pre-school there were fewer, about 15%. Both groups, however, have varied in their dynamics over recent years. Full time teachers of children and young people have reduced fast (5.5%) compared with part time teachers (4%). There has been a more rapid rise in full time employment in pre-schools (38%) than for part time employment (about 26%).

**Graph 2.14. Number of people employed as teachers in schools complexes for children and young people (upper) and pre-schools (lower) – school years 2007/2008 – 2012/2013*.**

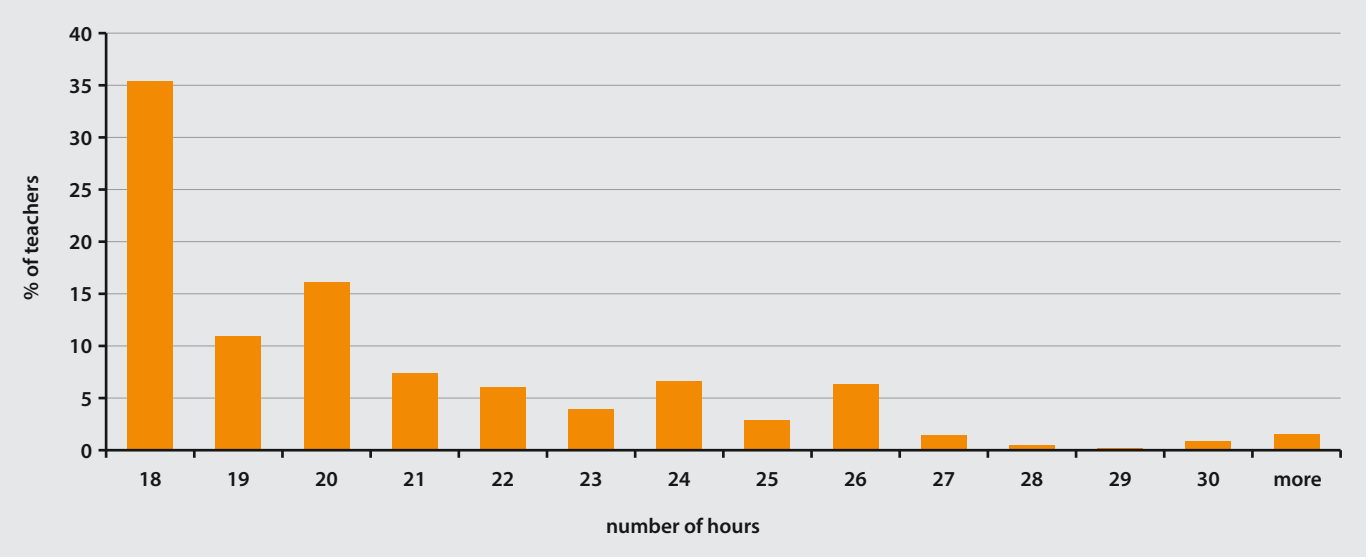



*Source: IBE calculations based on data from the Educational Information System.*

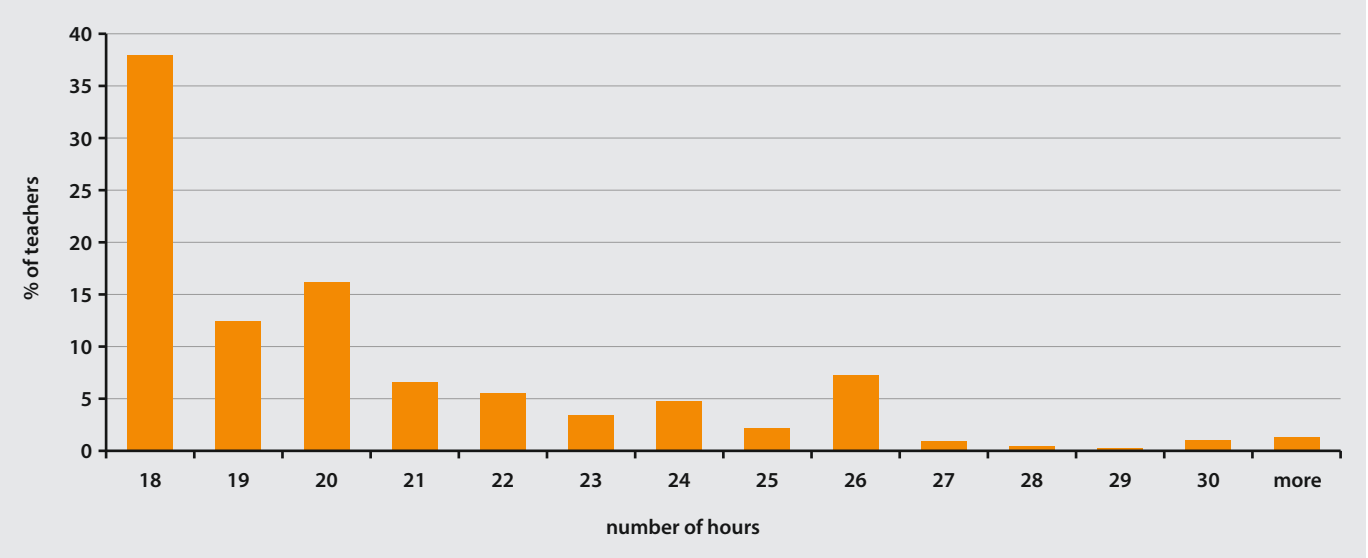
Changes in employment for teachers in schools or school complexes for children and young people are not only attributable to the laying-off of teachers. In part the fitting of the employment profile to demographic changes in student numbers occurs by reduction in work hours. This explains the faster drops in full-time teachers than part-timers (graph 2.14) and a reduction in the number of weekly hours of teaching for those fully employed (graph 2.15). The median weekly number of hours taught by full-time staff in school year 2007/2008 was 20 hours. By last year, this graph was already 19. Furthermore, the proportion of full-time teachers with only 18 hours of lessons per week increased from 35% to 38%.

**Graph 2.15. Proportion of teachers working full-time by weekly workload – including overtime in schools years 2007/2008 and 2012/2013 in schools for children and young people.**

**a) Weekly work hours with overtime – teachers in public schools and school complexes (without pre-schools) – 2007/2008**




**b) Weekly work hours with overtime – teachers in public schools and school complexes (without pre-schools) – 2012/2013**



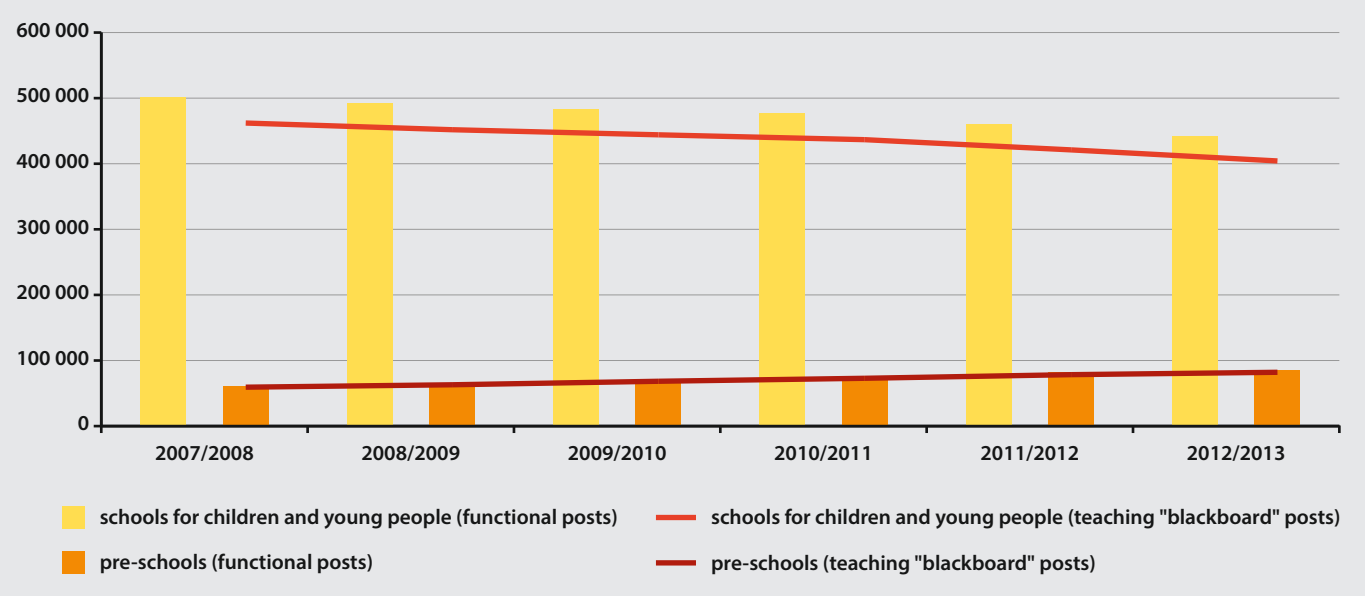

The majority of teachers (88%) are only employed by one school. The remaining 12% work at several schools. In school year 2007/2008, there were slightly more, at 16%. Over the last few years, the number of additional posts for teachers reduced. Teachers working at several schools mostly have a full-time job in one (55%). So, 45% of this group do not have a full-time post at any school. Teachers rarely choose non-public schools for extra work. Those teachers account for only 1.5%. The converse situation is significantly greater since over 30% of teachers working in private schools also work in state schools. The main reason for this is that private schools are much smaller than the state ones. Therefore, for most teachers, they are not an option for extra work.

As can be seen, the deepening demographic low affects teachers working time. In order to investigate this phenomenon it is necessary to observe changes in the number of teaching posts

over the last few years. Meaningful in this analysis is the way in which teaching posts are counted. In the case of full-time teachers in one or more posts and part-time teachers the number of working hours are counted. We total the number of working hours (not only "blackboard" hours) even beyond the teaching schedule (together with overtime) and divide them into posts following the principles of the Teachers, Charter which defines the number of hours corresponding to a teaching post of various types.[22] Then we call these measures functional posts. For comparison purposes, the number of teaching posts are shown in exclusive terms of classroom hours which might equally be overtime.

The fall in the number of people employed as teachers of children and young people was relatively small (3%) in comparison with fall in the number of functional posts (almost 12%). This is also a result of the reduction in hours of overtime for full-time teachers just as the reduction from full-time to part-time for teachers previously full-time. The dynamics of the change in numbers of functional posts and the number of posts only including classroom hours[23] is comparable for teachers employed in schools or those employed in pre-schools. The difference between the number of functional posts and those calculated according to classroom hours is, in the case of teachers employed in schools, fairly significant, accounting for 9% each year. This bears witness to the fact that teachers do not only work during timetabled teaching hours but also have other responsibilities (e.g., act as supervisors or conduct lessons stimulating students' interests or in the role of school director).

**Graph 2.16. Number of functional teaching posts in school years 2007/2008 – 2012/2013.**

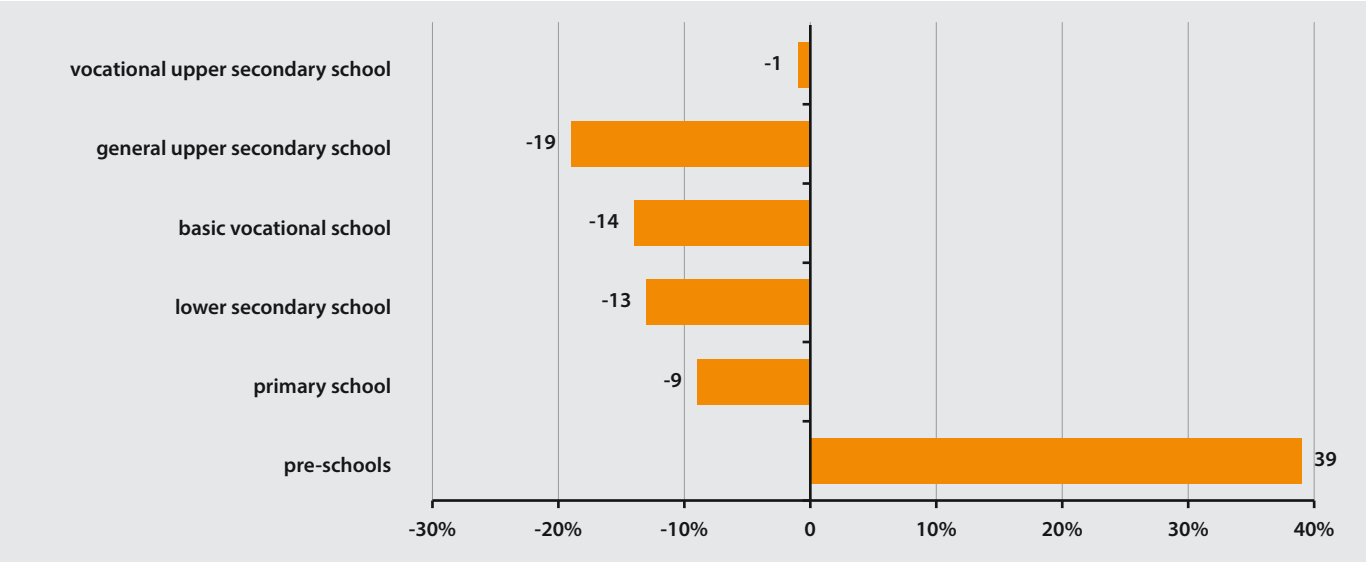



The change in the number of functional teaching posts varies between types of school. The greatest percentage fall in the number of teaching posts occurred in general upper secondary schools (19%) and the smallest was in technical schools (1%). At the same time, growth in the number of posts at pre-schools was close to 39% following the growing number of students.

[22] Data demonstrated in this report differ from data supplied by public statistics. Public statistics one full-time teacher employed at one post or more than one post is counted as one post, regardless of potentially significant number of working hours exceeding one post (graph 2.15). Moreover, public statistics covers only so called„blackboard" hours, i.e., teaching hours included in the core curriculum, omitting other working hours, such as working in school's day-care rooms or conducting extra-curricular classes..

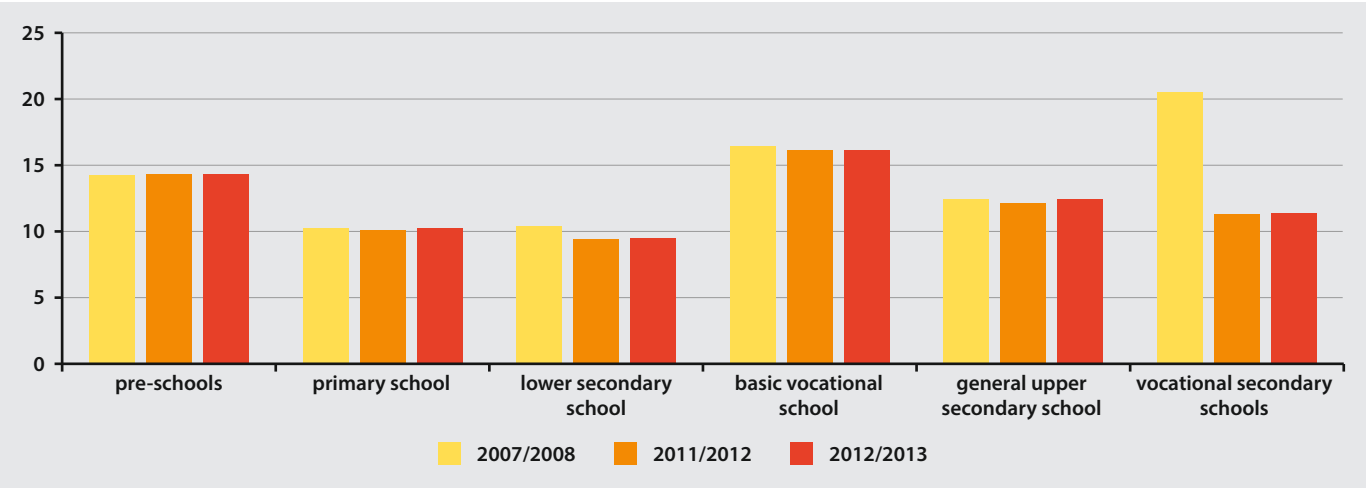
[23] These posts include overtime.

**Graph 2.17. Change in the number of functional teaching posts in school years 2007/2008 – 2012/2013.**




In terms of the magnitude of change in the numbers of teachers at pre-schools already mentioned, the number of students per post at these establishments rose a little between 2007 and 2013. In subsequent levels of education the number of students per post fell but this change was not drastic. The reduction in the number of posts follows the reducing number of students. It is possible to observe a different situation in technical schools – here one teaching post covers as many as 10 students fewer than in 2007 (graph 2.18). This is related to the fact that the fall in number of posts was the smallest for all types of school (graph 2.17).

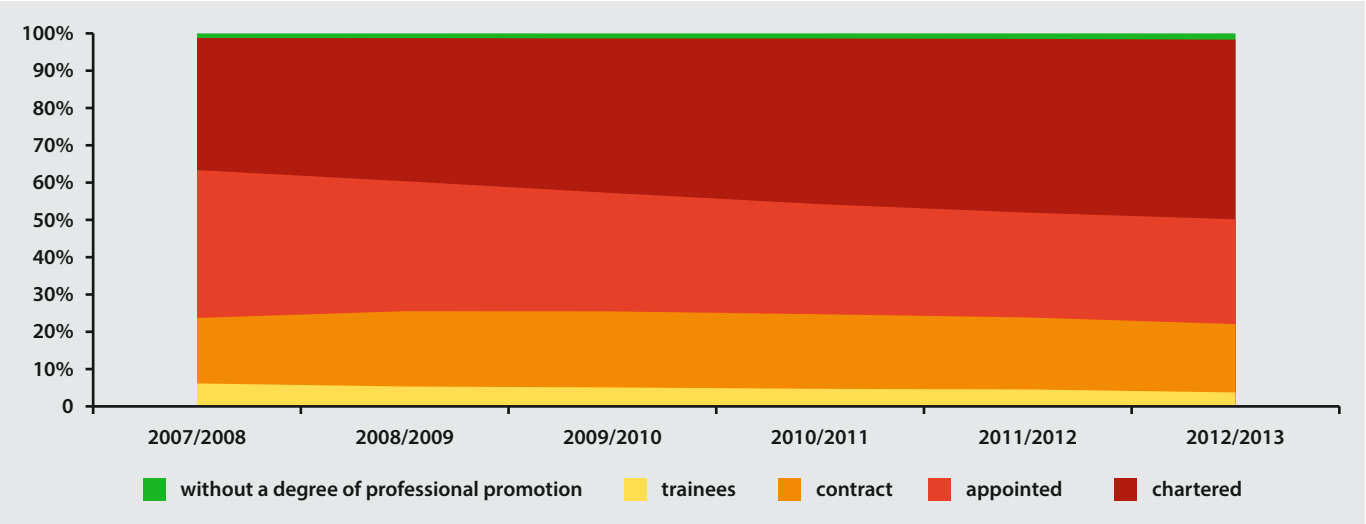
**Graph 2.18. Number of students per teaching post 2007/2008, 2011/2012, 2012/2013.**




*Source: IBE calculations from the Local Data Bank GUS and the Educational Information System.*

The drop in employment of teachers between 2007 and 2013 was, above all, in the public sector. In the private sector, the number of teaching posts rose. However, the public sector employs over 90% of teachers so, changes in the private sector did not overall alter the situation in the entire system.

**Graph 2.19. Teachers by level of professional promotion – 2007/2008 to 2012/2013.**

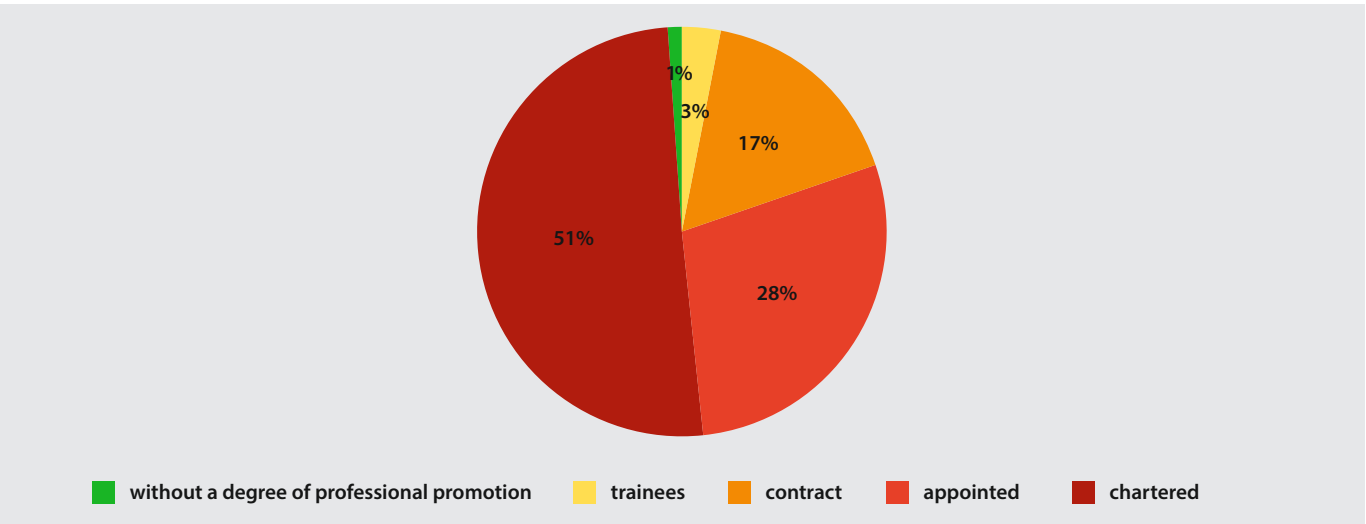



*Source: IBE calculations based on data from the Educational Information System.*

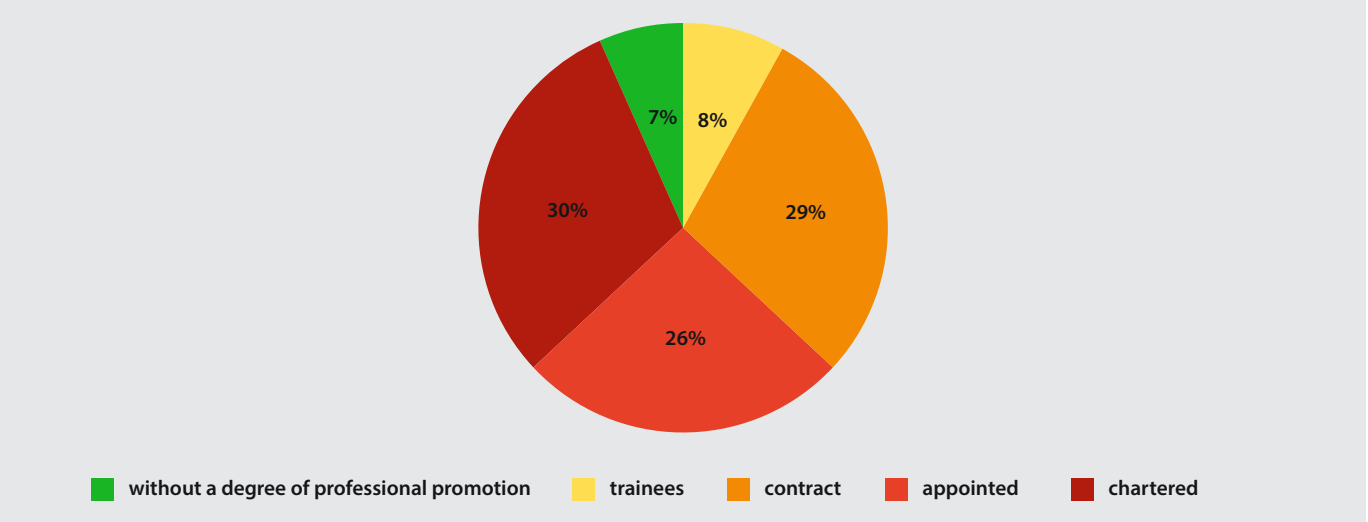
Between 2007 and 2013 there was a significant change in the structure of professional promotion (Graph 2.19). The number of chartered teachers significantly increased, by 12 percentage points. At the same time, the proportion of appointed reduced by 11 percentage points. What is being observed is a shift of the entire workforce towards the top of the career ladder. We can explain growth in teaching pay over the period of interest, as mentioned in the educational financed section, by this observation.

**Graph 2.20. Career profiles for teachers at schools and school complexes for children and young people (upper) and at pre-schools (lower) – 2012/2013.**

**a) Teachers according to level of professional promotion in schools and school complexes for children and young people.**



**b) Teachers according to level of professional promotion in pre-schools.**




*Source: IBE calculations based on data from the Educational Information System.*

The career profile in pre-schools is at variance from other schools. At these establishments, those working are a much younger educational cohort and there is a greater proportion of teachers without a degree of progessional promotion (7%) and trainees. These facts may, therefore, influence the salaries of teachers in both these groups.

## 2.4. Teachers' pay

Analysing teachers' wages, it should be remembered that here we are referring to the pay of teachers employed in pre-schools and schools for children and young people administered by local authorities[24]. In this configuration we do not recognise teachers who do not teach, for example, librarians or guidance counsellors. We consider all hours worked by teachers according to their work contracts without overtime. Teachers, receive basic pay, supplementary pay according to the Teachers Charter and additional compensation from the local authority (e.g., motivational or functional). Besides this, teachers' salaries are raised by extra payments and special contributions (e.g., housing allowance and countryside payment), which are also included in the configuration below[25]. The Ministry of Education sets the minimum basic level of pay and local authorities can increase it. As already described in the section about the finance of education, the Teachers' Charter describes the minimum average pay for teachers at a given level of professional promotion for a given authority. Teachers are also remunerated for overtime. Unfortunately, data describing these final items are not part of the Education Information System. For this reason the graphs for teachers' pay given below are a little reduced.

Average pay in pre-schools is a little lower (3426 PLN) than in schools (3659 PLN). This results, however, from the much younger age profile and career level of this group of teachers which strongly determine pay. If we look at average salaries at professional promotion career levels in both groups, the differences are much smaller (about 30 PLN between trainees and chartered teachers, in the favour of pre-school teachers), and, therefore, in further analysis they will be grouped together.

[24] The Educational Information System does not cover individual data on salaries of teachers working in non-public educational establishments.

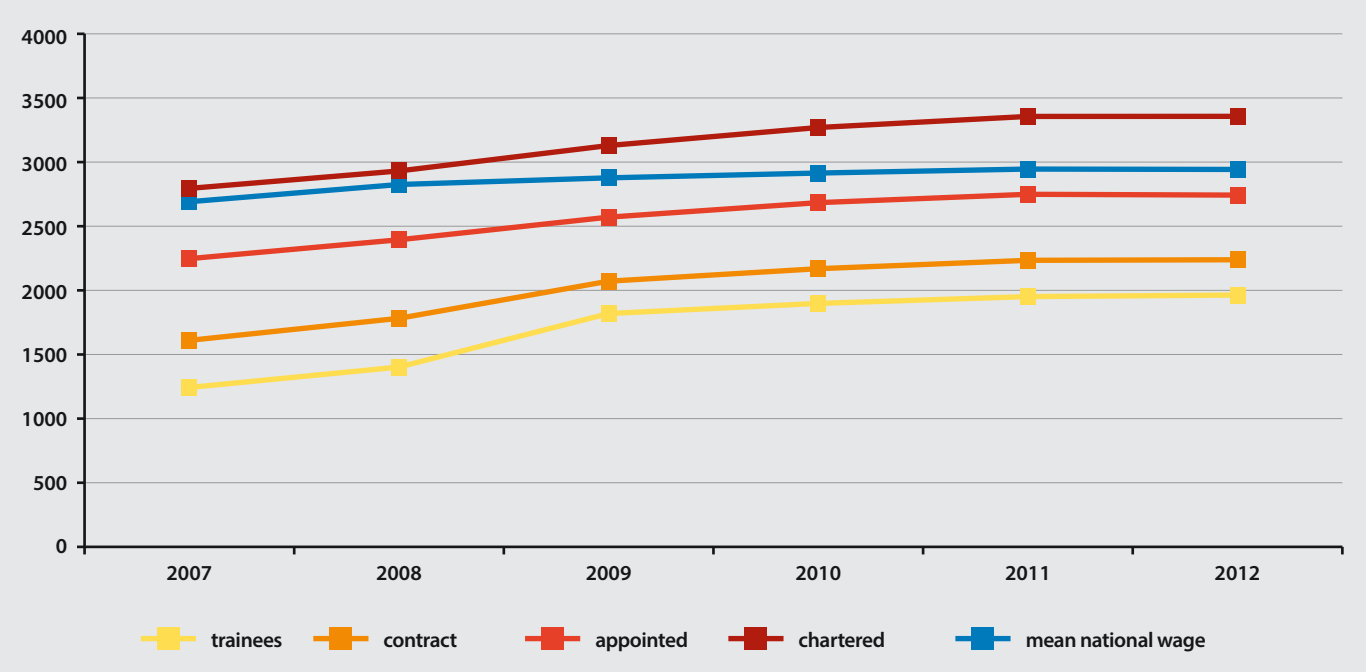
[25] Salaries included extra payments and special bonuses: duty allowance, specialist bonus, inconvenience allowance, for working at nights, motivational, special, related to professional promotion, performance allowance, for working abroad, for many years of work in the public service, housing allowance and countryside payment; they did not include so called „thirteenth", rewards, holiday benefits or overtime payments.

**Graph 2.21. Median gross remuneration for trainee and chartered teachers in 2012/2013 by school/pre-school managing authority.**


*Source: IBE calculations based on data from the Educational Information System.*

In general, teachers' wages - both trainees and chartered teachers – is greater where the administration is the gmina level rather than powiat authorities (graph 2.21). This is certainly related to the rural supplement. As mentioned in the section about educational finance, a significant portion of primary and lower secondary schools are in rural areas. Median pay for trainee teachers was 2350PLN in 2012/2013 and for fully qualified 4017.34PLN. Between 2007 and 2013 there was a distinct rise in teachers' pay, in particular for trainee teachers. In 2012/2013, chartered teachers' salaries were about 70% higher than trainees' while in 2007/2008 the difference was over 125%. In 2009 the entry in the Teachers' Charter covering average teaching wages was changed to the basic amount set by the budget. These changes were most strongly felt by trainees. Earlier, average trainee pay had to be at least 82% of the base rate but after the change it became 100% of that amount. Base pay also increased in successive years. As was mentioned, in spite of the fall in student numbers, authority spending on teacher pay increased. This is reflected in the data describing teachers' real pay. Between 2007 and 2009, real wages of trainee teachers rose by 46% and chartered teachers by 12%. Whereas before 2012, trainee teachers' pay rose by as much as 58% and fully qualified teachers' by 20% (graph 2.22). For comparison purposes real growth in wages in the national economy at the same time was 9% (GUS).

**Graph 2.22. Median real gross remuneration by level of professional promotion and mean national wage 2007/2008 to 2012/2013 (constant prices for 2007/2008).**

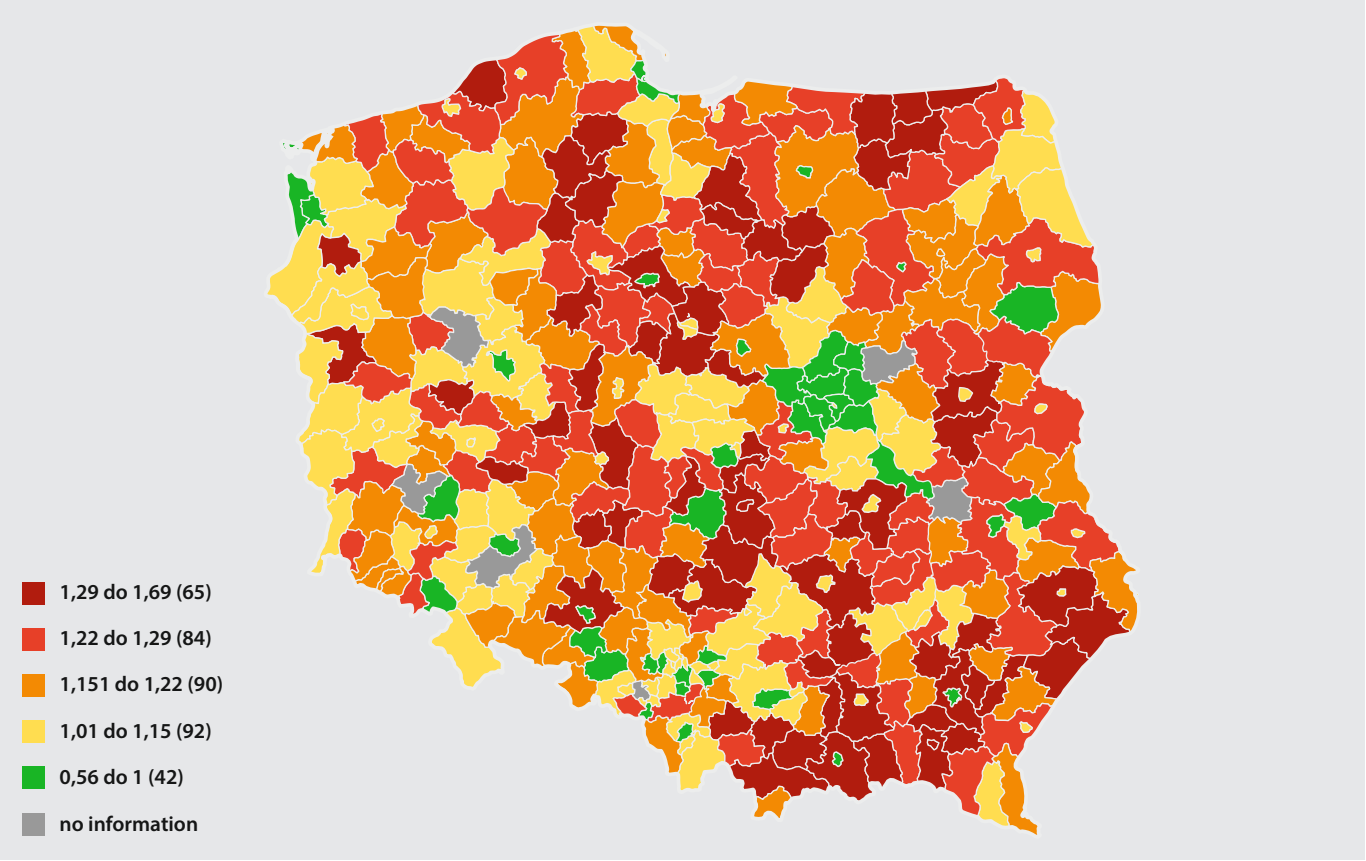



*Source: IBE calculations from Educational Information System and average national wages from GUS.*

In analysis at the powiat level, it should be emphasised that teachers are relatively well-paid in comparison with other occupations. Gross teacher wages were only below average powiats pay in 42 out of 379 areas (for businesses employing more than 9 people). This is the result of the large proportion of teachers at the highest career level which significantly increased the average teacher's salary. Teachers' pay compares less favourably in large towns, for example, in Warsaw average teacher's pay is 71% of average gross pay. The situation is similar in the Gdańsk area and the Upper Silesian conurbation (graph 2.13).

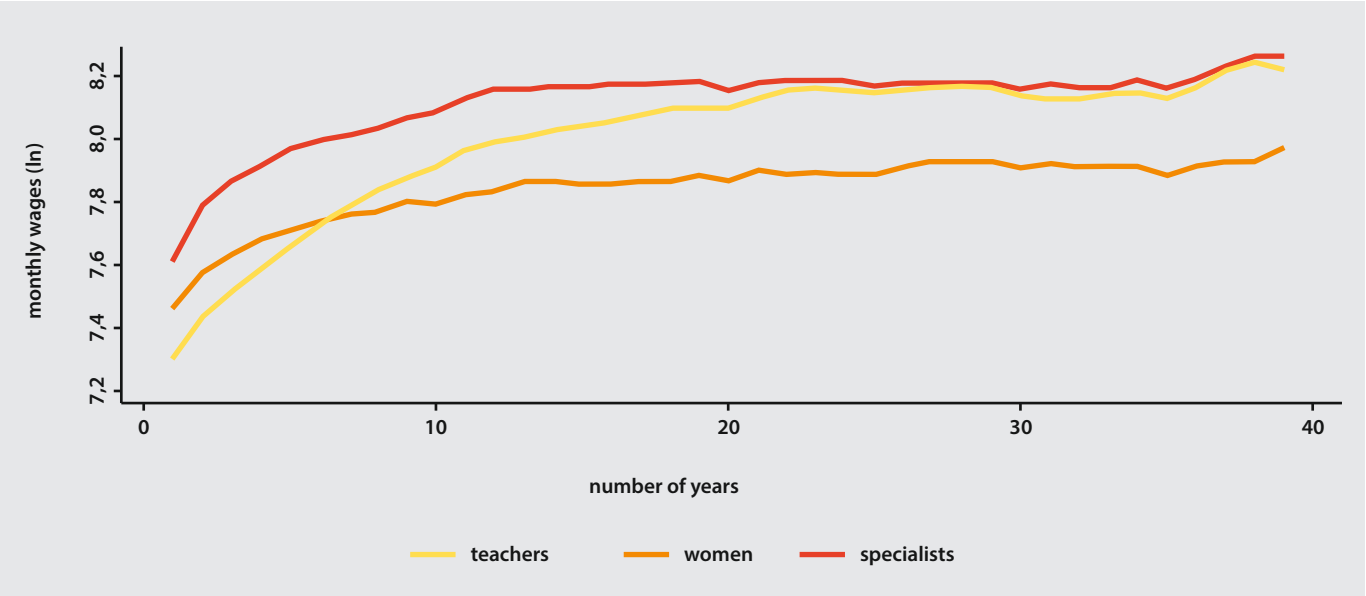
Not only does pay at a given time influence choice of career but also prospective earnings, which is why it is worth looking at the dynamics of teachers' pay in terms of years in service. Teachers' salaries are compared with earnings of specialists and women's wages irrespective of type of work. Since women are in the majority in the teaching profession such a comparison is justified. Starting teacher salaries are significantly lower (graph 2.24). A dynamic increase, however, starts rather quickly, i.e., after 1.5 years of work. After 6 years, average teacher's pay is above average women's wage and continues to grow reaching close to the ceiling after about 20 years but lower than average specialist's earnings. In other OECD countries the situation is similar, i.e., it is characteristic that non-teachers' pay (in general, without identification of specialists and women) is higher over the life cycle than teachers' pay and both become equal after 30 years' work. In Poland, women have a better financial perspective than in other professions even in the short term which, besides other factors, might partly explain the high proportion of women teachers. Compared with specialists, however, teachers fare worse throughout their careers. For those who have the choice of becoming a specialist in another area, the decision to choose the teaching profession is not only for financial considerations.

**Graph 2.23. The relation between average teaching salary with national average wage in powiats – 2012.**




*Source: IBE calculations from the Local Data Bank GUS and the Educational Information System.*

**Graph 2.24. Wages* and years in service in 2010: teachers, specialists and women (business employing 10 or more workers).**




***Wages on a log scale for clearer graphic comparison.*

*Source: IBE calculations from Structure of wages and salaries by occupations, GUS 2010*

# PART II

# PROFESSION - TEACHER

# Introduction

Author:
*Dominika Walczak*

The second part of the Report presents a sociological account of Polish teachers based on Polish and international research. Detailed information on individual studies is available in "the Annex" *Information on the studies.*

This part deals with the following questions: *Who are Polish teachers? What do they think about themselves and their work? How do others perceive them? Where do teachers work? For how long? How do they improve their skills?*

*Who are Polish teachers?* - in order to answer this question, we discuss the socio-demographic profile of teachers. The chapter includes description of Polish general subject teachers in primary, lower and upper secondary schools, their situation and biography in terms of background, size of their locality and parents' education. Special emphasis was placed on differences between teachers working in various levels of education and teaching various subjects.

*What do teachers think about themselves and their work?* - here we focus on three aspects: motivation to become a teacher, opinions about the profession and job satisfaction and relations between their self-efficacy, environment and effectiveness of their work.

*What do others think about teachers?* - this part includes the perception of teachers by society, as well as particular groups having regular contact with teachers - students and their parents. The answers point to the changing role of the teacher in modern society and the emergence of new criteria by which teachers are appraised.

*Where do teachers work?* - searching for answers to this question, we present data related to working in school, including interpersonal teaching staff relations and the role of the school principal in creating the workplace atmosphere. We also consider school and classroom facilities, including traditional office supplies (such as chalk or paper) and the new technologies useful for teaching. Finally, we discuss the influence of working conditions on the teaching quality.

*How much do teachers work?* - here we present the basic results from the study on the time and working conditions of teachers and TALIS 2013. For a better understanding of the specific nature of teachers' work, we present the list of teachers' responsibilities grouped by popularity and frequency. This part also illustrated relations between "blackboard time" and time devoted to other activities, which results from the differences between the teaching of high and low demanded subjects.

*How do teachers improve their skills?* - here we discuss the existing system for professional promotion and present data related to professional development activities undertaken by teachers. We also present a critical evaluation of the professional promotion system intended to motivate teachers' development. We also analyse the impact of experience in work outside the education sector on strategies of dealing with uncertainties and tensions in the education system and on the labour market. These questions seem to be particularly important in view of the current debate on the teacher of the future.

# 3. Image of teachers

## 3.1. Teachers about themselves and their work

Autors:
*Karolina Malinowska*
*Magdalena Smak*
*Dominika Walczak*
*Andrzej Wichrowski*

Teachers are generally shown in the media in mid-October on the occasion of National Education Day, or in the context of individual cases of abuse publicised by the media or union protests. The media less frequently publicise information on "super-teachers", laureates of competitions such as 'Teacher of the Year' organised by teachers' magazine. Analysis of 110 articles from 32 daily newspapers, weekly and monthly magazines published during the first 11 months of 2012 demonstrated that press articles on teachers reported issues such as reduction of job positions, protests, flaws in teachers' education and training (Malinowska and Walczak, 2013).

However, we did not learn much about how teachers see themselves and their profession. Along with family and health, work is one of the most important aspects peoples' lives. There are many factors influencing job satisfaction, both material and non-material. Since 2006, over three quarters of economically active Poles have invariably reported high job satisfaction and almost one third have no doubts about that. Lack of job satisfaction is reported by 9% of Poles. Evaluating different dimensions of their employment, working Poles claim that their professional activities are important (81%) and make sense (81%). The least satisfying aspect is invariably earnings. Only fewer than a half the working Poles feel that their earnings are good and provide them sufficient social benefits (45%) (CBOS, 2013c).

What do teachers think about their work? This chapter focuses on three aspects: motivation for becoming a teacher, opinions about the profession and relations between their self-efficacy, their environment and effectiveness of their work.

### 3.1.1. Motivation to choose the teaching profession

Information about motivation to become a teacher is available from the results of IBE's study on novice teachers[26] . We are aware that our data are qualitative and therefore should be treated rather as an illustration of the issue. However, these results enrich our previous knowledge of the motivation of leading teachers to choose their profession. As the study suggests, for the majority of women, choice of the teaching profession is related to their passion cultivated since childhood. Novice female teachers declared that they had been "playing school" even as little girls and their passion developed through contact with the teachers they met on their educational path. The motives to become a teacher mentioned by respondents included: love for children, good contact with young people and willingness to share knowledge. Interestingly, teachers who perceived their profession as a passion and a calling emphasised that some members of their closest family (parents, siblings, more distant family members) worked in the education system. Some recalled discussion of issues connected with working as a teacher in their homes. Some even intentionally observed the professional skills and careers of family members in order to adapt their experience to their future work. Therefore, for many respondents the decision to become a teacher was regarded as a continuation of the family tradition:

*This is a story that goes back to my preschool times. I always knew I would become a teacher. As a little girl, when I was at music school, I used to record piano pieces with mistakes. Later I would sit a teddy bear or a doll, start the recording and stopped it when there was a mistake – and instruct the doll about how to play it properly.*

[novice teacher, female, warmińsko-mazurskie province]

[26] For more information on these studies see Annex 1: Information on the studies.

It should be emphasised that passionate teachers are the most satisfied group with their choice of profession. Novice female teachers hold their profession in high esteem. They are aware of the difficulties connected with this profession, such as low social prestige, low income, high degree of responsibility for their students, potential health problems (throat and larynx diseases), but they cannot imagine working in any other job.
Men admitted that their choice of profession was a chance decision much more frequently than women. Their choice of educational career was dictated by several reasons, such as the willingness to develop their journalistic passion, love for literature (Polish language teachers) or possibility to study without moving to another place. For some novice teachers the decision to supplement their education with teacher training was dictated primarily by their need for additional qualifications. The decision to become a teacher was made towards the end of their programme, following their friends' examples or after student internships:

*I think it was in the third year, the time for choosing, I was beginning to wonder where I could get a job, you know, this was the direction, you know, it is hard to get a job now, I was looking into it and I chose school, I am interested in schools, I like children.*

[novice teacher, male, warmińsko-mazurskie province]

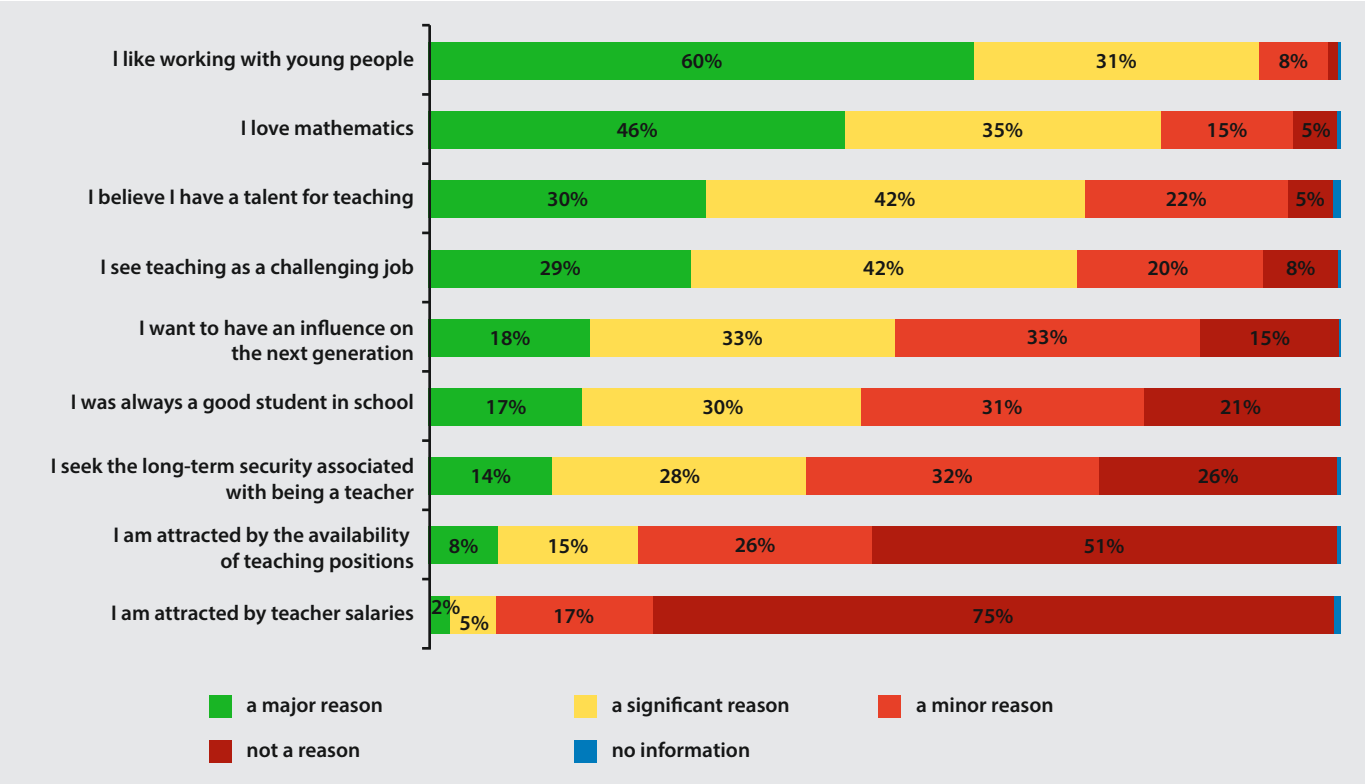
Despite the fact that men became teachers by chance more often than women, they find their work satisfying:

*As to being a PE teacher here, I was always rather passionate about sport. I like transferring this knowledge, when I see that children feel the same.*

[novice teacher, male, łódzkie province]

Only few novice teachers considered leaving the teaching profession at the time of study. The most important factor discouraging men from teaching was the unsatisfactory income.
There was also a group of novice teachers (both men and women) who initially did not plan to work in education and chose studies other than education. These teachers can be divided into two types: The first type includes people previously experienced in working with youth, for example in scouts or religious groups, the second type includes people who planned to work with disabled people, and therefore chose degree programmes such as oligofrenopedagogy, special education, resocialisation or psychology (including sport psychology). For this group of novice teachers choosing a profession involving work with people and helping them was important.
The study of novice teachers allows hypotheses to be made concerning motivation of men and women to choose the teaching profession. According to novice teachers, men more often than women become teachers "by chance" and even though they are predisposed to teaching and develop professionally, less frequently declare their willingness to continue their career in education. The main factor discouraging men from work as teachers is low income which is insufficient to support their families.
Women were motivated to work as teachers by their passion cultivated since childhood. It is worth emphasising once more that for this group, the choice of profession stemmed from having a teacher in their close family or some other person working in education who they considered a role model for being a teacher. The findings of this study are consistent with results presented by Hanna Kędzierska in her book on teachers' careers *Kariery zawodowe nauczycieli* (Kędzierska, 2012).

**Graph 3.1. Factors motivating the choice of teaching profession.**




*Source: IBE calculations from the TEDS-M survey.*

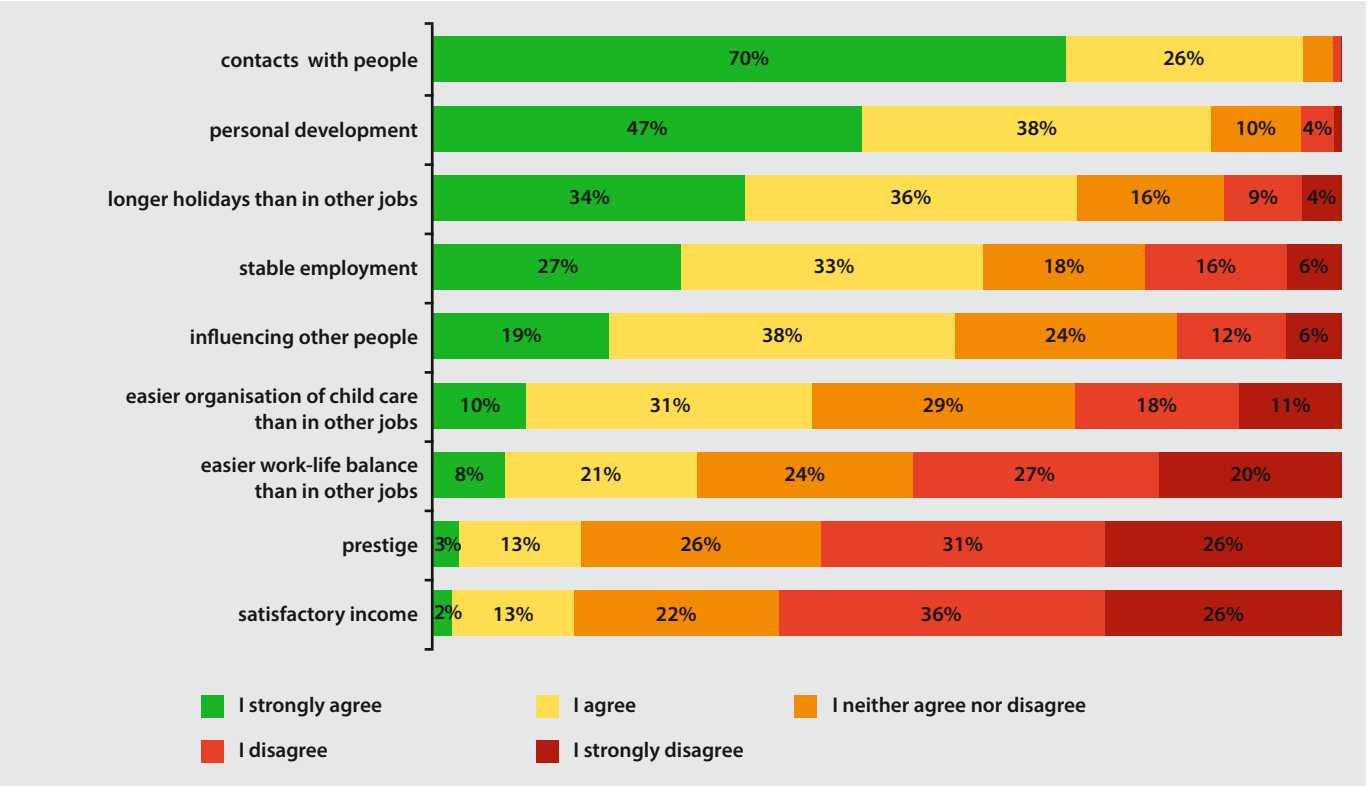
Some information on the reasons for becoming a teachers can be found in the TEDS-M study. Asked about their reasons for working as teachers, mathematics teachers indicated that they like working with young people as their major reason - over 90% admitted that this was either a decisive or highly important reason. Another significant reason for working in this profession was a declaration of positive attitude about the subject of mathematics: over 80% positive answers to the statement were, "I love mathematics". Teachers also quite frequently attached high significance to the belief that they have a talent for teaching, which is indicated by a high percentage of positive answers to the statement: "I believe I have a talent for teaching" (72%). Finally, an opinion that teaching mathematics is a personally challenging job was also a significant reason (71%). The reason of least importance in teacher declarations was their income - three out of four mathematics teachers admitted that this aspect did not play a significant role in their decision to become a teacher.

### 3.1.2. Job satisfaction

The term "satisfaction" or "pleasure" refers to people's attitudes and feelings towards their job. The level of job satisfaction depends on several factors, including internal and external motivation, relations between co-workers, successes and failures experienced by individuals. Importantly, job satisfaction is essential not only from an individual perspective, since it is better to be satisfied with more of one's life in general, but also from the point of view of job effectiveness. Some studies show that teachers' professional satisfaction is positively connected with student results (Ostroff, 1992; Michaelowa, 2002). It seems that job satisfaction can also influence teachers' engagement with their work. It seems important that people are absorbed by their work and interested in what it is they are doing.

In this context it is worth asking the following question: How do teachers benefit from working in this profession? Some answers may be found in the study on the time and working conditions of teachers.

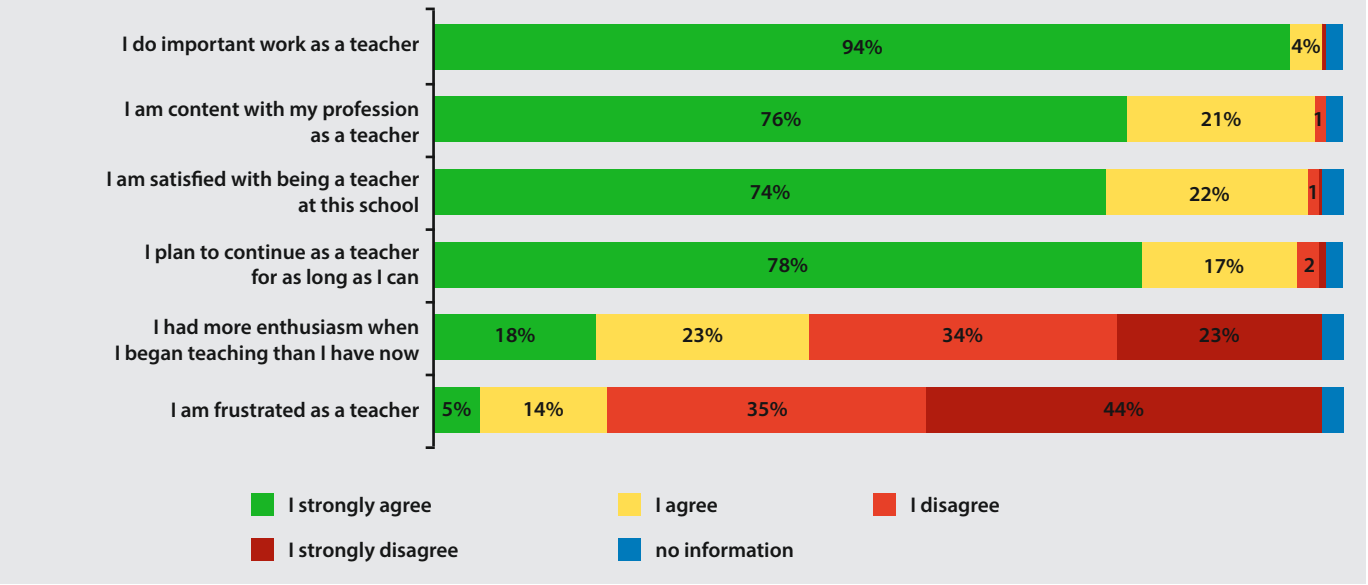
**Graph 3.2. Opinions about teachers' work.**




*Source: IBE calculations from the Time and Working Conditions of Teachers study.*

The majority of teachers asked to express their attitude towards several statements concerning their work agreed that this work provides them with human contact (96%) and personal development (85%). For two out of three teachers, longer holidays than in other jobs are important. Prestige and satisfactory income are least associated with this line of work.
Job satisfaction was also an element of PIRLS and TIMSS studies on early education teachers.

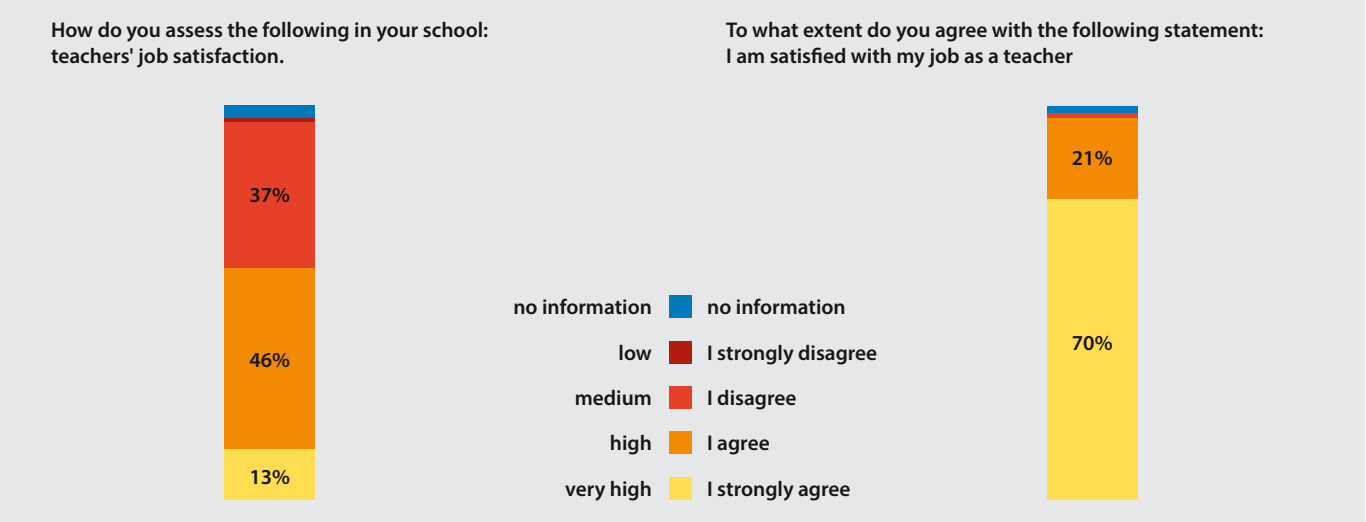
**Graph 3.3. Sense of job satisfaction among early education teachers.**




*Source: IBE calculations from PIRLS and TIMSS.*

The findings showed that almost all teachers consider their work to be important (the combined percentage of answers "I strongly agree" and "I agree" was 98%). Almost all teachers are satisfied with their profession and their schools. It appears that the highest job satisfaction is among teachers over 50 years old. The majority of teachers plan to continue as a teacher for as long as they can. However, the fact that as many as 41% of teachers admit having more enthusiasm when they began teaching than they have now creates cause for concern. The proportion of teachers agreeing with this statement increases with age: only 7% of these teachers are below 39, but 24% for teachers over 50. Every fifth teacher in early education agrees with the statement that their work is frustrating. Interestingly, frustration rises with age: 7% of teachers below 39 and 26% of teachers over 50 agreed with the statement "I am frustrated as a teacher" (the combined percentage of answers "I strongly agree" and "I agree").

**Graph 3.4. Self-satisfaction and assessment of other teachers' satisfaction.**

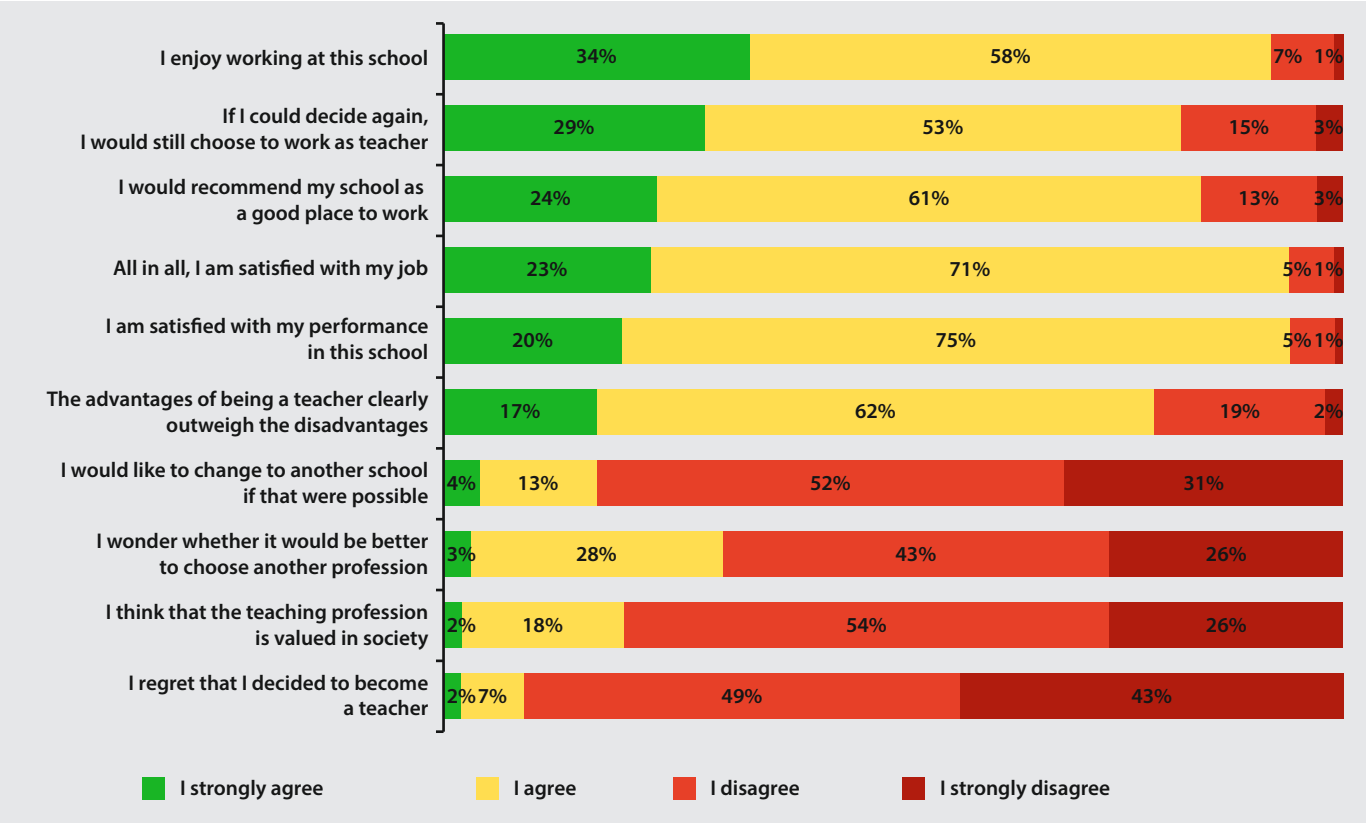



*Source: IBE calculations based on PIRLS and TIMSS.*

It was interesting to compare answers of early education teachers to two questions: about their assessment of teachers' general job satisfaction at the school where they worked and their own satisfaction with being a teacher. One early education teacher in eight assessed others' job satisfaction as high, but three out of four agreed with the statement "I am very satisfied with my job as a teacher". Teachers declare much higher job satisfaction personally than in their assessment of other teachers' job satisfaction. Where does this difference arise? Is it the result of a specificity of cognitive processes or perhaps rationalisation of one's own life choices (since we decided to become teachers we look for positive reasons for this choice)? Or maybe teachers in conversation with other teachers mostly hear complaints, so they conclude that others are dissatisfied?

Teachers were also asked to express their attitude towards some statements concerning teaching in TALIS 2013.

**Graph 3.5. General feelings of lower secondary school teachers about their work.**




*Source: IBE calculations from TALIS 2013.*

TALIS 2013 demonstrated that lower secondary school teachers are very satisfied with their work. As many as 93% of teachers were satisfied with their performance at their schools (the combined percentage of answers "I strongly agree" and "I agree"), 94% were generally satisfied with their job and 92% enjoyed work at their schools. What is more, the vast majority of teachers (82%), would still choose work as a teacher given the opportunity to choose again (women a little more frequently than men). Only 9% regretted their decision to become a teacher. The fact that teachers declared very high job satisfaction does not mean that they were not critical about their work. Every third teacher considered whether it might be better to choose another profession. Contract teachers with 6-10 years' work experience consider this more frequently and religion teachers, the least frequently. Based on questions from TALIS 2013 several scales were created to describe the operation of schools and teachers' performance. The scales describe job satisfaction, self-efficacy, the degree of cooperation between teachers, student-teacher relations and needs related to professional development. The analysis of relations between job satisfaction and other scales demonstrated the strongest correlation of job satisfaction with variables relating to school climate: open management style in which teachers, parents and students influence the school, and good relations between teachers and students. The positive correlation between job satisfaction and variables relating to their self-efficacy is a little weaker. Teachers who taught in disciplined classrooms or who worked in teams and shared their experience with other teachers were more satisfied with their jobs. We also observed weak positive correlations between job satisfaction and the constructivist approach: teachers who perceived teaching as stimulating student activeness and curiosity, encouraging independent problem-solving were more satisfied with their job.

These findings were not surprising: people with high level of self-efficacy and working in favourable conditions - in terms of both student-teacher cooperation, classroom and school atmosphere - were more satisfied with their work.

**Table 3.1. Correlations and standard errors of estimations between general job satisfaction and scales based on the TALIS questionnaire - data for lower secondary school teachers**

| | r * | SE |
|---|---|---|
| participatory school management | 0,43 | 0,02 |
| student-teacher relations | 0,38 | 0,02 |
| efficacy in student engagement | 0,28 | 0,02 |
| teacher self-efficacy | 0,28 | 0,02 |
| efficacy in instruction | 0,27 | 0,02 |
| classroom discipline | 0,25 | 0,04 |
| successful classroom management | 0,25 | 0,02 |
| exchange of teaching experience and materials | 0,14 | 0,02 |
| co-operation among teaching staff | 0,14 | 0,02 |
| teaching team work | 0,14 | 0,02 |
| constructivist approach | 0,13 | 0,02 |
| effective professional development | 0,12 | 0,02 |
| professional development needs in terms of subject field and pedagogical competencies | -0,09 | 0,03 |
| professional development needs in terms of individualised learning and teaching in a multicultural or multilingual setting | -0,05 | 0,03 |

** r – the Pearson correlation coefficient; SE – standard error.*

*Source: IBE calculations from TALIS 2013.*

### 3.1.3. The feeling of self-efficacy

Self-efficacy is defined as individuals' beliefs about their capabilities to successfully accomplish a particular course of action. It influences their feelings, thoughts, motivation to act and the way they act. People with high self-esteem experience challenge as the performance of tasks rather than threats and they associate failure with insufficient effort, knowledge or skills rather than their own inability to succeed. They believe in their own ability to control threatening situations. A high level of self-efficacy increases level of accomplishment, reduces stress and decreases susceptibility to depression. People with low self-esteem treat challenge as a threat, reduce their aspirations and their engagement with accomplishment of goals is weak. In a difficult situation, they focus on their own deficiencies, obstacles and potential unpleasant consequences rather than on action (Bandura, 1994).

In TALIS 2013, the level of self-efficacy was measured using 12 statements to which teachers responded on a four-point scale. Questions concerned efficacy in classroom management, instruction and student engagement. Polish lower secondary school teachers revealed the highest assessment of themselves in the first category. As many as 88% of lower secondary school teachers claimed that they could control disruptive behaviour in the classroom and 95% believed they made their expectations about student behaviour clear. Their self-assessment of efficacy in instruction was lower. About 87% of teachers declared that they were generally able to provide

alternative explanations or used a variety of assessment strategies, but only two out of three teachers felt confident enough about their ability to implement alternative instructional strategies. Teachers reported their lowest confidence in the third group of beliefs, related to efficacy in student engagement. 40% of teachers declared that they could not or could barely motivate students who showed low interest in school work.

These answers are consistent with needs declared by teachers for professional development. Taking into account the general views on teaching expressed by teachers, it is of vital importance to enable their fulfilment of these needs. Only one teacher out of twenty disagreed with the statement that their role as a teacher was to facilitate students' own inquiry and only in fifteen disagreed with the statement that students should be allowed to think of solutions to practical problems themselves before the teacher showed them how they are solved.

Analysis of the data from lower secondary school teachers demonstrated a connection between teacher evaluation and their level of self-efficacy. People with a higher level of self-efficacy, at the same time feel that their work is evaluated on the basis of thorough analysis, whereas those who claim that evaluation of their work and feedback only serves administrative purposes have a lower level of self-efficacy. Another factor influencing the high level of self-efficacy is the presence of a mentor assisting teachers in improving their teaching skills. People providing feedback should consider relations between teaching staff and the information exchange between teachers, as well as, student and parent impressions of teachers' work. Instruction on teaching students with special needs and methodological assistance positively correlates with a high level of self-efficacy among lower secondary school teachers.

## 3.2. Entry to the profession

This part gives the socio-demographic profile of Polish teachers from the Educational Information System (SIO) and findings from the study on teachers' time and working conditions. The basic information on teachers' gender and age, biographical data (information on their place of residence at the age of 15 or their parental level of education) are supplemented with information on their formal education, how they were authorised to teach and their current family situation.

The majority of studies presented in this report concern general subject teachers in schools for children and youth. Therefore, this part presents a description of this particular group of teachers. We should remember that they constitute about two thirds of all teachers working in Polish schools. The remaining third includes teachers of vocational and artistic subjects, "non-subject" teachers working at schools and educational establishments and teachers for adults. In the SIO data for 2012 there is a total of around 650 thousand teachers, of whom 406,790 are general subject teachers in schools for children and youth. We have these teachers in mind when we refer to data from SIO. These data are supplemented with the sample of teachers drawn for the purposes of the time and working conditions study.

The average teacher is 42 years old. According to the time and working conditions study the youngest group includes lower secondary and technical upper secondary school teachers, whereas the oldest - early education teachers.

The first level of education is also clearly distinguishable in terms of gender: according to SIO data, only one teacher in a hundred in early education is male. Of Polish and Russian language teachers, every twentieth is male, art teachers and German teachers - every tenth and mathematics teachers - every seventh. Every third history and physics and about half of PE teachers are male. Men dominate as safety education teachers - two thirds are male. In general, four out of five general subject teachers are female[27].

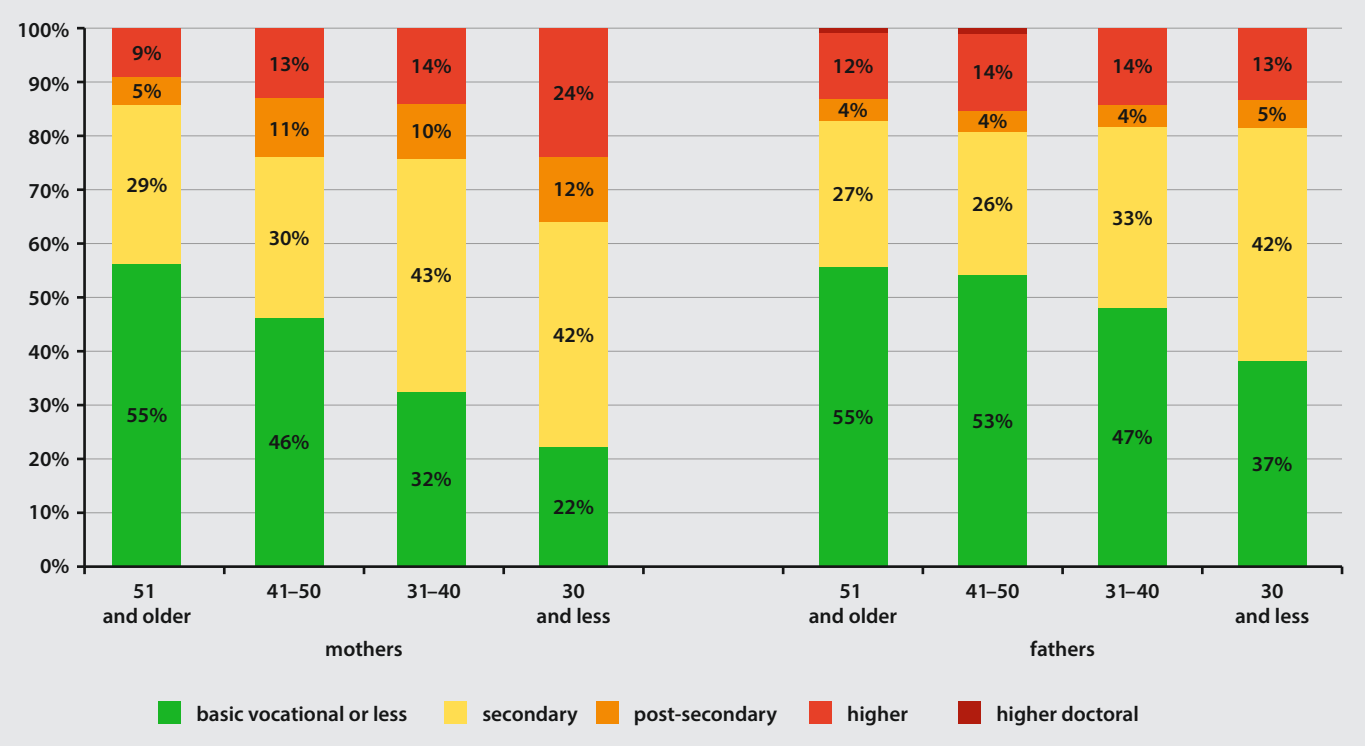
[27] In this chapter we focus on teachers, therefore, the demonstrated proportions refer to the number of people and not full-time positions.

We can also observe significant differences among teachers at different education levels in terms of teachers' parental education. Parents of teachers working at upper levels were better educated than those of teachers at lower levels. Half of mothers and almost 60% of fathers of early education teachers had completed basic vocational education or lower, whereas for upper secondary school teachers their proportions were, respectively, 30% and almost 40%. Only 10% of early education and 17% of upper secondary school teachers' parents hold degrees from higher education.

There are also some differences between upper secondary school teachers: general upper secondary and basic vocational school teachers' parents were better educated than parents of teachers at technical upper secondary schools. The upper secondary school teachers exhibit one more distinctive feature: they most frequently answer "I don't know" to questions about their parents' educational level (3% about mothers and 4% about fathers).

Teachers of languages, science and PE have the best educated family background compared with teachers of religion, early education and mathematics. Religion teachers particularly stand out in this respect: parents of almost half completed basic vocational education or lower (57% of mothers and 69% of fathers). Parents' education also depends on teachers' age (younger teachers have better educated parents, see graph 1) and their place of residence. Unfortunately, owing to the limited sample size we were not able to conduct analyses precise enough to provide better insight into teachers' background and their cultural capital.

**Graph 3.6. Teachers' parents education according to teacher's age.**



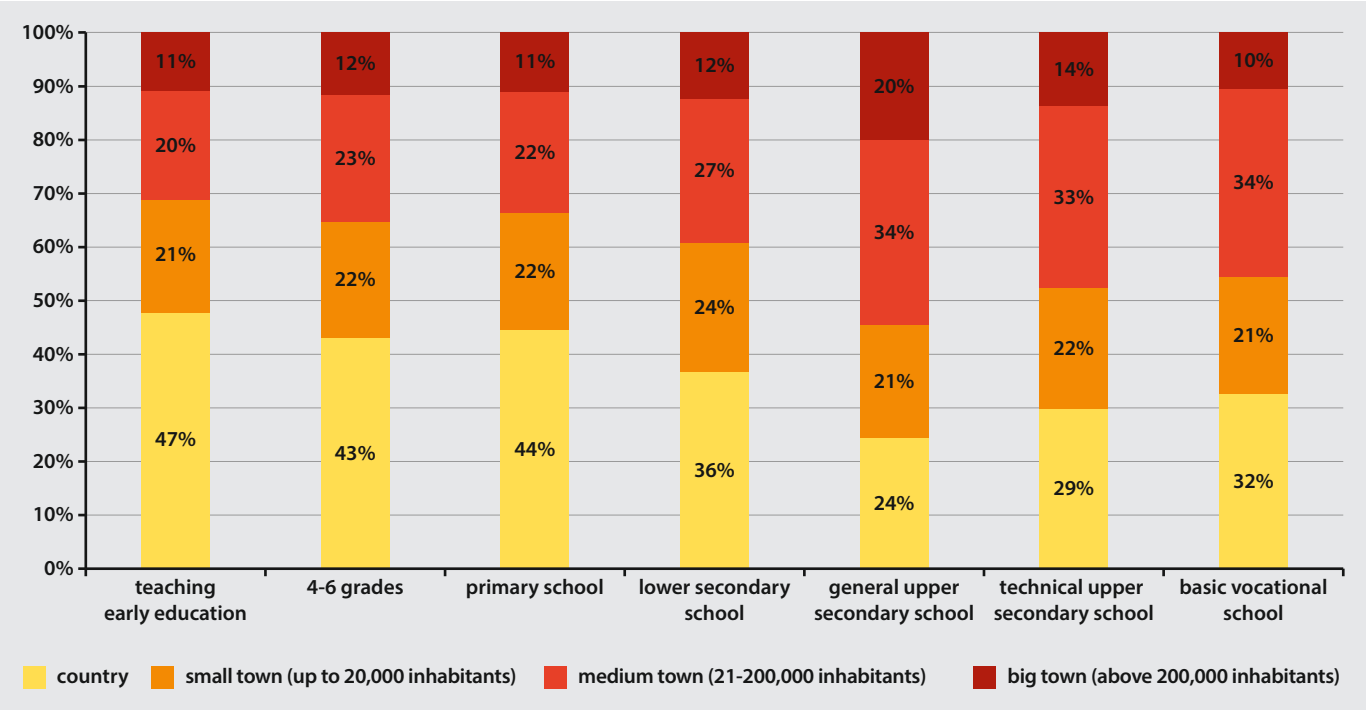

*Source: IBE calculations based on the Time and Working Conditions of Teachers study.*

Some additional information can be found in the nationwide study *School Determinants of Teaching Effectiveness*, which included data on parents' professions for early education and 4-6 grade teachers. These professions were coded according to the International Standard Classification of Occupations (ISCO-08). For mothers of early education teachers and later grades of primary education, the largest group consisted of "Teaching professionals" (13,6% of early education teachers' mothers and 13,3% of 4-6 grades teachers' mothers). This category also includes teachers in all types of schools. Teachers' fathers worked mostly in agriculture or craft and related trades. A relatively high

proportion of teacher mothers may suggest intergenerational transmission of the model, creating teaching traditions within families and occupational succession in the mother-child line. Interestingly, frequency of this succession was the same for men and women, both in the mother-daughter and mother-son lines (the majority of early education teachers surveyed were women - 95%, but 4-6 grade teachers are more varied in terms of gender: 21% are men and it emerged that their mothers were as frequently teachers as in the case of women surveyed).

Slightly over one third of teachers surveyed in the time and working conditions study lived in rural areas at the age of 15. Except for general upper secondary schools, of teachers working at all education levels and in all types of schools, 10-13% lived in big cities at the age of 15. Primary school teachers more often lived in rural areas. Upper secondary school teachers resided in cities of medium size. Detailed values are shown on the graph 3.6.

**Graph 3.7. Teachers living in towns of different sizes by education level and school type at the age of 15.**




*Source: IBE calculations from the Time and Working Conditions of Teachers study.*

Looking deeper into teachers' biographies we can see that 74% passed the General Certificate of Secondary Education (upper secondary school teachers slightly more frequently than basic vocational and technical upper secondary school teachers - one in five passed Matura at technical secondary school). The lowest proportion includes PE and religion teachers (more finishing technical secondary school) and the highest modern foreign language, Polish language and science teachers. As would be expected, mathematicians chose mathematics for Matura (98%), and foreign language teachers – a foreign language (91%). 78% of historians chose history as their Matura subject.

Teachers taking part in their time and working conditions study usually completed their higher education full-time (56%) rather than extra-mural (48%)[28], but these proportions are reversed among early education teachers: only 29% graduated from full-time programmes, compared with general upper secondary school teachers - 80% and basic vocational and technical upper secondary school teachers (70%). Current mathematics and science teachers most frequently completed full-time programme (three quarters), whereas PE and religion teachers least frequently.

[28] The proportion of qualified teachers — by education level and type of school.

Description of teachers' preparation for the job cannot omit their formal education. The SIO data show that almost all teachers hold a degree from higher education: only 5% have Bachelor's degrees and only 0.4% are without formal higher education. Teachers with Bachelor's degrees who participated in the study worked mostly in primary and lower secondary schools or taught foreign languages, less frequently in vocation secondary schools or as teachers of history, civic education, Polish language and science. The last two groups included the highest number of teachers with doctoral degrees.

There are different paths to obtain the qualifications to join the teaching profession. These have changed over the last decades. In the time and working conditions study, teachers could select various different paths they had taken towards their qualification from a list. The most common path to obtaining qualifications was a degree programme with teaching specialisation - two thirds of lower secondary, general upper secondary and basic vocational school teachers obtained their qualifications this way. This group includes fewer vocational secondary school teachers and most primary school teachers. The average is increased by early education teachers. One out of four general and technical secondary school teacher, had pedagogical training outside the degree programme, one in five lower secondary and basic vocational school teachers and one in six primary school teachers. Teacher training colleges were the most popular path for primary school teachers (one in four) and less so for lower secondary school teachers (one in seven) or teachers in other types of schools analysed (one in ten). The fourth way to obtain qualifications is by completing post-graduate studies. One in six teachers had completed this form of education, more often working in primary school and less often upper secondary school. It is worth mentioning that early education school teachers indicated the most ways to obtain qualifications (1.5), which suggests variety of their professional development.

The *Time and Working Conditions* study also included questions on teachers' personal lives. The study demonstrated that 75% of teachers were in a stable relationship. This proportion was slightly higher among early education teachers and Polish language teachers (80%). Around 6% of teachers are divorced or separated and 2% are widowed. Almost two thirds of teachers' partners work. Every seventh teacher in a stable relationship has a partner who is also a teacher. Teachers in relationship with other teachers work mostly in upper secondary schools (one out of five upper secondary school teachers and one out of fifteen early education teachers is in a stable relationship with another teacher). Generally two thirds of teachers have children. Early education teachers are parents more often (77%), technical upper secondary school teachers less frequently (62%). About 60% of teachers have school-aged children.

**Tabela 3.2. The proportion of qualified teachers — by education level and type of school.**

| | early education | 4-6 grades | lower secondary | general upper | technical upper | basic vocati |
|---|---|---|---|---|---|---|
| degree programme with teaching specialisation | 78,9% | 65,5% | 65,4% | 66,2% | 58,9% | 67,8% |
| teacher training during studies | 9,4% | 20,9% | 21,9% | 26,1% | 28,5% | 20,2% |
| study at a teacher training college | 33,4% | 17,9% | 15,0% | 8,2% | 11,8% | 10,5% |
| post-graduate teacher training courses | 6,3% | 5,5% | 4,3% | 5,0% | 6,4% | 4,6% |
| post-graduate subject-related course | 14,4% | 21,1% | 16,1% | 9,9% | 12,6% | 12,8% |
| teacher training qualification course | 7,3% | 8,7% | 9,0% | 6,2% | 8,2% | 9,7% |
| subject-related qualification course | 6,2% | 7,7% | 5,4% | 2,9% | 3,2% | 3,2% |
| Other | 1,4% | 2,6% | 2,2% | 2,5% | 2,4% | 1,4% |

*Source: IBE calculations from the Time and Working Conditions of Teachers study.*

Teaching is regarded as "profession", which might suggest some distinction from other occupations — people who are not teachers. At present, teachers stand out in terms of having a very high level of education. However, in socio-demographic terms they are normal citizens: having various origins, family backgrounds with varied (but richer than average) educational experience and in stable relationships or single and with or without children. This description is general enough to seem average, but if we think in terms of particular individuals rather than of a group of several hundred thousand, this perspective changes. It happens that a teacher is not an outsider but a familiar person of common experience which allows normal relations and social exchange. It is an invaluable resource for teachers and school principals, but also students and therefore the whole society.

## 3.3. Opinions about teachers and their work

The previous chapter indicated that teachers did not feel that they belonged to a group enjoying social prestige, however, according to the Public Opinion Research Center (CBOS) study on occupational hierarchy (CBOS, 2013a), they have ranked for decades among the top ten most respected professions. In this ranking, teachers were just below university professors or factory engineers and in 2013 respondents placed them one position above doctors. These discrepancies result from differences in the understanding of prestige that respondents may have had in mind in these studies. Asked whether they felt respected, teachers probably associated the idea with individual prestige characteristic for most people. Asked to assess their hierarchy of professions, Poles probably imagine institutional prestige associated with a profession, which reproduces the social norms. The next part describes the image of teachers held in the eyes of society and the groups having most frequent particular contact with teachers, i.e., students and their parents. Their answers suggested changes in the teachers' role in contemporary world and signal the appearance of new evaluation criteria concerning the teacher's work.

### 3.3.1. Teachers in the eyes of public opinion

As opposed to the politicians, teachers are not subject to regular research of their reputation. Some information about the public image of this occupational group can be found in studies on professional status conducted by the Public Opinion Research Center (CBOS) every few years. Social reception of the teaching profession depends on the conditions and nature of the work. The CBOS study *Aktualne problemy i wydarzenia* (CBOS, 2012b) provides some data concerning this issue.

Assessment of teachers' working conditions indicated respondents' heterogeneous attitude towards the profession. Half of respondents stated that teachers' holidays were too long and their weekly working time at school, too short. The most positive image in terms of working conditions was that reported by teachers themselves (5% of them were included in the sample) and people with teachers in their close family (30% of respondents) The most critical view was expressed by parents of children of school-age (24% of respondents).

The level of teachers' income was unambiguously assessed. One third of respondents agreed that teachers' salaries were too low, but the same proportion of respondents disagreed with this statement. Opinions about teachers' income are related to age (young people more frequently think that teachers' salaries are too low), education and social-occupational group (respondents with higher levels of education and higher income more frequently agree that teachers' salaries are too low). However, it should be noted that every fifth respondent in this study answered "It is hard to say", which suggests that they have no clear opinion about the specificity of the teaching profession, especially those who had no personal contact with school.

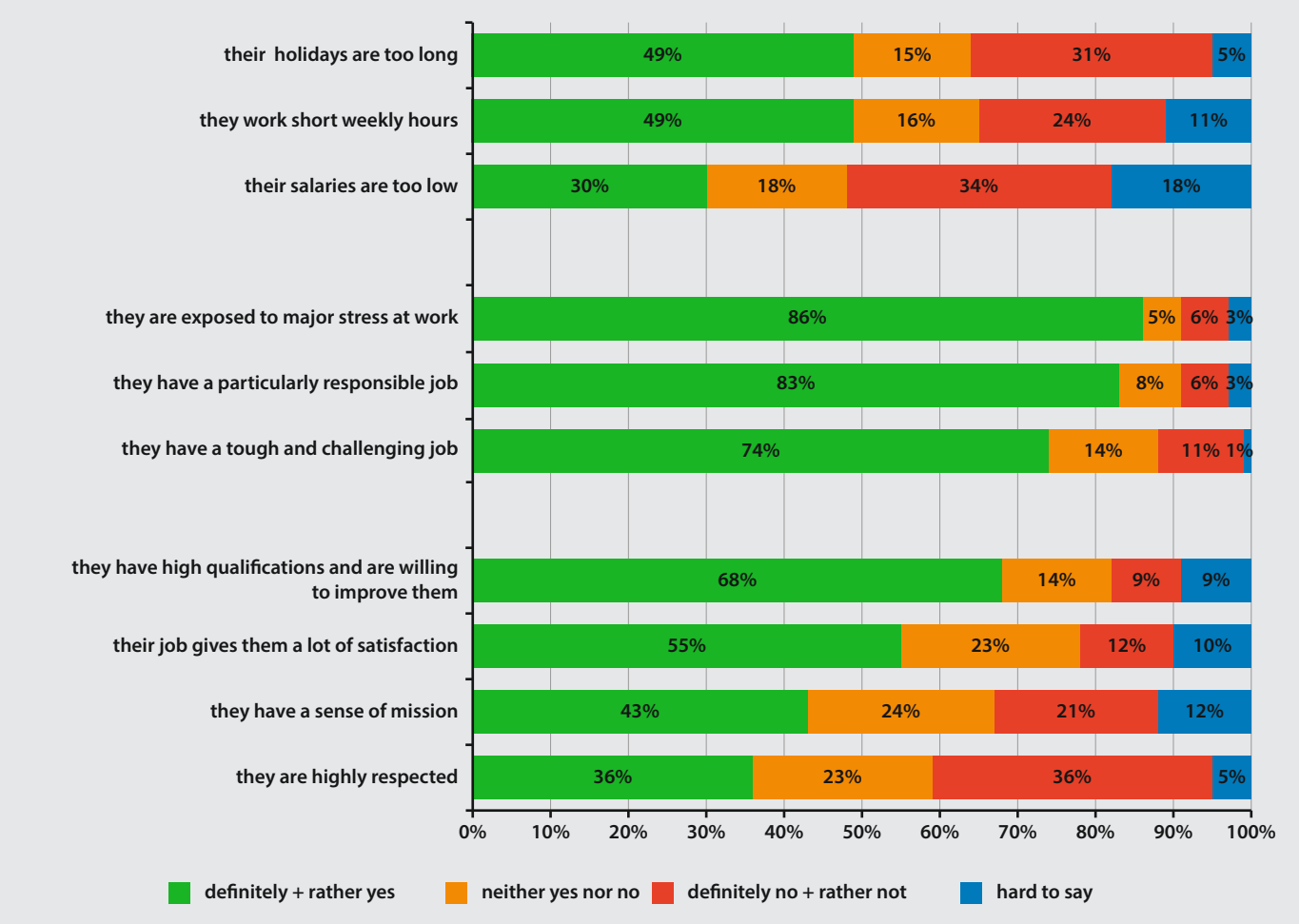
Teachers' work was recognized as stressful, responsible and difficult. In the last statement ("they have a tough and challenging job") there is a noticeable correlation with age (older people more often agreed with this statement), social and occupational group (higher status - more often agreed), income (higher income - more often agreed) and religious involvement (those participating more frequently - more often agreed). Teachers are regarded as having high qualifications and who are willing to improve them.

People with children held the strongest belief in teachers' job satisfaction (61% positive answers), whereas teachers' themselves showed the weakest belief in their own job satisfaction (53% negative and 16% positive answers). Also people lacking contact with the profession did not generally credit teachers' job satisfaction. Fewer than a half the respondents believed that teachers had a sense of mission: the largest number of positive answers were from teachers (51%) and the least from people with no contact (41%). It should be noticed that of teachers, 28% responded negatively to this question and parents 27%.

In studies on occupational prestige teachers are invariably ranked very high and placed among the top seven most respected occupations; respected or highly respected by 74% of respondents. This proportion had slightly improved in comparison to 70% in 1999 and 2008 (CBOS, 2013a). However, in the study on the social image of teachers (CBOS, 2012b) only 36% of respondents stated that teachers were respected, 22% teachers, 34% with teachers in their families, 38% not connected with the profession and 41% of parents. People responding positively usually lived in rural areas and had obtained a low level of education.

Otherwise, teachers themselves do not feel respected. In the study on time and working conditions only 16% agreed that working as a teacher gave them prestige. We can, therefore, observe a paradox concerning prestige in the teaching profession. Studies on occupational prestige point to teachers' high standing, but teachers themselves sense a deficit in respect for their daily work. This discrepancy between occupational prestige and teachers' self-assessment originates from the fact that respondents were asked about institutional rather than positional and personal prestige in these studies. This kind of prestige results from personal traits rather than posts occupied, roles performed or institutions worked in. However, the circumstances and specific character of teaching have changed during the last decade. Legislation has transformed school into a more democratic institution, both in terms of student-teacher and parent-teacher relationships. Due to new technologies, school is not the only place for transmission of knowledge – access to information is widespread. These phenomena necessitate the finding of new ways to build teachers' authority and reformulation of their role. The changing school role results in different evaluation criteria for a teacher's work: 81% of primary school and 75% (TEDS-M) of lower secondary school teachers believe that the majority of their students treat them with respect. At the same time, 65% of teachers in the *Szkoła bez przemocy* (School without violence) study declared that they were ignored by their students, 42% stated that students intentionally provoked their anger and 19% were offended. Such student behaviour depressed teachers' self-esteem. Imagine the classroom where one in four students behaves contrary to accepted norms or intentionally provokes teachers - mass media reports on problems during lessons should not come as a surprise.

**Graph 3.8. A survey of the image of teachers in the total respondent population.**




*Source: Wizerunek nauczycieli, komunikat z badań CBOS BS/173/2012 (The image of teachers, communication from CBOS survey BS/173/2012).*

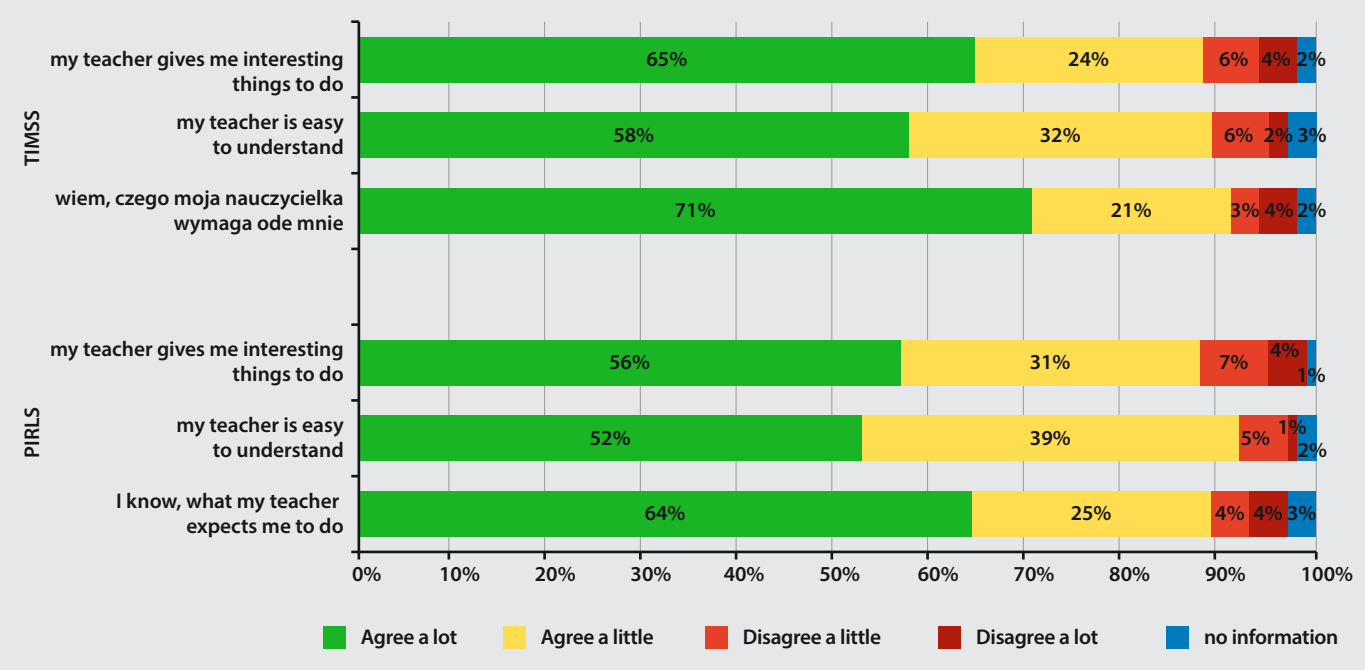
There were interesting answers to the following question related to the attractiveness of the teaching profession: "Whether or not you have children, would you like one of them to work as a school teacher in the future?". More than half of respondents (54%) did not agree and only 12% responded with "Hard to say". The idea was favoured by people living in rural areas and in smaller towns of up to 100,000 inhabitants, people with primary education, workers and office clerks, home-makers and people with the low per capita income in their family.

### 3.3.2. Teachers according to students

Student assessment of teachers depended on level of education and age. Younger students had a more positive image of their teachers, whereas older students were more critical. This can be explained by their different stages of development. Younger respondents (grades 1-3 students in TIMMS and PIRLS studies) were more inclined to idealise their teacher, whereas some studies showed that teenagers were more inclined to devalue them (Kalka, 2011; Kalka and Feliksiak, 2014; also see Birch, 2012). Results of studies in which children and youth had the opportunity to assess several aspects of their teachers' work are summarised below.

In the TIMMS and PIRLS studies, the majority of pupils in early education positively assessed their teachers (87%). Children were interested in tasks set by their teachers and knew what their teachers expected.

**Graph 3.9. TIMSS (upper section) and PIRLS (lower section) results.**




*Source: IBE calculations from the TIMMS/PIRLS study.*

According to the study requested by the National Bureau for Drug Prevention in 2010, upper secondary school students had a rather negative image of their teachers. Between 2008 and 2010 the proportion of students believing that all or the majority of teachers tried to teach them independent thinking decreased by 8 points (in 2010 it was 53%). In 2010, only 39% estimated that all or the majority of teachers behaved suitably and tactfully; 55% felt that only some and 6% that none of their teachers treated them appropriately. Every fifth student declared that for the majority or all of their teachers the only important thing was to go through the motions of teaching classes (an improvement in comparison to 2008). According to students, teachers' communication is also not a very strong point: only 36% thought that many or most teachers openly discussed problems and conflicts, but every eighth stated that none of their teachers did that. A similar study was conducted in 2013, but changes in questioning mode prevent direct comparison. Analysis of results demonstrates that young people value their teachers' knowledge and wisdom (80%), but they also indicate that many teachers (33% of Polish language teachers and 45% of mathematics teachers) cannot transfer this knowledge and only half can share enthusiasm for their subject. There were also negative phenomena observed in schools: favouritism (around 30%), student-teacher conflicts (incidental - 16%, repeated - 23%), bullying (9%) and humiliation of students (10%) (Kalka and Feliksiak, 2014). The PISA 2012 results are also a source for critical evaluation of teachers' work and school activities. Polish students believed that school only provided few activities aiding their development. The proportion of such answers is higher than in other countries. Students did not feel part of their school. The quality of the student-teacher relationship and fair treatment of individual students was assessed as low. The situation has not improved over the past several years. Teachers negatively assessed school atmosphere, but they appreciated the academic content of the curriculum as its strong point – examples include assistance in the understanding scientific concepts. These opinions may originate from the fact that Polish teachers are highly qualified in their subjects but perform less well in terms of interaction with students.

### 3.3.3. Teachers according to parents

Other important group, whose opinion has to be respected, are the children's parents. Along with students and teachers, they are important actors in the school environment. The research shows that parents of younger children attending primary school are most likely to maintain contact with teachers. After the beginning of lower secondary school the proportion of parents keeping regular contact with school decreases radically (Czapiński, 2009).

Information concerning parental opinion of early education teachers can be found in the IBE study *Six and Seven-Year Olds Entering School*. The study used scales to measure parental level of satisfaction with different aspects of school operation, taken and adapted for the purpose of this study from tools proposed by A.I. Brzezińska and co-workers (Brzezińska, Kaliszewska-Czeremska, Matejczuk and Urbańska, 2010). One of these scales was used to evaluate parents' satisfaction with their child's class tutor (Table 1). To detail parents' opinions about children's class tutors, individual places on this scale are used, treating them initially as information about dimensionality of parental satisfaction with teacher relations. We than turn to description of scale results according to parents of students from different education groups.

Most parents of children entering school assessed their class tutors highly in various aspects relating to both parent-teacher contact and care of their children. There were, however, areas more critically assessed, such as supply of materials allowing parents to stimulate their child's development at home or suggesting ways to obtain such materials - more than one fifth of parents indicated a low level of satisfaction with this, or suggesting various forms of child development support at home - 13% of parents declared low assessment of teachers in this area. However, 95% highly appreciated the teacher's daily availability and the possibility to talk. In results on the parental satisfaction scale concerning contact with their children's teachers there were observable differences between parents of teachers from different education groups, but this effect was rather weak (Kaczan and Rycielski, 2014). The child's membership of an educational group explained only 0,9% of variations on this scale.

The analysis showed that within this scale there was a significant difference between parents of 7-year-olds from the first grade and parents of 6-year-olds attending school or mandatory 1-year pre-school (both in school and in preschool establishments) (Kaczan i Rycielski, 2014).

Parents were also asked about what they appreciated the most and what they liked the least in their contact with a class tutor. This was an open question and respondents could indicate more than one area or in their description of a teacher. Parents' answers were coded into 5 main categories: contact quality, approach to children, class tutor's characteristics, competence and organisational skills. Most respondents answered that there were no unsatisfactory areas of contact with their class tutor. They were more inclined to answer questions about what they appreciated in these contacts. The most frequently indicated appreciated aspect was the quality of contact (responses in this category were offered by 63% of respondents). Respondents pointed to teachers' availability to parents, helpfulness, willingness to provide them with advice and support, openness and sociability, taking into account their opinions and ideas and keeping them informed about their child's progress and problems on a daily basis. Interestingly, the quality of contacts was also indicated by dissatisfied parents - 8% lacked satisfaction in this area of parent-teacher relations. They claimed that teachers were unavailable to parents, not sociable, did not keep them informed on a daily basis about their child's progress and problems, did not accommodate their opinions and ideas, were not willing to help with problems and they were difficult to contact via phone, e-mail or electronic class record. The other important area influencing parental satisfaction with teachers was approach to children. Parents declared that the approach to their child was the most satisfying area of their relations with teachers (36%), that teachers were engaged, took good care of children, were understanding with both parents and children, ensured discipline - able to control children and supported development

of children's interests. Parents expressing their dissatisfaction in the area of the approach to children (9%), indicated the exact opposite to their children's class tutors (that they were not engaged, etc.).

**Tabela 3.3. Parents' individual positions on the class tutor-parent relation scale.**

| evaluation of a child's class tutor in the following areas: | very high | rather high | rather low | very low | hard to say |
|---|---|---|---|---|---|
| everyday availability - possibility of meeting to talk, ask about something or seek advice | 63% | 30% | 5% | 2% | 0% |
| availability in unexpected, atypical situations - possibility of phone or e-mail contact, meeting outside working hours | 58% | 32% | 6% | 2% | 2% |
| willingness to meet parents' needs, etc. - suggesting different activities, encouraging or facilitating specialist consultation if there is such a need | 55% | 36% | 5% | 2% | 2% |
| willingness to accept parents' initiatives and their ideas, etc.: when teachers present some proposals or inform them about a problem | 52% | 38% | 6% | 2% | 2% |
| helping parents to cope with difficult or atypical situations, etc. - child's illness, trouble with adapting to educational establishment, behavioural issues at home | 49% | 37% | 6% | 1% | 7% |
| informowanie rodziców o codziennym zachowaniu dziecka – o tym, co było pozytywne w ciągu dnia/tygodnia | 52% | 36% | 8% | 2% | 2% |
| informing parents about their child's everyday behaviour – reporting about what positive things happened during a given | 53% | 37% | 6% | 2% | 2% |
| informing parents about their child's progress during a week/month/ semester | 53% | 39% | 6% | 1% | 1% |
| presenting children's creative activity to parents (works, video recordings, pictures) | 50% | 37% | 8% | 3% | 2% |
| helping children in everyday typical situations - in locker rooms, during meals, class or activities outside school | 46% | 40% | 7% | 2% | 5% |
| helping children in atypical, difficult situations, etc. - conflict within their group, bad feelings, intense emotions | 51% | 38% | 6% | 2% | 4% |
| initiating various forms of contact and cooperation with parents | 45% | 42% | 8% | 2% | 3% |
| suggesting various forms of child development support at home | 44% | 40% | 10% | 3% | 3% |
| supplying materials allowing parents to stimulate a child's development at home or suggesting ways of obtaining suitable materials, etc. | 38% | 36% | 15% | 5% | 6% |

*Source: IBE calculations from the Six and Seven-Year Olds Entering School study.*

Most parents of children entering school are satisfied with the frequency of their contract with class tutors (93%). Contact with teachers is too rare for only 6% of parents.

The study on six and seven-year olds also collected data on parental opinions concerning the course of parent-teacher meetings. The findings showed that most parents of children entering school

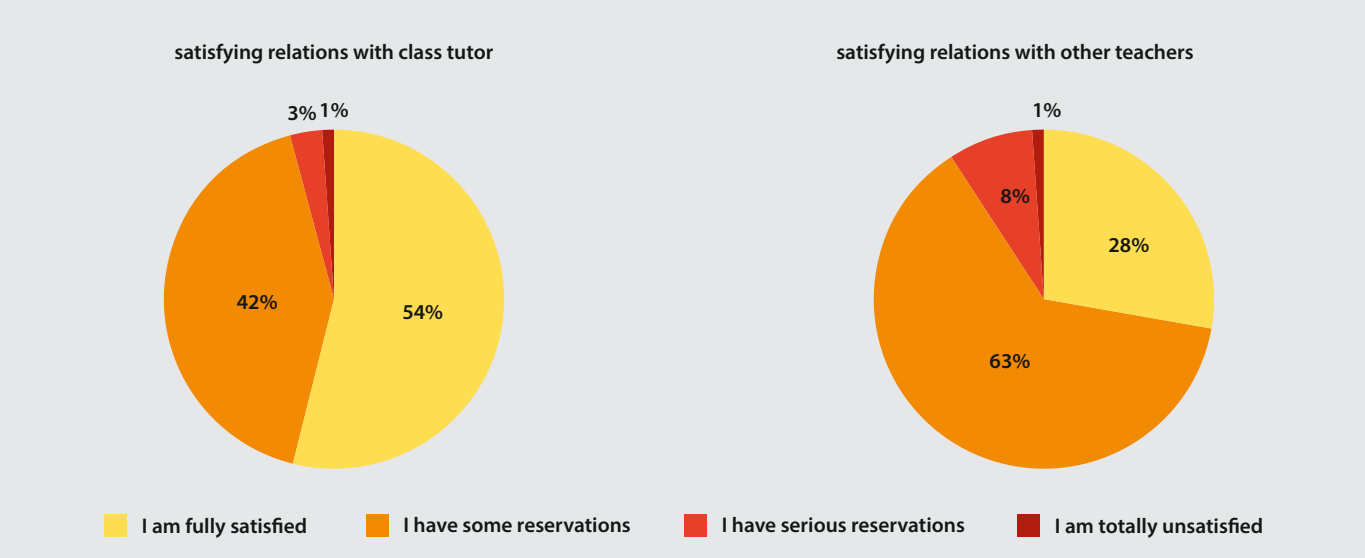
were fully satisfied with the course of these meetings (graph 3.10), 2% of parents declared serious reservations and 1% of parents were totally dissatisfied with these meetings in their child's school.

**Graph 3.10. Parents' satisfaction level with the course of parent-teacher meetings.**


*Source: IBE calculations from the Six and Seven-Year Olds Entering School study.*

Parents were also asked to evaluate the atmosphere, climate and chance to express their opinion during conversions with their child's class tutor. The majority of respondents (87%) declared that the climate of their conversations with teachers was best described by the following statement: *We are both equal partners in conversation and each of us has an opportunity to express their views, expectations and propositions*. Some parents chose a statement: *Mostly the class tutor talks and I listen, which precisely meets my expectations (8%). Little over 3% of parents expressed their dissatisfaction with the climate of conversations, choosing the statement: Mostly the class tutor talks and I listen, which does not meet my expectations, because I want to have an opportunity to express my views, expectations and propositions*. Only fewer than 2% of parents declared that during their conversations with a class tutor mostly they talk and teacher listens, and for half of these respondents this situation was uncomfortable, whereas it met the expectations of the remaining half. The study on the structure of interaction during parent-teacher conversations about the educational problems of primary, lower secondary and general upper secondary schools (Konieczna, 2009) revealed that in terms of subject-matter the majority of subjects (80%) are initiated by a teacher, which suggests a clear division within this interactive structure: the role of managing interaction and initiating issues to be discussed during conversation is ascribed to the teacher. Therefore, this relation cannot be considered a partnership.
Parents of fifth grade students were asked about contact with teachers in the *School Determinants of Teaching Effectiveness* study conducted by IBE. It revealed that parents of older primary school students, similarly to parents of six and seven-year olds, find relations with their children's class tutors acceptable - 95% fully satisfied (graph 3.11). Lower percentage of parents declared that contact with their child's other teachers rewarding.

**Graph 3.11. Parents' satisfaction with relations with their children's class tutors and other teachers.**




*Source: IBE calculations from the School Determinants of Teaching Effectiveness study.*

According to educational law, parents and teachers should be partners with rights and obligations. Their cooperation should be based on mutual trust, acceptance and reliable information. The Minister for National Education introduced legislation on the 3 October 2009 regulating pedagogical supervision (Journal of Laws 2009 No. 168, item 1324) and introducing requirements for schools and educational establishments and including a requirement subject to evaluation: "Parents are partners for school/preschool. The school/preschool obtains and uses parents' opinions about its activities. The school/preschool supports parents in bringing up their children. Parents take part in the school/preschool decision-making process and activities". It is worth noticing here that since this regulation was implemented, data resulting from the external evaluation of schools have been subject to various analyses. For example, Jakub Kołodziejczyk (2011) describes the results of an external evaluation conducted from November 2009 to June 2010 in 47 schools across all levels of education[29]. The analysis revealed a discrepancy between opinions of school principals and teachers and of parents concerning parental participation in the school decision making process; 100% of principals and 95% of teachers claimed that parents took part in decisions concerning school life, whereas the proportion of parents expressing the same opinion was only 27% (Kołodziejczyk, 2011). To-date analysis of evaluation results show the narrowly defined arena for parental influence is in reality limited to legal rights to "express opinion" and to perform "supporting" functions during school events (Kołodziejczyk, Walczak and Kasprzak, 2012).

In another analysis of evaluation reports, Iwona Starypan (2012) shows that at every level of Polish education the emphasis is placed on one-way communication with parents, i.e., informing them rather than offering information exchange or dialogue serving the parent-school partnership. Parents' opinions can influence various areas of school life, as permitted by the law on education, but their contribution to decision making is very restricted. The higher the education level, the fewer the opportunities created by schools for parents to express their opinions on school issues (Starypan, 2012).

The comparison of results showing a high level of parental satisfaction with their relations with teachers and results also showing parents' feeling that their involvement with the school decision making process is limited, particularly to organisational matters, suggests that the parent-teacher arena still remains a challenge for Polish schools. Even though in many schools the situation is good, parents still have trouble considering themselves as partners in their relations with school

[29] Analysis conducted as part of pilot research within the framework of the programme for strengthening quality and effectiveness of pedagogical supervision system – 2nd stage.

employees. Of course, a lack of teacher willingness to include parents into school life may not be the only reason. Parents themselves may also be unwilling to take responsibility for important school matters and actively become involved with school life. Greater parental engagement with education and decision making, could become an important step towards building parental authority and teachers' social prestige. It may also positively influence development of the local community and reveal a great social capital within Polish society (Mendel, 2007). Therefore, the benefits of parent-teacher partnership seem invaluable.

The question about general opinion about teachers is also a question of their public image. It seems that how teachers are perceived by others, especially by students and their parents, has a considerable influence on the prestige of the teaching profession and, in consequence, on teacher job satisfaction. Moreover, mutual attitude of teachers, students and parents significantly influences everyday school work. Good relations between teachers, students and their parents may become a factor supporting students' quality of learning, creating a uniform educational strategy at home and school, creating citizenship within the school. Despite the fact that public opinion rates the teaching profession among the top prestige occupations, teachers rarely agree with this general statement. This may result partly from the fact that young people are more critical towards school and teachers than children. Students negatively assess teachers' social skills, therefore, in order to build mutually satisfactory relations teachers should focus on developing in this area of their competencies. Majority of parents positively evaluate their contact with teachers, but they still do not feel like partners with the school in decisions concerning their own children's education. Therefore, there is a lot to be achieved in parent-teacher relations in order to render schools more parent-friendly, especially to those willing to actively engage in life of the school, work together towards the school's success, take part in deciding the important issues, but also to parents who wish to limit their involvement to contact with their child's form teacher.

.

# 4. The school as workplace

Autors:
*Kamila Hernik*
*Karolina Malinowska*
*Magdalena Smak*
*Dominika Walczak*
*Andrzej Wichrowski*

This chapter presents data describing school as the workplace, covering interpersonal relations between teaching staff, how teachers work together and the role of the principal in creating the general atmosphere. We also describe school equipment, especially the classroom and staffroom, both in terms of traditional office supplies, such as chalk or paper and modern equipment used in teaching, such as the computer, printer, multimedia projector, interactive whiteboard and Internet access at school. It seems that the availability of school office supplies and modern equipment, for IT in particular, is now significant in the teacher's work. Working conditions, therefore, impact the quality of teachers' work. For teachers, both working conditions and relations between teaching staff significantly influence their choice of school or home location to perform their individual work, which is understood as lesson preparation, assessment of student work or maintenance of school records. In the final section of the chapter, teachers reports concerning their working time was analysed, taking account of differentiating factors, such as grade of professional promotion or subject taught.

## 4.1. Relations between teaching staff

The two most important factors influencing job satisfaction are workplace atmosphere and relations with colleagues and superiors. To present the complex issue of teaching staff relations, the positive dimensions of these relations were analysed, setting cooperation or mutual support against the symptoms of negative impact: hostility, aggression, distance and mobbing. Information on relations between teaching staff was obtained from a qualitative study on novice teachers, TALIS 2013, TEDS-M, in the *Time and Working Conditions of Teachers* study and the study of Polish teachers' psycho-social working conditions (Pyżalski and Merecz, 2010).

### 4.1.1. The role of work relationships in novice adaptation to teaching

Induction of novice teachers to their profession at school is an important consideration for relationships between school staff. In contemporary human resources literature, integration and establishment of interpersonal relations between recently employed and the rest of staff is emphasised. Communication skills have become an integral to any employee's professional competencies. A person starting a new job is usually open and willing to cooperate. This situation should be capitalised on at the earliest stage to build positive attitudes towards work and colleagues (Rostkowski and Sienkiewicz, 2003). A friendly atmosphere and willing help from other employees during initial contact can relieve many of the unpleasant aspects of starting a new job (Armstrong, 2005).

As the qualitative study of novice teachers showed (Walczak, 2012), they usually described the school atmosphere as positive or sometimes even resembling family. According to novice teachers, the school atmosphere was mostly influenced by the following factors: school management style, the principal's personality and attitudes (qualities appreciated as influencing school atmosphere included openness, warmth, kindness, optimism, straightforwardness, understanding, resolve and attentiveness); and relations between the teaching staff and the level of cooperation between teachers. They associated bad school atmosphere with doubts about job security, lack of support from colleagues, poor communication or poor relationships with other teachers. These poor relationships were understood as entirely formal, not integrated, driven by conflicts of interest, unhealthy competition, envy and isolation of teachers who threaten the status quo, teachers demonstrating their superiority and lack of mutual trust. The fact that most novice teachers were willing to endure a lot to keep their jobs, deserves mention.

In schools where novice teachers enjoyed a good atmosphere (the majority of educational establishments), they also experienced support and relative openness from other teaching staff. Differences were noted, relating to time taken to adapt (observing, approaching) and to demonstrate initiative (usually on the part of novice teachers rather than teaching staff). Adaptation was more efficient in smaller schools where the relationships were established earlier and often exceeded a purely professional character (Walczak, 2012).

Schools not governed by local authorities stood out in terms of quality. Non-public schools tend to be smaller with relatively fewer teachers. Managing small groups can, therefore, take different forms than in public schools, especially the larger ones. Moreover, qualitative reports (Smak, in preparation) suggest that non-public school founding bodies act as a support institution for principals, beyond budgeting and auditing records. There are also different styles of collaboration between those involved in education: the principal, school governing body and parents. More trust between these partners results from shared values and visions of the school mission and objectives. In the non-public schools there is a demonstrable self-selection both by families enrolling their children in such schools and teachers (interest in Catholic schools or charter schools is expressed by different groups), therefore, they are more prone to homogeneity than public schools, with greater intake and more broadly varied backgrounds (both economically and in terms of value systems).

In some schools, where the atmosphere was described as neutral or appropriate, some novice teachers had problems applying innovative solutions, displaying "excessive zeal" (according to senior teachers). They were treated by senior colleagues as competition, "overachievers".

In most schools, novice teachers regarded the atmosphere as friendly and judged staff-room relations as based on mutual respect, acceptance and sympathy. Teachers' engagement and approaches to their profession were similar, the principal was demanding, open to communication and rewarded initiative. Difficult situations perceived as unacceptable were rare, in which other teachers of the same subject ignored novices and in the most extreme cases, all contact was avoided, including eye contact.

Initial contacts between a novice teacher and the rest of the school were usually mediated by the principal. Almost all principals were perceived as very busy with many various responsibilities and engaged with school life at many levels. In most cases, respondents demonstrated positive or neutral attitudes towards their superiors and described their contact as adequate. All these interactions were dominated by distance, which was perceived positively by novice teachers as fitting the nature of their relationship (subordination, dependence). Despite this distance, some principals were described as interested, open, supportive, taking the initiative, friendly, constructive, trustworthy, human, nice, kind and warm. A small number of principals were described as: commanding respect, judgemental, formal and reprimanding of those who were patronising. In most cases, novice teachers understood that their principals did not have enough time to meet all their expectations. Therefore, teachers tried only to communicate with their principals in difficult cases requiring decision-making power and dealt with other doubts themselves or discussed them with more senior colleagues (Walczak, 2012).

### 4.1.2. Cooperation between teaching staff

According to many studies, cooperation between teachers, including exchange of teaching materials, working on common curriculum, discussion about the learning development of individual students and other educational joint activities with teachers from the same school constitute a very important aspect of teaching (Ying, 2007; Goddard and Moran Tschannen, 2007, Wei et al., 2009, after: OECD, 2013). It was also demonstrated that cooperation between teaching staff can support a reflexive attitude among teachers, which in turn provides a fertile ground for professional development and a foundation for constant skill development (TSE, 2007; Harris, 2002 after OECD, 2013). According to novice teachers, most engaged with the work of teaching teams and evaluated

their activities positively. For novice teachers, at the beginning of their career, teaching teams were sometimes an anchorage point in an unfamiliar reality, a source for common talking points, a bridge between them and the rest of the teaching staff, an opportunity to ask questions, gain experience, achieve ambitions and gain their colleagues' trust. This provided the space for them to take the initiative and engage. Only a few respondents evaluated teams as artificial or another impediment to their work or treated these meetings as pure formality.

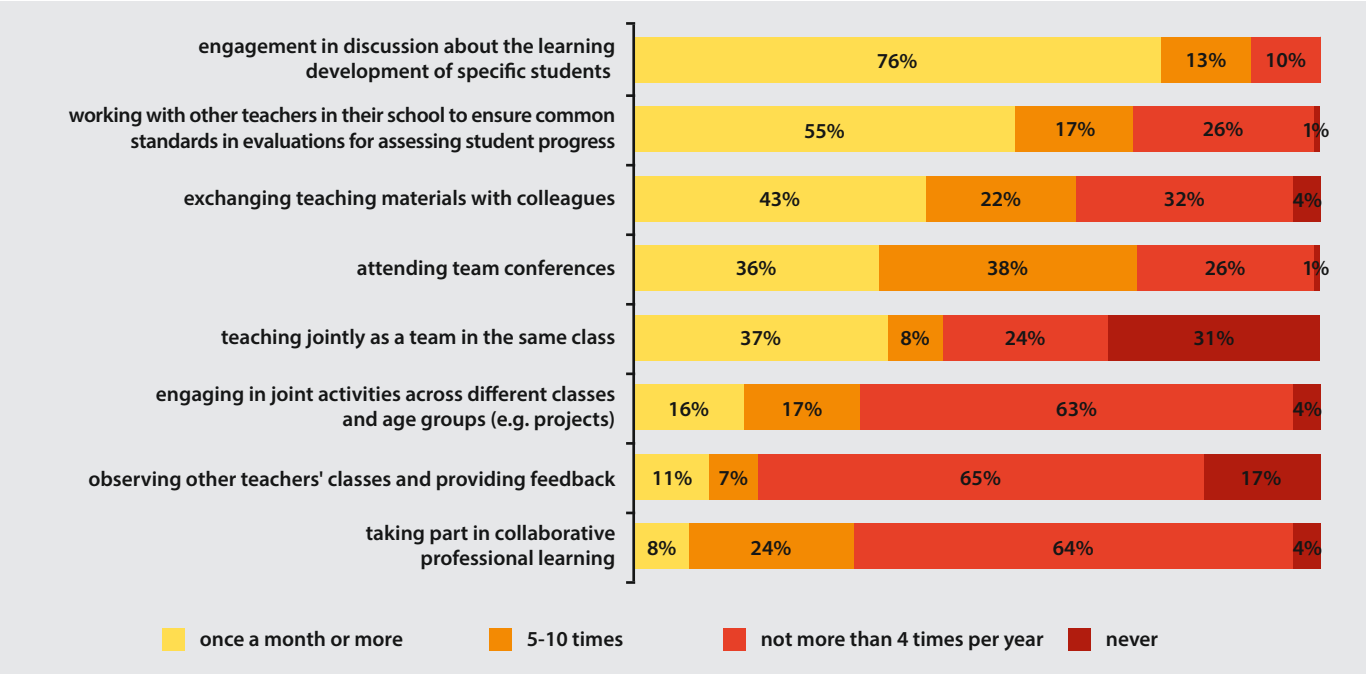
Self-reported, teaching staff relations provided by teachers are included in TALIS 2013 report according to level of seniority. The authors assumed that cooperation between teachers was especially important to relations between teachers, contributing significant support to the performance of daily responsibilities and towards their professional development. The scale used to asses collaboration in the study was created on the basis of reported frequencies of the following school activities:

- teaching jointly as a team in the same class,
- observing other teachers' classes and providing feedback,
- engaging in joint activities across different classes and age groups (e.g. projects),
- exchanging teaching materials with colleagues,
- engagement in discussion about the learning development of specific students,
- working with other teachers in their school to ensure common standards in evaluations for assessing student progress,
- attending team conferences,
- taking part in collaborative professional learning.

This chapter refers to both teacher differentiation in terms of collaboration as measured on the scale and responses to individual statements concerning teacher relations (graph 4.1).

The most frequent type of cooperation reported by teachers (graph 4.1) was engagement in discussion about the learning development of specific students - up to three quarters discussed these matters with other teachers at least once a month. Women held these discussions more frequently (once a month or more - 79%) than men (62%); and mathematics (82%) and Polish language (81%) teachers more often than other subject teachers. Also other forms of collaboration and mutual support, such as working with other teachers in the school to ensure common standards in evaluations for assessing student progress, and exchanging teaching materials with colleagues, were mentioned more frequently by women than men and by mathematics and Polish language teachers than other subject teachers.

**Graph 4.1. Frequency of collaboration between Polish lower secondary school teachers.**




*Source: IBE calculations from TALIS 2013.*

Teaching jointly as a team in the same class was a rare form of teacher collaboration - one third of teachers had never tried it and one third taught jointly once a month or more frequently. PE teachers taught in this way most often - half reported this form of cooperation at least once a month. This may be encouraged by joint participation of students from two or more units in team sports or the need to teach two groups together in the same gymnasium. Other subject teachers choose this form of collaboration much less frequently.

As was expected, observing other teachers' classes and providing feedback was more popular among the less experienced teachers (up to 5 years of teaching experience) and they reported it most frequently. Feedback on the methods they used to conduct lessons proved especially important to novice teachers, it is a significant type of support at the beginning of their career and is a major part of their professional development and obtaining professional promotion grades.

Collaborative professional learning was engaged in 4 times a year or less. Such a frequency of participation in group organised professional development seems entirely natural and accords with the activity, since it would be difficult to envisage participation in training on daily basis.

Comparison of primary, lower and upper secondary school teachers' reports revealed that their answers to collaboration-related questions were very similar, although there were some minor differences. Primary school teachers reported engagement with all types of collaboration more often than their colleagues in upper secondary schools and a little more than in lower secondary school. It seems that early education favours in-school cooperation, partly due to the fact that students attend primary schools for the longest period of time.

Teacher cooperation can take different forms - collaborative lesson preparation, joint teaching, engaging in joint educational projects, mutual support for career advancement. In some countries it is obligatory and this is covered by legislation. In other countries it is grounded in schools' organisational culture. The TALIS 2013 results showed that collaboration between teachers positively influenced the quality of work, but no leading forms of collaboration stood out and it is difficult to estimate from this which might be more effective. Analysis of different patterns suggests that cooperation should be consistent with the system for education, training and evaluation of teachers. In some countries, such as Denmark, the education system expects some subjects to be taught jointly by two teachers. The idea there, is to demonstrate interdisciplinary cooperation to students

and provide exposure to different ways of working. Such solutions allow a breaking from the school routine for teachers and students alike.

The 2008 TEDS-M study on mathematics teachers revealed various potential areas for teachers to work together. The most frequent issues approached were behavioural: 80% of teachers declared that they sought advice from other teachers concerning solutions to different student behavioural problems several times a month. Teachers collaborated less frequently in terms of designing tests or teaching jointly n one class - 40% of teachers reported that they had not attempted this form of cooperation.

For comparison purposes, Polish teachers were grouped according to their reported level of collaboration. It was aimed at revealing which teachers had a more collaborative approach and which were less willing to cooperate with their colleagues. Three groups of equal size were distinguished based on the collaboration scale from TALIS 2013. Teachers were grouped as low, medium or high according to how they reported their collaboration on the scale. Comparison revealed that teachers in any of these three groups were quite similar in terms of gender, age, education level, professional promotion grade, years of experience or subject taught. This similarity may suggest that willingness to cooperate with other teachers might not be determined by socio-demographic variables, subject or level of professional promotion grade, but may rather be combined with specific attitude. Teachers in the group with high scores on the scale were more frequently satisfied with their work than teachers from the two other groups were (table 4.1).

**Tabela 4.1. Teachers' job satisfaction according to the three groups on the collaboration scale.**

| "All in all, I am satisfied with my job" | low scores the collaboration | medium scores on the collaboration | high scores on the collaboration |
|---|---|---|---|
| I strongly disagree | 1% | 1% | 1% |
| I disagree | 8% | 7% | 4% |
| I agree | 73% | 72% | 67% |
| I strongly agree | 17% | 19% | 27% |

*Source: IBE calculations from TALIS 2013.*

Teachers reporting a high level of collaboration also declared that they spent more time per week than the two other groups cooperating with students' parents or guardians (table 4.2).

**Tabela 4.2. Time spent on cooperation with students' parents according to the three groups on the collaboration scale.**

| hours spent in the previous week cooperating with students' parents/guardians | low scores on the collaboration | medium scores on the collaboration | high scores on the collaboration |
|---|---|---|---|
| 0 hours | 32% | 24% | 17% |
| 1-2 hours | 50% | 60% | 65% |
| 3-5 hours | 7% | 9% | 11% |
| 6-10 hours | 1% | 1% | 1% |

*Source: IBE calculations from TALIS 2013.*

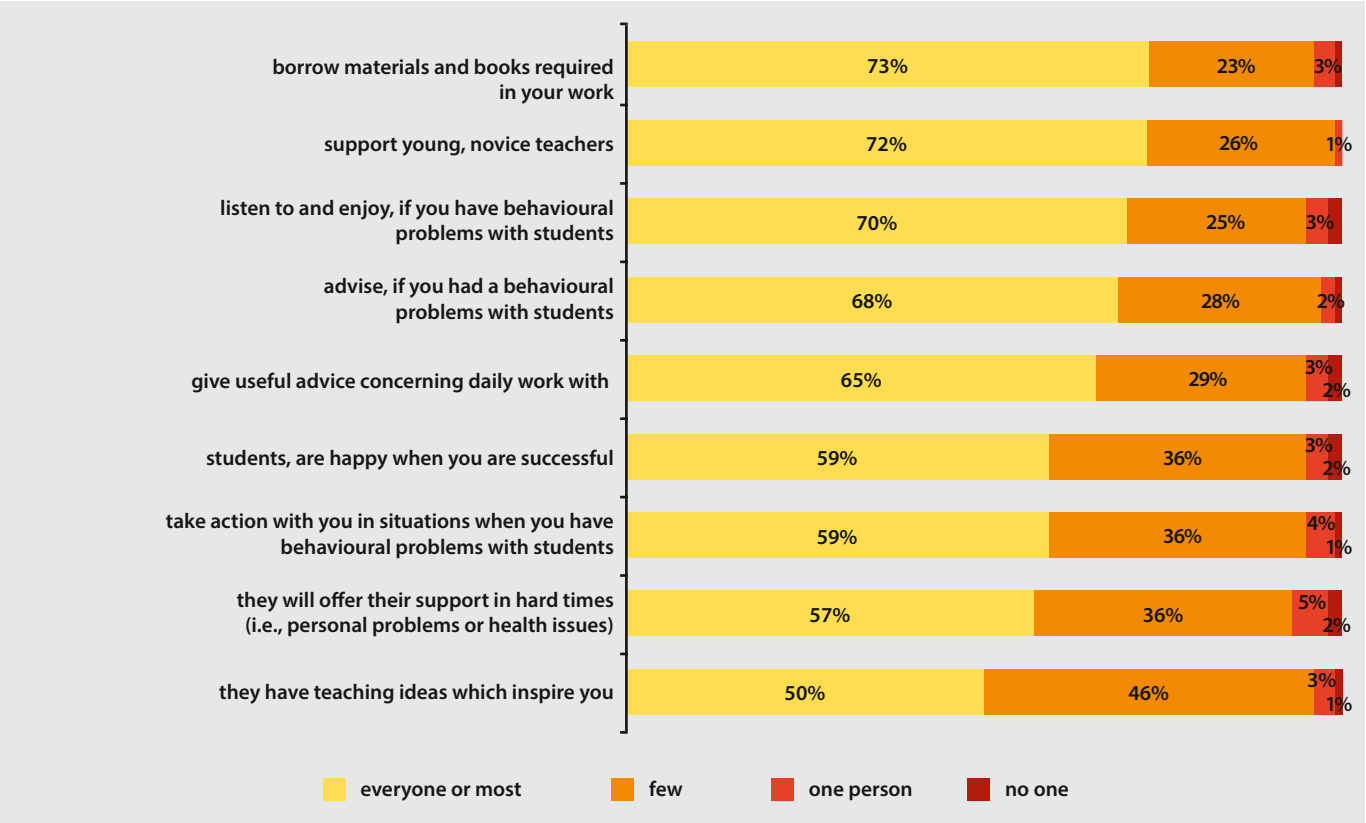
The data presented recommend an initial hypothesis that teachers willing to cooperate with their colleagues probably shared a common attitude, perhaps combined with an open outlook towards people and engagement. According to John Fischer and Jeff Taylor (2012), teachers who like their work are satisfied with their performance, have a feeling of significance, are usually more engaged and achieve better results. Positive attitude and energy allow these people to complete more tasks and objectives. It seems that openness and enthusiasm characteristic of some teachers is a decisive in both their willingness to cooperate with other teachers or students' parents and their high job satisfaction.

### 4.1.3. Teacher mutual support

In their study on psychosocial conditions of working at school, Pyżalski and Merecz (2010) asked teachers to estimate numbers of people offering them various kinds of support. The vast majority of teachers obtained their colleagues' support when they needed it (graph 4.2). They received support from at least some of their colleagues and often from most or all colleagues. Teachers gave each other advice and supported each other when they experienced behavioural problems with students. They also readily shared teaching materials.

Studies explicitly confirmed that social support played an important role in preventing occupational burnout (Sęk, 2000), therefore, relations between colleagues provide a good indicator of the psychosocial quality of working conditions. The generally accepted definition of occupational burnout includes elements such as emotional exhaustion, depersonalisation and low satisfaction with personal achievement. It is common in occupations involving certain types of contact with people (Schaufeli and Enzmann, 1998, after: Ratajczak, 2007,p. 145). According to Christina Maslach, the pioneer of burnout research, the probability of teachers' occupational burnout symptoms is high, since teaching is one of the human service professions especially vulnerable. One factor which influences the ways of dealing with occupational burnout is broadly understood to be social support. This is not support, however, obtained from any arbitrary source. Helena Sęk (1996) asserted that the non-institutional support unconnected with professional environment (e.g., family or friends) did not contribute to reducing teachers' occupational burnout. Degree of occupational burnout is significantly reduced by support from inside the workplace. For teachers, support is not only provided by colleagues and supervisors, but also students and their parents. There are also many studies which confirm that social support from colleagues and supervisors can buffer occupational burnout, so, therefore, it may not only reduce but also play a preventative role - appropriate support prevents the occurrence of occupational burnout (Sheffield, Dobbie and Carrol, 1994; Mawhinney, 2008; Shen, 2009).

**Graph 4.2. Mutual support between staff in the same school.**




*Source: Pyżalski and Merecz (2010)..*

Pyżalski and Merecz, authors of a study on Polish teachers' psycho-social working conditions (2010), created a scale based on statements concerning mutual support between staff teaching in the same school (graph 4.3) and correlated its results with occupational burnout measured using the Maslach Burnout Inventory – General Survey. This research on Polish teachers confirmed the general regularity revealed in many other studies. Support from colleagues functioned as a buffer against occupational burnout (correlation coefficient reaching 0,3, $p < 0{,}001$).

### 4.1.4. Teachers' team work

Collaboration between teachers consisting in providing mutual support or sharing teaching material may but does not necessarily mean team work. There is also a question whether cooperation between two or three subject teachers can be regarded as team work. Regardless of the precise definition, team work in Polish schools is not only desirable but also required by law. The legal foundation for task teams in Polish schools is set by the Regulation of the Minister of National Education of 21 May 2001 on the framework statutes for public preschools and public schools (Journal of Laws 2001 No. 61, item 624, as amended), Regulation of the Minister of National Education of 7 October 2009 on pedagogical supervision (Journal of Laws No. 168, item 1324) and Regulation of the Minister of National Education of 17 November 2010 on the rules of providing psychological-pedagogical assistance in public pre-schools, schools and establishments (Journal of Laws No. 228, item 1487). There should be a number of various teams functioning at schools, such as subject teams, teachers teaching the same grade, class tutor teams, task teams working on individual forms of support for students with special needs, task teams such as internal evaluation team, in-school teacher development team planning and organising training for teachers' council or certain groups of teachers, teams working on implementation of interdisciplinary or whole-school student

projects, teams preparing applications for EU support programmes or other grant offering institutions, self-education teams.

The results of the Time and Working Conditions of Teachers study show that as many as 87% of teachers work in subject teams (table 4.3). Over half (57%) work in class tutor teams and over one-third (33%) in guidance and counselling team. Teachers engage in teamwork at different intervals: from weekly meetings to meetings held several times during school year or less frequently. The average duration of a subject team meeting is 1 hour and 40 minutes, class tutor teams - 1 hour and 45 minutes and guidance and counselling team - 2 hours, regardless of how frequently these meetings take place.

**Tabela 4.3. Working in subject, class tutor and guidance and counselling teams by proportion of frequency and average one-time duration of a given activity.**

| | several times a month or more | once a month | 3-4 times per semester | once per semester or less | never | total | average duration of the activity* |
|---|---|---|---|---|---|---|---|
| working in subject teams | 17% | 33% | 31% | 6% | 13% | 100% | 1:40 |
| working in class tutor team | 10% | 20% | 20% | 7% | 43% | 100% | 1:45 |
| working in guidance and counselling team | 5% | 8% | 12% | 8% | 67% | 100% | 2:00 |

** The record shows hours and minutes of the average duration of the activity with accuracy of 5 minutes. 1:55 means 1 hour 55 minutes.*

*Source: IBE calculations from the Time and Working Conditions of Teachers study.*

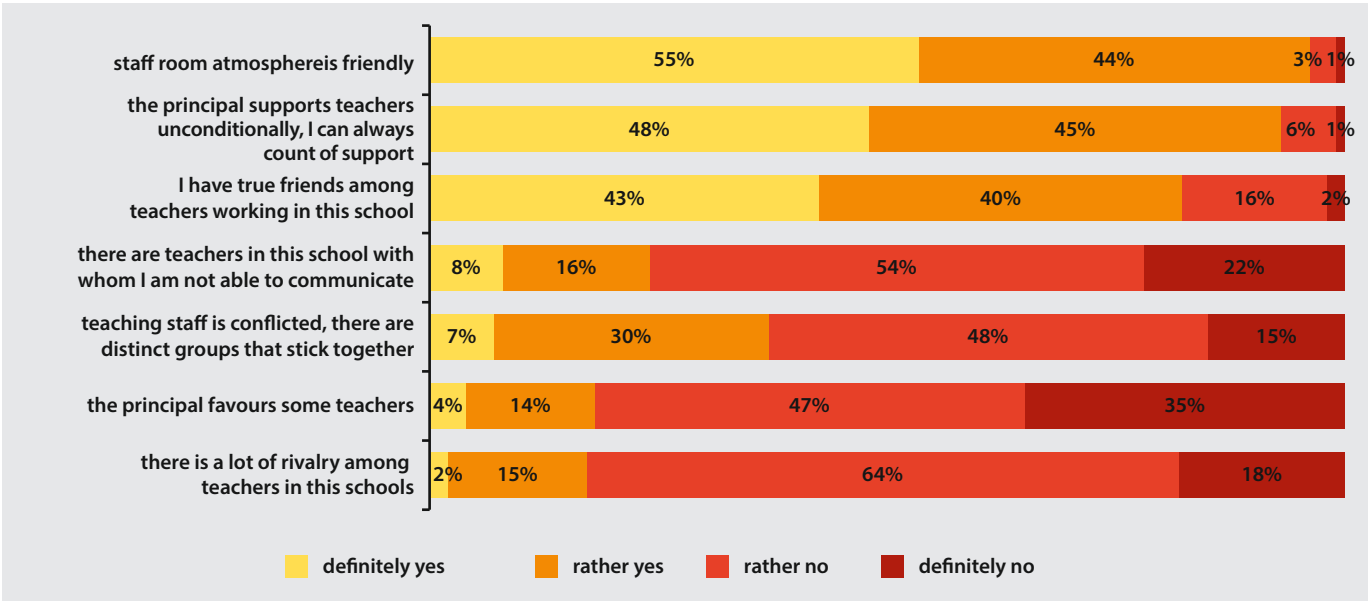
Nevertheless, it seems that in many Polish schools team work is regarded as challenging rather than the regular style of work for teachers. It is worth noting that both team and individual work can be beneficial for school but also may present problems. Psychological studies show that the common belief in greater efficiency of team work than individual work is entirely confirmed by data. Indeed, the group process creates a certain added value making the resources of knowledge and information of all members richer than simple sum of knowledge and information of individual members (Aronson, Wilson and Akert, 1997). However, group problem solving also carries numerous risks, such as social loafing, group thinking or the effect of group polarisation. For some people cooperation is helpful, but others are indifferent to it or regard it as impeding effective completion of tasks. Teachers' style of work - individual or team - should, therefore, derive from earlier diagnosis of school needs, recognition of its objectives and the benefits and risks of various styles of work. In this context, the knowledge of teaching staff and their social skills becomes very important. It was also recommended that team autonomy should be safeguarded, so that members could decide on the rules and scope of their team activity according to the needs of school and individual teachers. Team work is not only about participating in formal teacher teams but also less formal groups created in response to current needs and based on team members' motivation for joint work. Creating task teams, usually for implementing education law, seems to limit potential benefits of team work. The analysis of data gathered during external evaluations conducted from 2010 to 2013 as part of the Education Evaluation System - Education Superintendence (Kołodziejczyk, 2013) revealed that save for many highly positive aspects of such teams there is a certain disturbing trend to reduce

activities of such teams to a written summary of their operations. Reporting becomes a goal in itself. This approach seems to be natural for the purposes of documenting and assessing school performance, it may, however, create an obstacle to teamwork based on teacher interactions and mutual openness underpinning the teachers' reflective attitude rather than support reporting activities of the institution.

### 4.1.5. Atmosfera pracy w szkole

The data on school atmosphere is supplied by the *School without Violence* study from 2011 (graph 4.3).

**Graph 4.3. Teacher opinions on working in school: "How do you feel about working in this school?"**




*Source: IBE calculations from the School without Violence study.*

Teachers are satisfied with school atmosphere and their principal's support. However, situations in which the principal is not guided in his decisions by substantiated argument or favours some teachers also occur. The school is a workplace creating conditions for friendly relations between teachers - 83% of respondents declared having true friends in school, whereas only 18% responded negatively. Teachers, especially in big schools, form smaller groups - usually connected by subject - and bond professionally and socially within them. The teacher experiencing difficulties or unable to fulfil their duties receives support. A significant proportion of positive responses (over 90%) was recorded for statements: "I have an opportunity to cooperate regularly with other teachers" (91%) and "the communication between teachers is good" (89%). In the TEDS-M 2008 study teachers claimed that their schools emphasised cooperation and their responses were not significantly differentiated according to place or work or respondents' age. Despite the generally positive image of school as a workplace, 24% of respondents mentioned people on the teaching staff they found difficult to communicate with. Only 17% of teachers mentioned rivalry among their colleagues. This low level of rivalry may be caused by the legal framework regulating the profession. Professional promotion grades are obtained by every teacher who fulfils criteria required by the relevant law[30] - the number of promotions is not specified, so teachers do not have to compete with each other for promotion. This profession is least affected by market rivalry for limited resources - promotion and increase of salaries. Most teachers do not even have to compete for performance-related allowance, since in many schools it

[30] As the preliminary research among education superintendents revealed, the grade of a chartered teacher is not granted to less than 1% of applicants.

is awarded successively, almost to each teacher[31]. There are some areas where teachers could compete, for example for overtime as a major source for additional income, but it still does not render schools a workplace typified with the culture of rivalry.

### 4.1.6. Relations between teachers and principals

The respondents in the TEDS-M study were asked about their participation in school management. Most teachers (70%) believed that they influenced key decisions made in their school and which usually consisted in giving their opinions to the principal. The fact that 61% disagreed with the statement: "I don't have much say in school matters" means that almost 40% thought that their opinion is not taken into account. This pertains especially to younger teachers who felt passed over and excluded from the school management process.

In their study of psychosocial working conditions of Polish teachers, Pyżalski and Merecz (2010) analysed how teachers' perception of opportunities for support from the school principal (see table 4.4). The vast majority assessed their principal's support very highly. Over two-thirds explicitly described the principal as truly committed to work, over half decided that their principal gave them valuable advice on professional matters. There were also critical opinions. 14% of teachers reported that their principal did not support them when they experienced personal problems and that the principal assessed the quality of teacher performance fairly. 12% claimed that the principal ignored teachers' opinions. A similar proportion did not perceive their principal as someone with whom they could discuss work-related problems.

The principal's role was crucial for the school leadership and shaping its work culture. Their work style influenced the quality of their performance. There are different styles of school leadership. The authoritarian style assumes maintaining the distance between the principal and teachers, who are expected to comply with their superior's instructions (Michalak, 2000). There is also a democratic style assuming cooperation between the principal and teachers. The third style mentioned by sources is a so called diffused leadership (Bolden, 2011; Spillane, 2011) founded in the idea that leadership is spread amongst a team of people who take the leadership responsibilities. This leadership style allows a greater possibility to release teachers' potential, to stimulate their development and strengthen their sense of responsibility. Principals' activities foster conditions for collaboration, cooperative learning, modification of thinking and action.

**Tabela 4.4. opinions about the support received from the school principal.**

| The principal of your school is a person: | false | rather false | rather true | true |
|---|---|---|---|---|
| who supports teacher when they have personal problems | 3% | 11% | 33% | 54% |
| who assesses the quality of teacher performance fairly | 3% | 11% | 40% | 45% |
| who takes teachers' opinions into account | 2% | 10% | 38% | 50% |
| with whom you can discuss work-related problems | 3% | 8% | 32% | 57% |
| who organises teachers' work effectively | 2% | 8% | 35% | 55% |

[31] The analysis of the data from Educational Information System showed that performance allowance is a common element of teachers' salary. In only 7% of schools included in the analysis none of the teachers received performance allowance. In 15% - less than a quarter of teachers. in 25% - less than half. In half of schools three-quarters of teachers receive performance allowance, in every fourth school - 89% of teachers or more and in 8% of schools all teachers.

| The principal of your school is a person: | false | rather false | rather true | true |
|---|---|---|---|---|
| who gives valuable advice on professional matters | 1% | 7% | 34% | 57% |
| who adjusts in-school professional development | 2% | 7% | 33% | 58% |
| to teachers' needs | 2% | 7% | 35% | 55% |
| who provides school with adequate equipment | 1% | 6% | 36% | 56% |
| who is truly committed to their work | 1% | 5% | 26% | 68% |

*Source: Pyżalski and Merecz (2010).*

### 4.1.7. Mobbing among teaching staff

Although in the eyes of many teachers, relations between teaching staff in their school are very good, sometimes difficult situations also occur. In this context, it is important to note the issue of school mobbing. Even though it can pose serious problems in a workplace, it is not a popular research subject. Mobbing is understood here as repeated acts of hostile behaviour of a person or a group of people occurring over a significant time period, infringing upon the dignity, or the physical or psychical integrity of a person, making their work difficult or impossible (Hirigoyen, 2003). Mobbing should not be confused with other negative situation in a workplace. It is the same as conflict (natural when a group of people work together), individual acts of aggression (mobbing is a persistent harassment), management requirements and instructions (mobbing assumes their incompatibility with the institution's interest), discrimination or work stress (which occurs when the employee is not fit for the position).

The European Foundation for the Improvement of Working and Living Conditions (Eurofound) monitoring this phenomenon, reveals that the proportion of people experiencing mobbing is from 3 to 17%, depending on a country (Parent-Thirion, Fernández Macías, Hurley, Vermeylen, 2007), the Polish average is 3%, but there are occupations more exposed to mobbing. The teaching profession belongs to occupations at higher risk, along with health care, hotel and restaurant business and transportation sector (Leyman, 1996). Mobbing occurs in schools for young people as well as in the academic milieu, where it usually affects trainees, doctoral students and teaching assistants (Richman et al., 1999). Teachers constitute around 30% of people complaining to anti-mobbing associations (Ojrzyńska, 2004). According to Warszewska-Makuch (2008) , this could be explained by the principal's leadership style, increasing fluctuations of demand for teachers (resulting from more and less numerous classes entering to schools), problems with finding work during the school year, envy, increasing one's value by humiliating others.

The studies reveal that 10% of Polish teachers experienced mobbing (Warszewska-Makuch, 2008) and as many as 54% experienced hostile behaviour (Mościcka and Drabek, 2010). The victims of harassment have a high level of anxiety, low self-esteem and oversensitivity. The majority (80% of cases) of perpetrators were supervisors, half - co-workers. The average time of mobbing behaviour was estimated to be over three years (Warszewska-Makuch, 2008)[32]. The measured behaviour included: spreading rumour, discrediting competencies, becoming the object of pranks and gossip, withholding important information, constant criticism of work and effort, charging with impossible tasks or expecting unrealistic deadlines, threats. Such harassment may result in negative perception of a workplace, reduce effectiveness at work, increase the number of mistakes, fear and anxiety, leading to socially unaccepted behaviour such as anger or aggression (Smith, Glazer, Ruiz and Gallo, 2004). Consequences for individuals include: emotional, psychological and psychosomatic disorders (headaches, migraines, gastrointestinal ulcers, sleep disorders).

[32] The paper presented the findings of the study of mobbing on 1098 of Polish teachers, i.e., it characterised the phenomenon of mobbing and the indicator of victims was estimated.

Although studies analysed earlier suggested that most teachers had a sense of support and enjoyed positive relations, it does not follow that all of them are satisfied with their work or that there is no reprehensible behaviour. Despite the higher exposure of teachers to mobbing (10% compared to general 3% of all employees), it is rarely addressed, schools and their leaders are not prepared to deal with this problem.

In general, the research show that in the majority of Polish schools teachers are satisfied with the atmosphere, cooperate with each other and support each other in upbringing or subject-related issues. Therefore, it seems that relations with colleagues and supervisors are not the main stressors in teachers' work. According to teachers, these are rather burdens connected with organisation of the education system, including low salaries, curriculum and plan overload and misbehaviour of students (Pyżalski and Merecz, 2010).

Research has shown that cooperation between teaching staff supported reflexive attitude among teachers. It was also demonstrated that such attitude was beneficial for individuals (it prevents occupational burnout and favours greater job satisfaction), but also for students who become beneficiaries of the cooperation culture among teachers - students of cooperative teachers have better scores and such teachers meet with parents more frequently. The most popular cooperation subjects are behavioural issues and assessment standards. Observing other teachers' classes or joint teaching is less frequent.

In many contemporary companies and institutions the focus is on team work and it also becomes important in schools. The principal, as a specialist in managing such establishments and eliciting talents from their teachers and students, should distribute tasks accordingly among people who would become more efficient as a result of their cooperation, but should not impose cooperation on people who work more effectively on their own. There seems to be a common belief that group work leads to better results than individual efforts, whereas many psychological studies demonstrated that both have advantages and disadvantages. The key to effective leadership is to adjust work style to the type of tasks, the phase of group development and competencies of individual employees. Motivation is key to group work and, therefore, it is not possible to oblige a group of people lacking it to cooperate effectively. For Polish schools, the challenge is rather to build attitudes supporting cooperation - cooperative atmosphere, teamwork motivation support - than mechanical arrangement of teamwork according to the letter of education law. Most teachers interviewed were satisfied with their impact on decisions concerning their schools, even though some, especially young teachers felt ignored or excluded from the decision-making process.

Despite the generally positive image of principal-teacher relations and relations between teachers it should be kept in mind that some teachers do become victims of mobbing at schools. Dealing with this relatively new problem becomes another challenge for Polish schools.

## 4.2. Teaching aids and equipment

Our daily routine is greatly influenced by the conditions in which the work is performed. Teachers' job satisfaction, whether they feel tired or discouraged, depends not only on their salaries or scope of responsibilities but to a large extent on their working conditions. In the case of teachers, the working conditions also influence their workplace, onerousness and duration of repeated activities, engagement with other tasks and, eventually, their working time. Today school's equipment and availability of office and technical facilities, especially electronic equipment, seems to play an important role in teachers' work. According to research findings, along with overload of professional responsibilities and ineffective school management, insufficient school resources are the major barriers to teacher professional achievements (Hung, Oi, Chee and Man, 2007). Moreover, the analyses within the framework of TIMSS/PIRLS study demonstrated, that school resources have impact on student performance (Konarzewski, 2012).

The data below come primarily from the study on the time and working conditions of teachers conducted by IBE (Federowicz et al., 2013) and two international studies in which Poland also participated, i.e., TALIS 2013 and TIMSS/PIRLS.

### 4.2.1. Teachers' opinions on their working conditions

Let us begin with a remark that information concerning the general level of teacher satisfaction with their working conditions gathered from different studies does not allow any firm conclusions, if only because of the varied question formulation. The study on the time and working conditions of teachers reveals teachers as very satisfied with their working conditions. They reported a high level of satisfaction both with general working conditions in school (92%) and working conditions understood more narrowly: 90% declared high or moderate satisfaction with conditions for "individual work", 95% assessed sanitary conditions and standards of cleanliness in their school as good or very good. The image of working conditions in schools according to teachers becomes less obvious when they are asked about detailed problems they face, as in TIMSS/PIRLS. Teachers pointed to lack of instructional materials and office supplies or overcrowded classes. In the former, the aggregated responses "minor problem", "moderate problem", "serious problem" was 58% compared to 40% of "not a problem" responses, in the latter - 54% perceived it as a problem compared to 44% who did not. The situation was reversed in case of work overload ("teachers have too many teaching hours") - 70% did not indicate it as a major problem and that the school building needs significant repair (55% compared to 43% who indicated it as a problem).

TALIS 2013 reveals a rather different image: lower secondary school teachers were asked about the impact of selected factors on their performance. Only 30% of teachers did not perceive poor working conditions as an issue, others pointed to minor or major inconveniences in this area. However, teachers' responses to questions concerning their feelings about their job revealed that the majority would not change to another school if it were possible (83% of I strongly disagree and I disagree) and the same proportion would recommend their school as a good place to work (84%).

In summary, it should be emphasised that such generally formulated questions do not allow firm conclusions as to whether and to what extent Polish teachers are satisfied with their working conditions in school. Various question formulations elicit various responses. Therefore, rather we should take into consideration detailed indicators as school equipment, including classrooms and staff room, as they have the actual impact on teachers' perception of their working conditions. Data on this subject can be found mainly in the *Time and Working Conditions*... study, where the working conditions refer mainly to material aspects and include traditional school equipment, such as chalk, paper and other office supplies, as well as more modern devices, such as computer, printer, overhead projector or an interactive whiteboard and internet access in the school.

### 4.2.2. Regular classroom

One classroom devoted to a specific subject where a teacher conducts his or her lessons and which is equipped with all the materials needed for teaching the subject has a great impact on the comfort of teachers' work. In the working time and conditions study, teachers stressed that sharing a classroom with other groups and teachers significantly influenced their working time. This problem arises especially when a school works in a two-shift arrangement - some classes cannot take place at the school premises so they are delivered in the open air or late in the day. If teachers deliver additional classes, for example, as their "charter hours", sometimes they are forced to have a longer break between classes and adjust to the availability of classrooms. According to teachers the "one classroom for one class" has a positive impact on the comfort of their work and saves them time (materials prepared by students or a teacher can stay in the classroom and the classroom is also

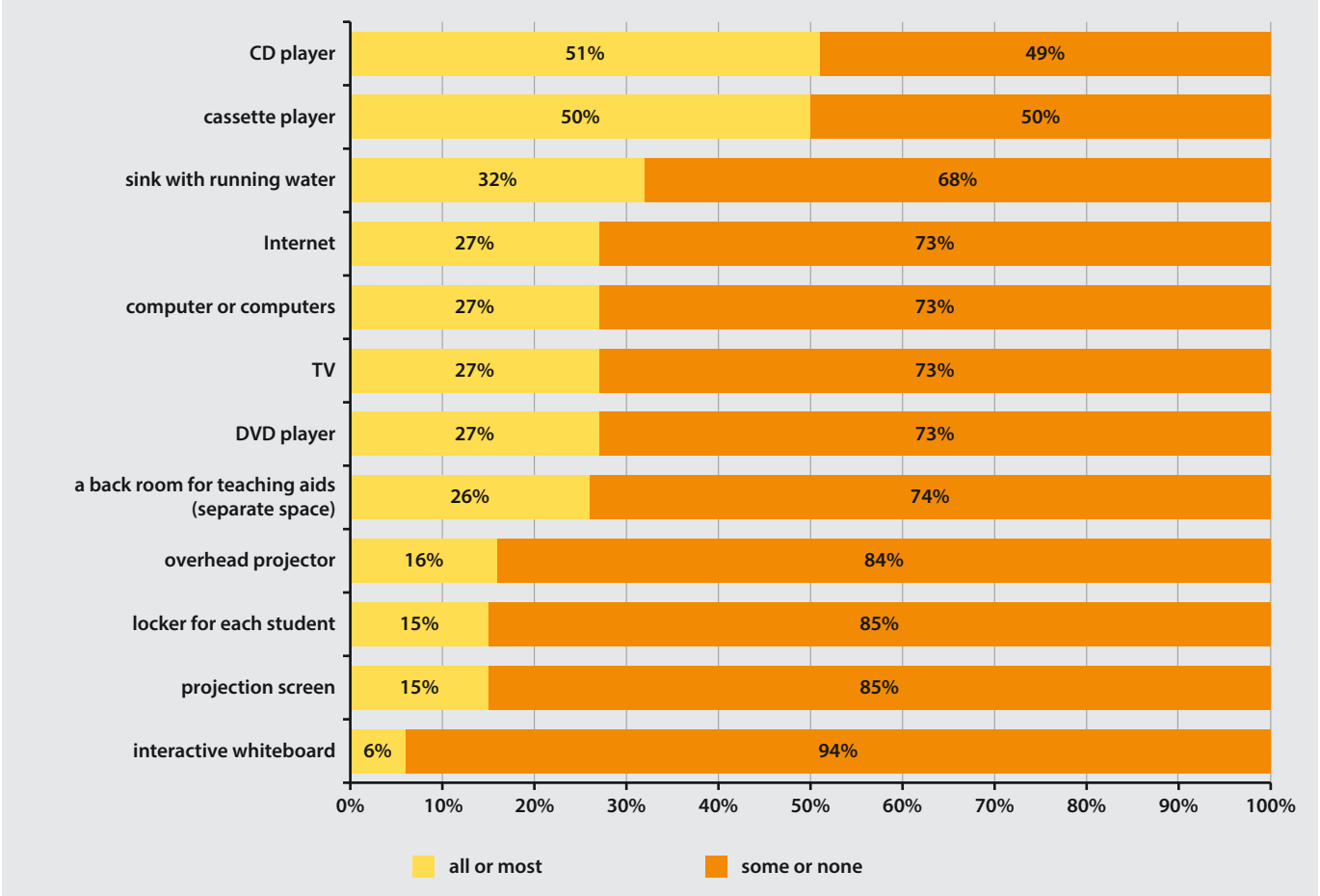
available to the teacher after class, so that they can prepare for the next day, check students' work, keep school records, etc.).

Over two-thirds of teachers declared that they usually conducted classes in a regular classroom (70%). There can be more than one regular classroom: 30% of teachers conduct their lessons only in one classroom, 20% in two classrooms, 17% in three, 11% in four and 21% in five or more classrooms. Access to a regular classroom is typical for early education (95%), PE (80%) and science (73%) teachers who need specifically equipped classrooms because of their experimental nature (Ferderowicz et al., 2013).

### 4.2.3. Classroom equipment

Classroom equipment influences not only teachers' comfort of work, but also their opportunities for conducting attractive lessons and the time they spend on certain activities. Classrooms in which teachers conduct their lessons are usually not very well equipped. Half of teachers work in classrooms with a cassette and CD player, one-third have access to a sink with running water. Access to an overhead projector and projection screen, a locker for each student or multimedia whiteboards is even less frequent (graph 4.4).

**Graph 4.4. What proportion of classes delivered by a teacher takes place in a classroom equipped in the following devices? (aggregated percentage of "all" and "most" responses; aggregated percentage of "none" and "some" responses)**

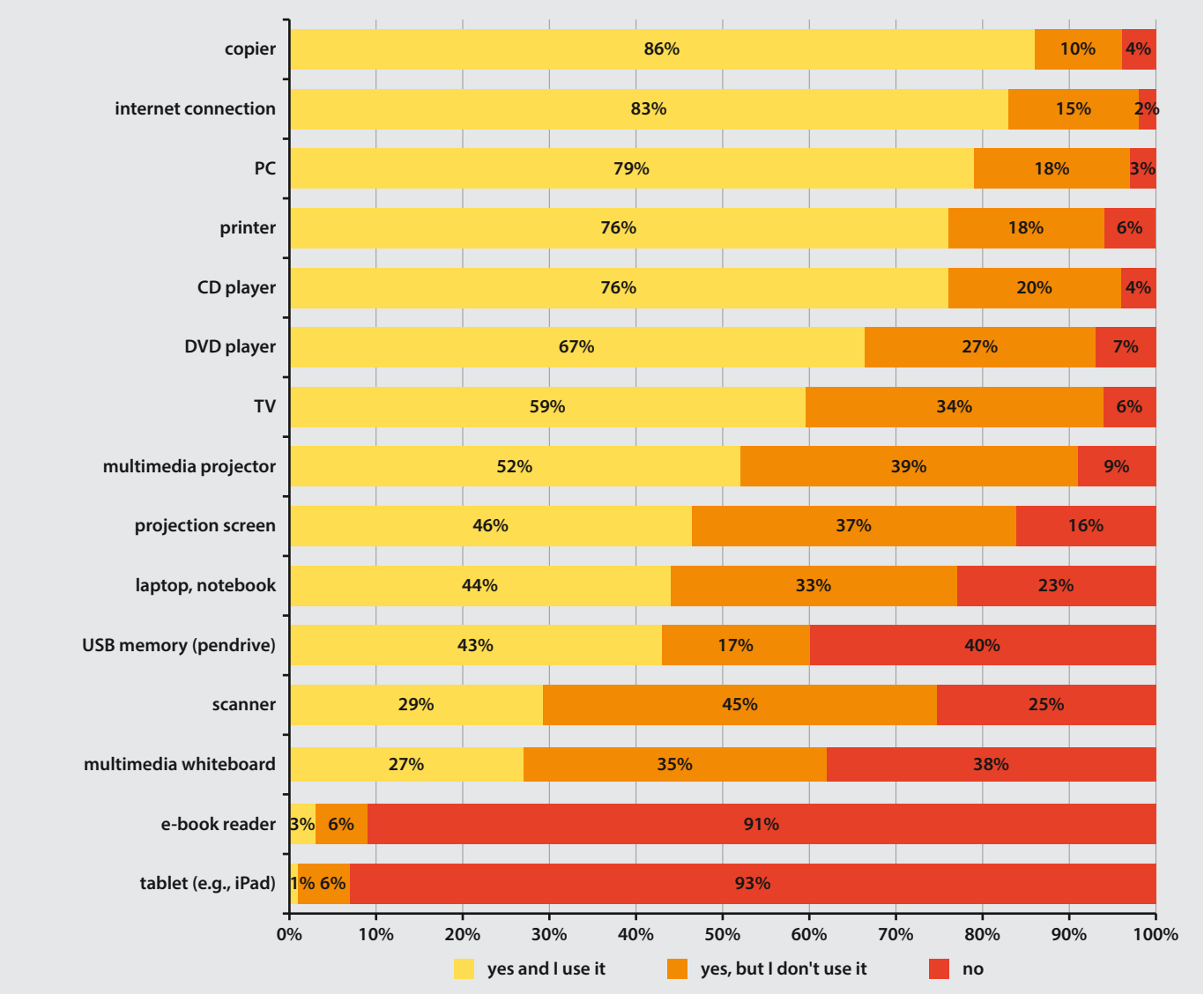



*Source: IBE calculations from the Time and Working Conditions of Teachers study.*

It should be noted that these data only show teachers' access to certain elements of classroom equipment and not school equipment as a whole, so it is true that only slightly over a quarter

of teachers have access to computer and the internet in their classrooms, but almost all (97 and 98%, respectively) have access to these facilities in the school (graph 4.5). However, multimedia access in school may be only on show and use of the facility impeded. Firstly, in some schools the use of some equipment, such as a printer, is impossible because of lacking toner/ink or paper or damage, or, if it works, there is a queue waiting to use it. As a result, teachers have to use many devices outside school, especially their own printers. Secondly, organising equipment for a lesson takes additional time. When a teacher has planned lessons with multimedia material, they have to look for and borrow equipment from other classrooms, so they have to come to work earlier or obtain it in their break. Perhaps this also explains why so many devices that teachers have access to in their schools rest unused - particularly scanners, multimedia projectors, projection screens, multimedia whiteboards, TVs or laptops/notebooks (graph 4.5). It may, therefore, result from seemingly available equipment rather than teachers' unwillingness or fear of using certain devices. In the study on psycho-social working conditions of Polish teachers, every sixth respondent agreed with the statement that "there is no access or difficult access to computers or a copier for teachers".

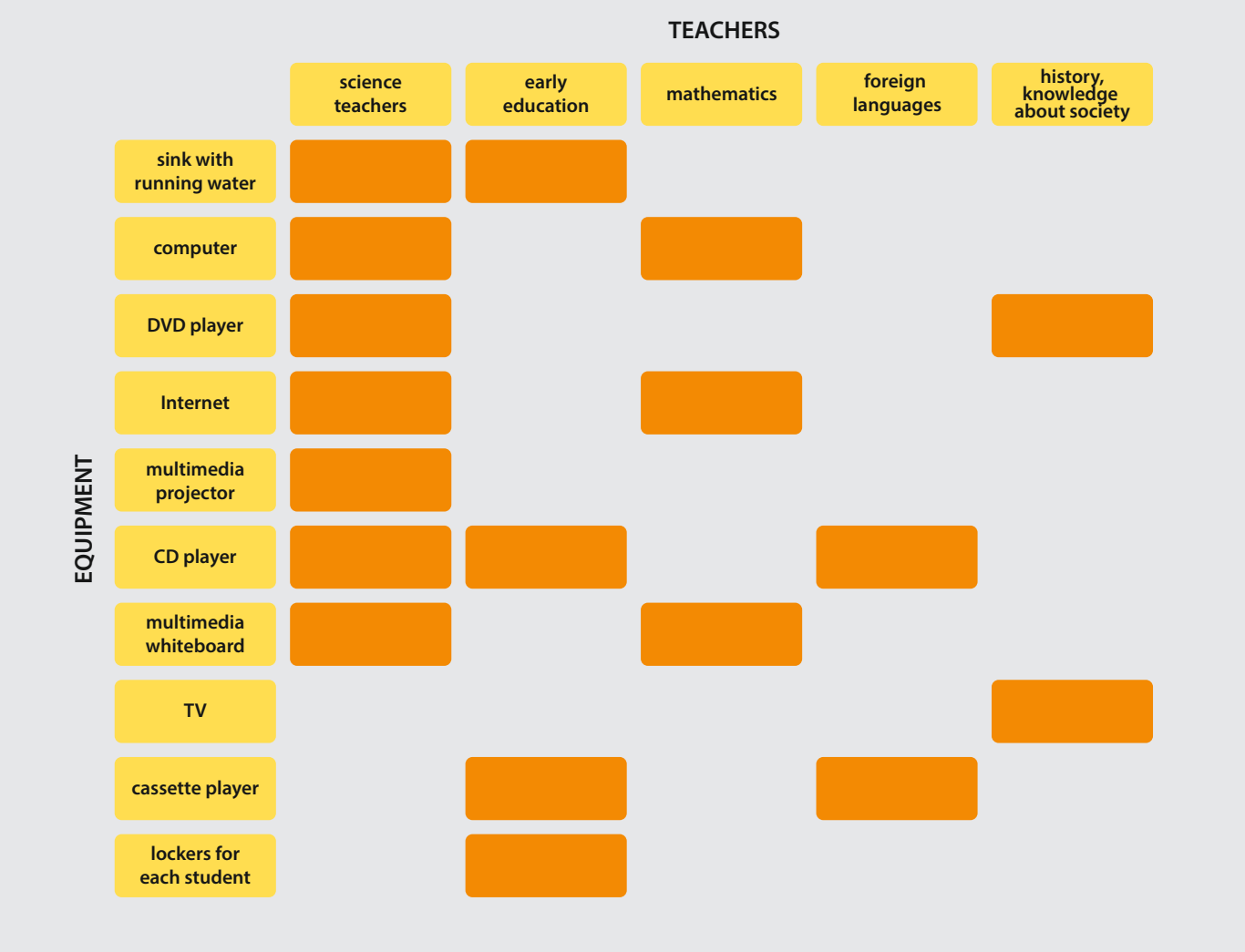
**Graph 4.5. The availability of office and IT equipment in school and its use by teachers.**




*Source: IBE calculations from the Time and Working Conditions of Teachers study.*

Based on research, we can state that schools are striving to manage their resources to respond to teachers' needs relating to the specific profile of their work. Science and mathematics teachers have relatively the widest access to various equipment, whereas history, foreign languages and early education teachers have narrower access (figure 4.1). It is worth noting that schools in urban and rural areas are not differentiated by access to most devices. In rural (mostly primary) schools, teachers have relatively better access to lockers for each student that in urban schools. The situation is the reverse in the case of certain facilities which are more frequently available at higher levels of education: DVD player, the internet, computer, TV.

**Figure 4.1. Classroom equipment by subject fields.**



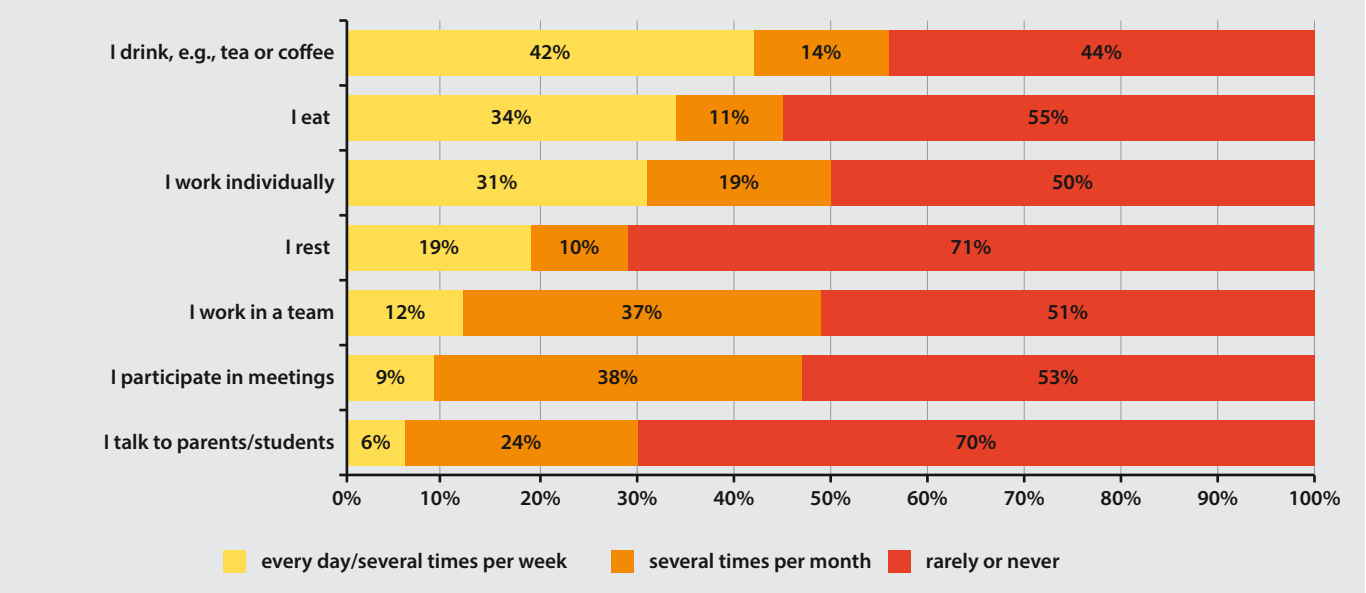

*Source: IBE calculations from the Time and Working Conditions of Teachers study.*

Another important finding from the study, partly reflecting the TIMSS/PIRLS results, is insufficient access for Polish teachers to office supplies (50%) and paper (43%). The time and working condition study results show, however, that in many cases, teachers have to organise needed materials themselves and often also pay for them themselves (Federowicz et al., 2013). In the study on psycho-social working conditions of Polish teachers, slightly over half the respondents agreed that their school lacked materials and teaching aids which they needed for their work (Pyżalski and Merecz, 2010).

### 4.2.4. Staff room

The staff room is an important element of teachers' working conditions. How it is equipped and what can be done there are important indicators of its significance. The frequency of its use would suggest that it is needed - two thirds of respondents spent time there during breaks at least once a day, only one in ten never or rarely did that. Teachers spending time in a staff room can leave their personal belongings there, use a kitchenette (88% and 82% of indications to availability of these facilities in the staff room), computer and the Internet (66%). These activities seems to illustrate its main function. Asked about the frequency of individual activities in this space, teachers mainly pointed to: drinking coffee or tea (42%) and eating (34%) as activities performed several times per week (graph 4.6). At the same time, they did not treat these activities as rest (71% declared doing this rarely or never). Moreover, the distribution of responses to this question rather shows what it is not - teachers either do not perform most of activities in the staff room or do so very rarely. Sometimes teachers manage to concentrate on their individual work, less frequently - on group work and very rarely meet with students or their parents (Federowicz et al., 2013).

**Graph 4.6. performed by teachers in the teachers' room and their frequency.**

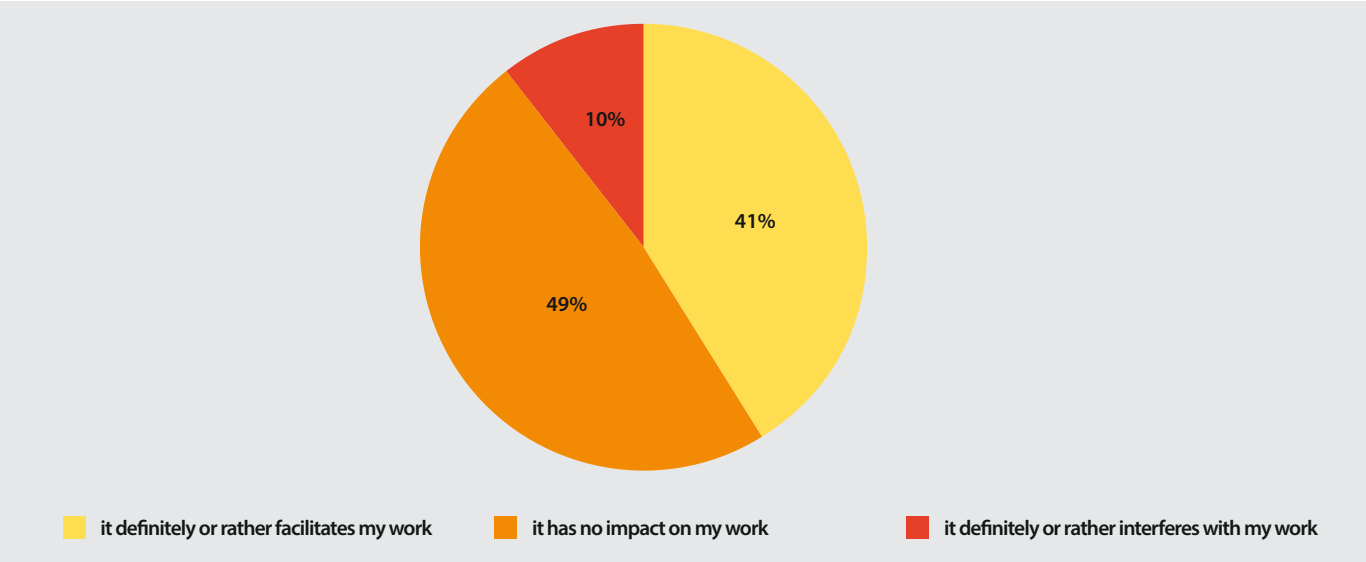



*Source: IBE calculations from the Time and Working Conditions of Teachers study.*

The time and working conditions study revealed that the problem with functionality of the teachers' room often results from its small size which impedes organisation of meetings and its poor organisation of work space (small tables, lack of chairs) which is a barrier to individual work (Federowicz et al, 2013).

This is confirmed by the findings of the study on psycho-social working conditions of Polish teachers, in which two thirds of respondents described their staff room as "not big enough for everyone to feel comfortable during breaks" (Pyżalski and Merecz, 2010). The atmosphere in the room is also significant in this context: noise, commotion, loud conversations, lack of seating and general chaos also mean lack of the conditions requisite for rest. Therefore, the main functions of the staff room are reduced to a "checkroom" or a break room mainly intended for meals and drinks, probably because it is unfit for other functions. Teachers' declarations about the usefulness of the staff room in their work confirm this - according to half of respondents it has no impact on their work (graph 4.7).

**Graph 4.7. Size and equipment of the staff room - teachers opinions.**




*Source: IBE calculations from the Time and Working Conditions of Teachers study.*

In summary, we can identify factors which result in the positive opinions of teachers about their working conditions. They primarily include classrooms equipped with multimedia devices. A modern school cannot function without such equipment. According to teachers, the main issue is to secure at least one computer with an internet connection in each classroom. It is also important that the equipment in school is installed with adequate software, so that teachers can use multimedia teaching aids prepared by publishers or their own electronic materials and save time (which would otherwise be spent on preparing materials by themselves from scratch). Another important issue is the possibility of showing materials in the classroom on a large screen (TV, projector or multimedia whiteboard). Schools are now more frequently equipped with multimedia whiteboards, but access to this form of working with students is insufficient.

From the point of view of teachers, classroom facilities such as a storeroom or a large cabinet in the classroom providing teachers with comfortable and unlimited use of teaching aids is also significant. Schools should also provide unlimited access to a computer with a printer for each teacher. Another important element is to provide teachers with unlimited access to office supplies and teaching aids and secure funding to obtain them (primarily to assure access to paper for printers and copiers, but also smaller items such as plastic sleeves, paper clips, staplers, punches, etc.).

In reality, however, the overwhelming majority of teachers have limited prospects for using such facilities. A notable shortcoming is the absence of a place for individual work in school and the functionality of the staff room. It definitely has an impact on the fact that over half (53%) teachers prefer to complete individual work at home and for only 8 %, school is a place to do that. This issue is the subject of the next section of this chapter.

## 4.3. Teachers' individual work - at home or at school?

The nature of Polish teachers' work includes the possibility to complete individual work anywhere. Individual work often requires silence and focus, an isolated place of work. Are there such places available in Polish schools? If yes, would teachers choose school or home for their individual work? Some answers may be found in the study on the time and working conditions of teachers. Quantitative and qualitative data on teachers' preferred place to complete their individual work and the way they explain it, allow for better understanding of how teachers organise their work outside obligatory teaching hours.

In Europe, teachers' working time is defined in several ways. In some countries this is by directed teaching hours and teacher's availability in school. Only in very few European countries does the teacher's employment contract only define the number of directed teaching hours. In vast majority of European countries it also includes the total teachers' working time, which is usually from 35 to 40 hours per week (Eurydice, 2012).

According to Eurydice, in 17 countries or regions the number of hours per week when a teacher should be present at school (teacher's availability) is also specified. These included: Denmark (primary schools), Belgium (Flemish Community, primary schools), Greece, Spain, Cyprus, Latvia, Luxembourg, Malta, Portugal, Great Britain (England, Wales and Northern Ireland), Finland, Sweden, Scotland, Island and Norway (Eurydice, 2012).

The required teacher availability time in school usually does not exceed 30 hours per week, except for Portugal (35 hours per week), Sweden (31), Great Britain (England, Wales and Northern Ireland: 32) and Norway (33 in primary schools, 31 in lower secondary schools)(Eurydice, 2012).

According to the OECD database, teacher availability in school is also mandated in: Australia, Brazil, Canada, Chile, Indonesia, Israel, Mexico, New Zeeland, Norway, Portugal, Spain and the USA (OECD, 2012).

In Poland, the Teachers' Charter defines the number of directed hours (weekly obligatory hours of teaching, class tutoring and care-related activities). Primary, lower and upper secondary school teachers[33] have additional responsibilities. Primary and lower secondary school teachers have to devote 2 additional hours per week to care-related activities or classes within the basic framework which are at the principal's disposal,[34] upper secondary school teachers also have to teach classes within the basic framework which are at the principal's disposal[35] but only 1 extra hour per week (Article 42 section 2 point 2 of the Teachers' Charter). In international comparisons, these hours, commonly called "charter hours", are regarded as additional statutory hours of teacher availability in school, besides directed teaching load. The low number of teaching hours in comparison with teachers in other countries and the disproportion between the total working time (40 hours per week) and teacher's availability in school have become the topic of heated public debate in Poland. Opinions concerning the necessity to introduce mandated availability to exceed "charter hours" are divided. The objective of the IBE study was to find out which place teachers prefer to complete their individual work.

The definition of "individual work" was proposed by teachers who participated in the study and relates primarily to the following activities:

- individual lesson preparation: designing the lesson idea, content preparation, collecting and developing teaching materials and tests,
- assessment of student work: evaluating their tests, notebooks,
- keeping school records (Federowicz et al., 2013).

---

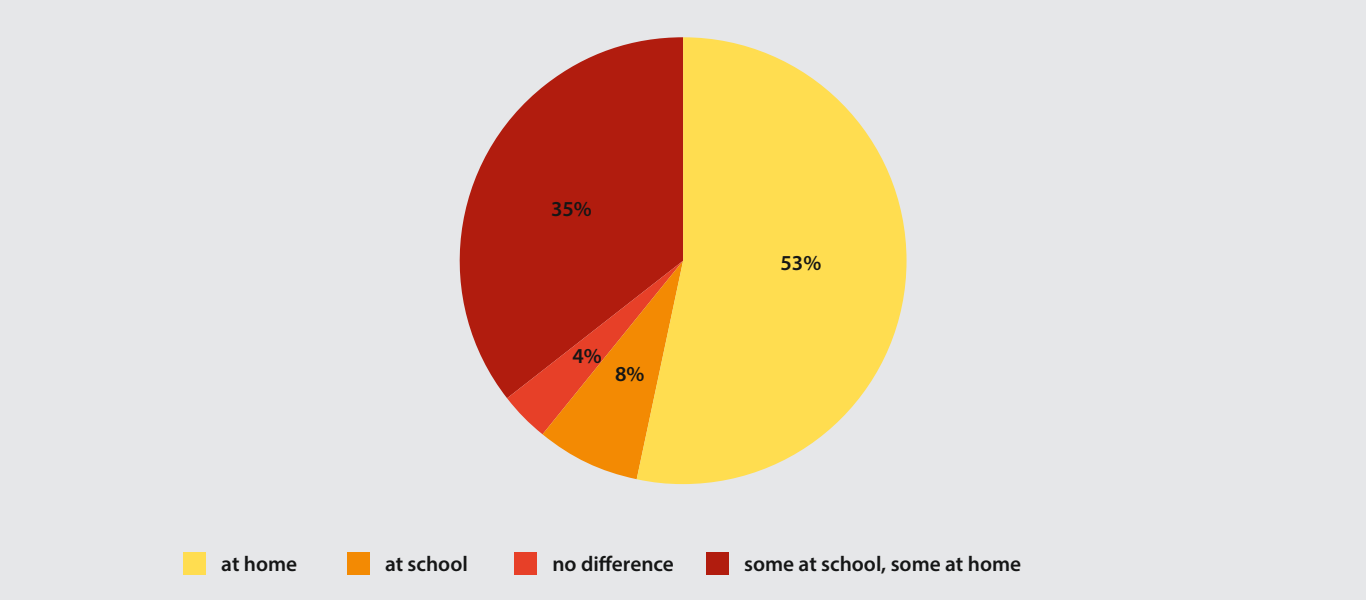
33 Including special lower secondary schools.

34 Except for hours allocated for increasing the number of obligatory lessons.

35 Except for hours allocated for increasing the number of obligatory lessons.

The majority of teachers (53%) chose home as their proffered place for "individual work" and another 35% declared that they preferred to perform some activities at home and some at school. Only 8% of teachers preferred to do individual work at school. For the remaining 4% it made no difference where they performed their individual work.

**Graph. 4.8. Preferred place for "individual work".**




*Source: IBE calculations from the Time and Working Conditions of Teachers study.*

Teachers were asked to explain their answer to a question about the preferred place for "individual work" in an open question. The most popular reasons for why they preferred to work at home were: peace and quiet, possibility to concentrate, better access to the internet, computer, printer. The respondents also indicated access to necessary materials, including a personal library and the lack of a place for individual work at school and more comfortable working conditions at home. For some teachers it was also important that at home they could work any time.

*I have a wider collection of literature concerning teaching methodology. The atmosphere at home motivates me more and gives me psychological comfort.*

*At home, I can work at night and need not be afraid that I will not manage to keep up.*

*I can focus at home, because I have my own quiet place. I can regulate my working time.*

.[Respondent statements, *Time and Working Conditions of Teachers]*

It emerged that some teachers decidedly prefer to work at home because of reasons other than classroom aesthetics, availability or quality of school computers. These teachers pointed out that after several hours of intensive teaching it is extremely difficult to concentrate on other professional activities, usually requiring a lot of intellectual effort. At home, teachers can resume their work after a moment's rest from classes (usually in the evenings, but also during weekends).
Teachers who declared that they preferred doing some work at home and some work in school explained that activities of a conceptual, creative nature, related to lesson preparation or student assessment, they require peace and quiet were better performed at home, whereas school was a better place for tasks requiring access to school records (such as school class records) or office equipment (such as copier, printer).

Reasons most often cited by teachers for preferring school as a place for individual work included: protecting family time, need for maintaining life-work balance and very good conditions for individual work in their schools, such as access to needed documentation, materials, teaching aids and office facilities.

Teachers stressed the specific nature of tasks connected with this profession. According to respondents, many of these tasks require focus, quiet and flexible planning of when to perform them. Such conditions are available at home rather than school.

Women teachers would much less frequently prefer to do individual work at school than men (women - 6%, men - 13%). The same applied to younger teachers (30 years old or younger - 11%) For comparison, only 6% of teachers aged 41-50 would choose school as a place for individual work. Also the professional promotion grade differentiated teachers' preferences - trainees were most willing to do their individual work in school (16%), whereas only 6% of chartered teachers declared the same preference.

The statistically relevant but small proportion of teachers from rural schools indicated home as the preferred place for individual work (50%). For comparison, for teachers in cities with populations higher than 500 thousand inhabitants, this proportion reached 57%.

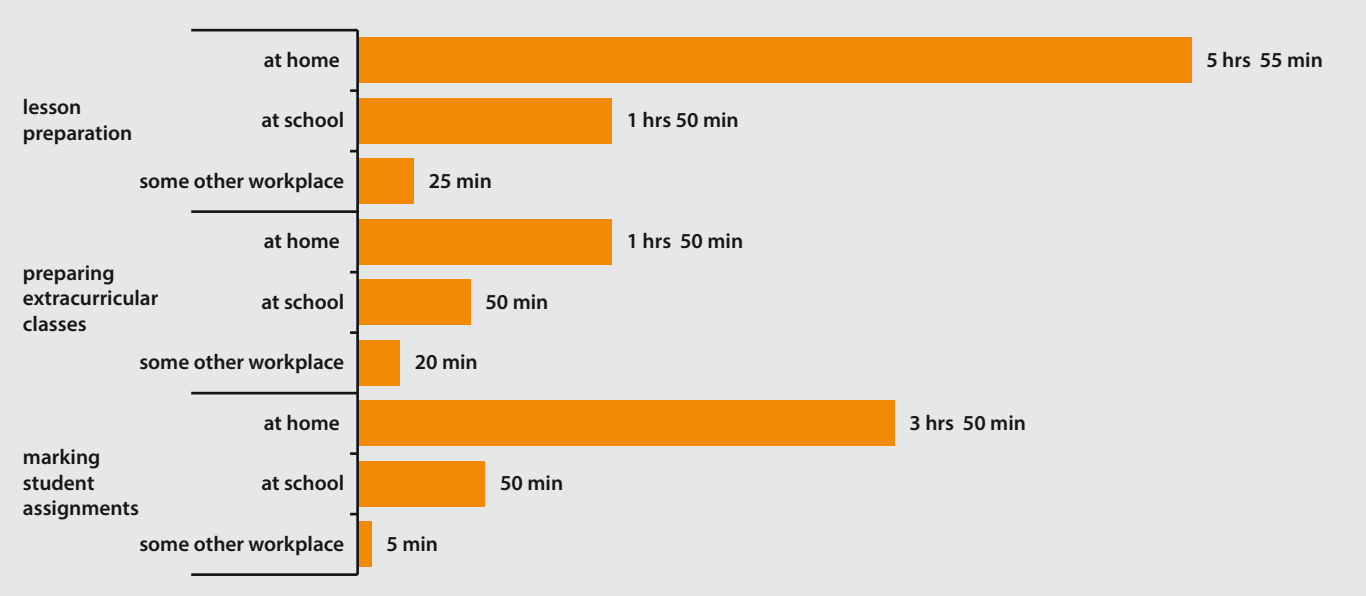
Polish language (64%) and mathematics (61%) teachers much more frequently than others preferred working at home. Taking into account the specific nature of their work, it is no surprise that only 35% PE teachers declared this preference. It is worth noting that some PE teachers also teach other subjects so they might have related their response to a question about preferred place for individual work to the other subject. Teachers of mathematics, Polish language and religion were the least willing to do their individual work in school (4% each). Primary school teachers from grades 1-3 the least frequently preferred school for individual work (5%) and lower secondary school teachers - most often (9%).

Teachers were also asked to estimate the time they spent on various tasks during a typical week by place they performed them (school, home or some other place). Similarly to preferred place for individual work, responses to this question revealed that teachers did perform most of their work at home. They spent much more time at home than in school on tasks such as: preparing lessons and extracurricular classes, marking students' assignments (graph 4.9). Teachers also spent slightly more time at home than in school on maintaining student attainment records, preparing a work plan for an individual student, timetable organisation and preparing documentation necessary for promotion.

Preference for home as a place for individual work was not tantamount to lack of general satisfaction with working conditions in school. As we showed in the previous section, studies concerning teachers' opinions on working conditions and individual work in their school revealed that almost 90% are satisfied. The situation became complicated when we asked about opportunities to use individual items of school equipment - than we learnt about the limited opportunities to perform individual work in school due to lack of adequate conditions.

The reasons declared, encouraging teachers to perform most of their work at home, included insufficient school equipment (mainly computers with access to Internet, printers) and of the lack of a quiet place for work demanding concentration. Therefore, with the aim of preparing lessons in school rather than at home the respondents proposed organising office space in school for teachers which would include computers with access to the internet, printers and copiers. Such space would include desks for teachers to perform their individual work. It would have to be separate from the teachers' room and located in a relatively quiet part of the school building, allowing concentration. It was also suggested that there should be a similar space in every classroom and that the rule of one classroom for one teacher should be observed. According to respondents, this would increase teachers' individual work in school.

**Graph 4.9. Average time in full hours spent on preparing lessons, marking student assignments and preparing extracurricular classes by place of performing the task in a typical week according to teacher declarations (for teachers working for one employer and teaching 18-27 lessons per week, n=2629).**




*Source: IBE calculations from the Time and Working Conditions of Teachers study.*

It should, however, be noted that creating such conditions for teachers could only facilitate their work and save them time on some activities. It would probably not make teachers stop or limit their work at home. The view that it was hard to perform other tasks after teaching was relatively strong among teachers. Teachers reported that they needed some rest after classes, but also that their family responsibilities did not allow them to stay longer at school.

Such a belief results in the situation where many professional tasks are performed at home. Teachers have more comfortable conditions for individual work, but it creates a risk of decreased availability of teachers at school for students, their parents, principal or other teachers. The less frequent presence of teachers at school may result in difficulties in exchanging knowledge, skills and experiences between teachers and therefore also in their teamwork. These results provoke another set of questions: what can be done to encourage teachers to work in school more frequently and willingly; how to change working conditions and relations between teaching staff to make teachers' teamwork more efficient; and finally, how to increase teachers' availability to students and their parents?

## 4.4. Teachers' working time

This subsection presents findings from two studies conducted recently in Poland which - by means of different methods - dealt with a problem of teachers' working time. The first is the *Time and Working Conditions of Teachers study* (Federowicz et al., 2013). It is one of the most significant research projects conducted recently on Polish teachers. The research consisted of three stages: The first - qualitative stage - resulted in compiling the list of teacher activities. During the second - quantitative - component teachers completed an internet survey and responded to questions about their typical working week. During the third - also quantitative - component teachers responded to interviewers' questions about their previous day. The study was conducted from December 2011 and December 2012. The second study we refer to is the *Teaching and Learning International Survey* TALIS 2013. Several questions were related to working time: teachers declared their working time in general and the time spent on particular activities during their most recent complete calendar week before the survey (conducted from March to May 2013). Presentation of their findings, in a way that

allows comparisons, requires detailed methodological analysis along the description of the second study presented.

### 4.4.1. Teacher work activities

The qualitative stage of the *Time and Working Conditions of Teachers study* resulted in a list of 55 activities performed by teachers. These activities were divided into four groups: related to teaching, other educational tasks, professional development and administrative duties. Teachers were asked in a web interview about the frequency of individual tasks. Analysis of their responses resulted in dividing these activities according to the criteria related to the number of teachers engaging in these activities and their frequency.

The first group includes activities performed by almost all teachers (at least 89%) very often (at least 83% perform them several times per month or more frequently). These are teaching-related activities, such as planning and conducting lessons, preparing and teaching extracurricular classes, marking assignments and keeping the class register, treated as administrative duties.

Another group includes activities performed by almost all teachers (at least 86%), less frequently but still quite often (performed by 54 to 78% of interviewed teachers less than once per week but more often than once per semester). These are: coaching students for competitions, working in a subject team, individual parent-teacher meetings, collecting and developing teaching materials.

The largest group of activities are undertaken by most teachers but no more than 3-4 times per semester. This group includes: chaperoning school dances, running special school events, working in class tutor teams, parent-teacher conferences, keeping the attendance register or participating in pedagogical council meetings. These are only some of activities - the full list is available in the table 4.5.

**Tabela 4.5. Teachers' professional activities by frequency and popularity.**

| | |
|---|---|
| **all or almost all, very often** | [D] teaching regular lessons<br>[D] preparing regular lessons<br>[D] teaching extracurricular classes<br>[D] preparing extracurricular classes<br>[D] marking students' assignments<br>[A] keeping class register |
| **almost all, often** | [D] coaching students for competitions<br>[W] working in a subject team<br>[W] individual parent-teacher meetings<br>[R] collecting and developing teaching materials (computer software, additional materials) |

| | |
|---|---|
| **most, moderately often** | [D] chaperoning school dances<br>[D] organising free activities on special days<br>[D] preparing and running special school events<br>[D] trips<br>[D] after-school excursions<br>[D] setting and invigilating term exams and tests<br>[D] preparing a work plan for an individual student (as part of individual teaching programme, individual course of instruction, individualised teaching)<br>[W] working in class tutor teams<br>[W] parent-teacher conferences<br>[R] attending external teacher training<br>[R] participation in conferences<br>[R] participating in teacher professional development organised in school activities<br>[A] keeping the attendance register<br>[A] writing reports<br>[A] preparing prizes and certificates<br>[A] assisting with external or internal evaluation<br>[A] pedagogical council meetings |
| **over half, rarely** | [D] supervising students during religious retreats<br>[D] assisting with external examinations (before and after)<br>[D] invigilating external exams (during exams)<br>[D] re-testing and confirmation of progress<br>[D] setting and conducting mock exams<br>[A] writing school report cards<br>[A] preparing mark tables<br>[A] preparing the curriculum<br>[A] designing assessment criteria |
| **less than half, rarely** | [W] preparation of descriptive student assessment<br>[W] pedagogical observation and measurement<br>[W] maintaining student attainment records<br>[W] documenting individual learner needs<br>[W] preparing a plan for support activities<br>[W] working in guidance and counselling team<br>[R] preparing documentation necessary for promotion |
| **"niche" activities** | [D] participation in external oral exams<br>[D] preparing and supervising class outings to the countryside (so called "green" or "white")<br>[W] student guidance and counselling<br>[W] Colour party supervision<br>[W] supervising the student council<br>[W] supervising other student activities<br>[R] participation in qualification course<br>[R] participation in additional post-graduate courses at the principal's request<br>[R] voluntary participation in additional post-graduate courses (without principal's request)<br>[A] timetable organisation<br>[A] organising duty rosters<br>[A] curriculum assessment |

** [D] – teaching activities, [W] – upbringing, [R] – professional development, [A] – administrative.*

The next group includes activities undertaken by at least half of teachers but rarely - no more than once per semester. These are administrative duties, such as writing school report cards or designing assessment criteria, but also teaching-related, such as conducting exams (including mock exams) or supervising students during religious retreats. The latter is performed by three quarters of teachers once per year or once per semester.

No more than half the teachers engaged in activities such as: preparing descriptive student assessment, maintaining student attainment records, documenting individual learner needs or preparing a plan for support activities. These activities were performed by a small percentage of teachers, mostly in early education, and relatively rarely - usually once, twice per school year. This group also includes two pastoral activities which are performed more often even if by a small number of teachers. These are pedagogical observation and measurement and working in guidance and counselling team. Activities connected with professional development, such as preparing documentation necessary for promotion also belong here.

The last group includes "niche" activities, since they are performed by fewer than 20% of teachers. Activities such as timetable or duty roster organisation, supervising the student council or colour party are included here. They are performed with varied frequency but by few teachers. Some tasks from this category, such as organising the school timetable, show that the frequency of some activities depends not only on level of education or functions performed (e.g., class tutor), but is also connected with the rhythm of the school year.

In the case of some activities performed throughout the whole school year, we can observe a relationship between their frequency and time spent on them. Teachers who rarely coach their students for competitions spend longer periods on it than those who perform this task more frequently. A similar situation applies to preparing work plans for individual students, keeping the attendance register, pedagogical observation and measurement or preparing documentation necessary for promotion. It would be difficult to discuss individual cases, but probably someone who works with gifted students, regularly instead of working in spurts (as some teachers do, according to the study findings) achieves better results.

The data are derived from internet survey in which teachers were asked about typical weeks and suggest that some administrative duties could be performed on an ongoing basis, but some teachers tend to cumulate them, so they consume more time. The results from the part of the study conducted by interviewers, when teachers were asked about the day before the interview, show that preparing documentation takes up only 6% of their general working time. Perhaps the cumulation of administrative tasks creates a general impression that they are so time consuming. However, all administrative duties are tiresome for people whose line of work is essentially different.

### 4.4.2. Teachers' working time according to the *Time and Working Conditions of Teachers* study

The study focused on three aspects: the proportion of teachers performing a given activity, its frequency and duration. These were the three elements that influence the general average working time, as measured by the *Time and Working Conditions of Teachers study*. The results discussed above were derived from the internet component of the study, which used the full, undivided list of activities. In the part conducted by interview the list of activities was shorter and divided. Respondents talked about the day preceding the interview. The results are described below.

Despite the survey population being limited to teachers of general subjects in schools for children and young people, there was a wide variety of teachers who participated. In order to make estimations more precise, a "typical" teacher was extracted from the analysis: a typical teacher has one employer, works 18-27 "blackboard" hours, can perform the function of class tutor but does not perform any functions influencing the number of obligatory teaching hours (student guidance counsellor, library teacher, etc.). 61% of the sample were such teachers. Taking into account the rich diversity of respondents, this group is homogeneous but internally diverse. Both someone who

works 18 "blackboard" hours and does not perform the duties of a class tutor and someone who works 27 "blackboard" hours and additionally performs the duties of a class tutor would be "typical". This model, however, is a good reference point and explains much in terms of estimating teachers' work time.

The typical teacher spent 34 hours and 25 minutes per week on five main areas of work (preparing and teaching regular lessons, teaching extracurricular classes, evaluating students' work). Results of the quantitative part, in which interviewers asked about the day preceding the interview, demonstrated that teachers spent another 12 hours on other activities, such as professional development (almost 2 hours), parent-teachers meetings (35 minutes), trips (20 minutes on average) or documentation (almost 3 hours). Detailed results are presented in table 4.6. For methodological and technical reasons, results of the part in which respondents filled the internet survey by noting their weekly working time (see Federowicz et al., 2013, pp. 17-19, 108) are not entirely comparable, but for the four activities: preparing and conducting lessons and extracurricular classes the results in both modules were similar (in the internet module the time spent on these four activities was 2 hours and 22 minutes longer).

**Table 4.6. Average working time of "typical" teachers teaching 18-27 lessons according to the time and working conditions study.**

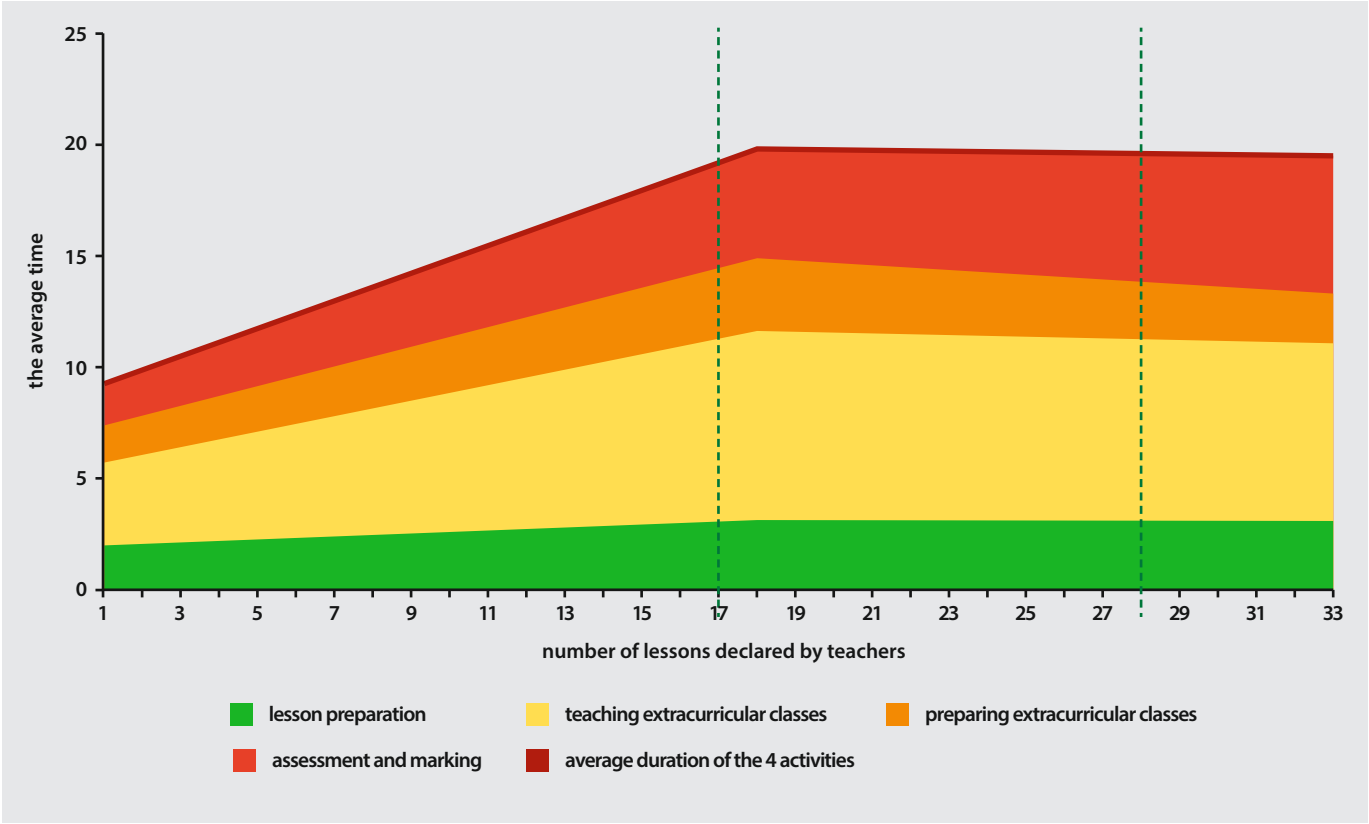
| name of activity | average time spent during a week (hrs) | percentage of general working |
|---|---|---|
| conducting lessons | 15,30 (20,5 lessons) | 32,9% |
| teaching extracurricular classes | 2 hrs 10 min | 4,7% |
| lesson preparation | 7 hrs 05 min | 15,3% |
| preparing extracurricular classes | 3 hrs 00 min | 6,4% |
| assessment and marking | 7 hrs 20 min | 15,6% |
| **total 5 key activities** | **34 hrs 35 min** | |
| keeping lesson and work records | 2 hrs 55 min | 6,1% |
| self-education and professional development | 1 hrs 50 min | 3,9% |
| cooperation with other teachers | 45 min | 1,5% |
| contact with parents | 35 min | 1,3% |
| after school trips and excursions | 20 min | 0,5% |
| contractual external exam related duties | 30 min | 1,1% |
| separately contracted activities | 10 min | 0,4% |
| preparing documentation for promotion | 10 min | 0,3% |
| other | 4 hrs 40 min | 10,0% |
| **total** | **46 hrs 40 min** | **100,0%** |

*Source: IBE calculations from the Time and Working Conditions of Teachers study.*

These results should, however, be interpreted carefully. As we can see from table 4.5, a "typical" teacher spent about 20 minutes per week on trips. Of course, this does not mean that each teacher spends exactly this time during each of the 38 weeks of the school year. Neither does it mean that each teacher spends 12 hours 40 minutes doing this every school year. Some teachers do not go on trips at all (and they decrease the average time) and others go very often (they improve the average time), but the general estimation is reliable. It is confirmed by the fact that the proportions of working time obtained from interviews and internet surveys are coherent even though different research methods were applied.

Analysis of the table showed that one lesson required an average of 20 minutes preparation. We should not, however, be under the illusion that there is a straight relation between the time spent on lesson preparation and teaching or - in general - relations between all three main activities. The relation between "blackboard" time and four other main activities is not straightforward. For teachers teaching fewer than 18 "blackboard" hours, the more lessons, the more time they spend on preparation. However, those with more than 18 hours a week spend the same time on preparation, regardless of whether they teach 18 or 27 hours. This is explained by the fact that those teaching more lessons usually cover the same subject in several parallel classes. Therefore, they prepare one lesson for several classes.

**Graph 4.10. Relation between declared "blackboard" hours and four other main activities of teachers.**



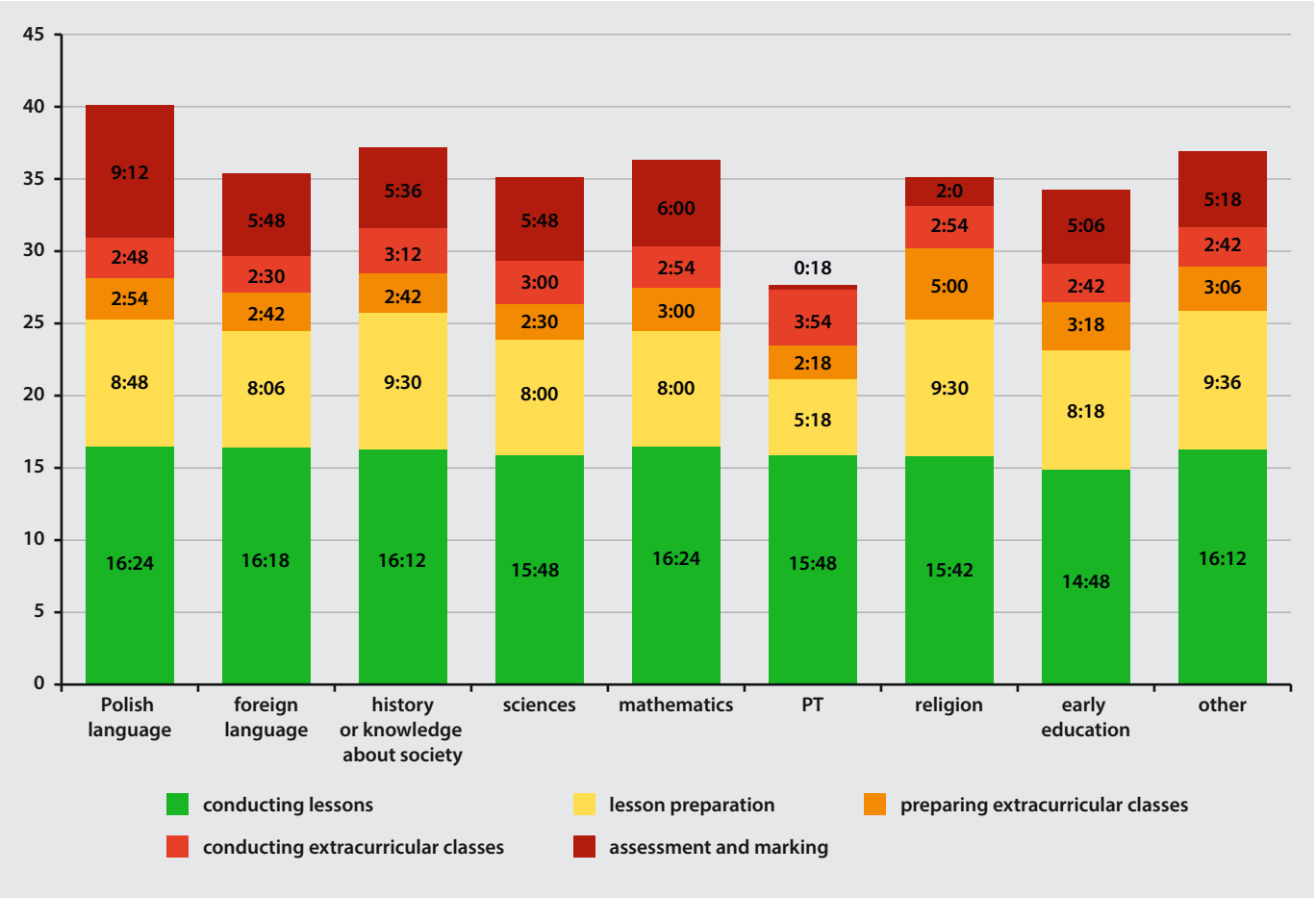

*Source: IBE calculations from the Time and Working Conditions of Teachers study.*

A large part of the discourse on teachers' working time is devoted to differences between the working times of various groups of teachers, for example, teachers at different education levels. The study results show that these differences are smaller that they may seem. When we compare the time spent on five main activities we can find some differences between teachers with different promotion grades. Teachers with higher promotion grades spent less time on five main activities that those with lower promotion grades (33 hours and 48 minutes among appointed teachers compared to 34

hours 48 minutes among contract teachers and 36 hours 12 minutes among chartered teachers). The main difference lies in time spent on assessment and marking.

Another factor influencing time spent on five main activities is subject field. The main subject is understood as the one taught by a teacher for the greatest number of "blackboard" hours. Taking into account the five main activities, Polish language teachers had the longest working hours (40 full hours per week) and PE teachers - the shortest (28 hours). Contrary to what might be expected, early education teachers do not differ from average in this aspect. Comparison between the time spent on five main activities by men and women suggests that women work longer than men. However, this conclusion would be wrong, since the difference lies in the subject taught. There is the same proportion of male and female PE teachers, but one third of all male teachers are PE teachers. That explains lower average working time for men: the source of the difference is not gender but subject. There are no observable differences between teachers working in larger and smaller cities. Time spent by teachers on five main activities is the same regardless of the size of their location. It should be taken into account that the study did not include time spent on commuting and this is a potential source for differences between teachers working in larger and smaller cities.

**Graph 4.11. Time spent on daily activities by teachers teaching 18 to 27 "blackboard" hours by subject, CAWI results.**




*Source: IBE calculations from the Time and Working Conditions of Teachers study.*

### 4.4.3. Teachers' working time - TALIS 2013 results

TALIS 2013 was conducted on three teacher populations: in primary, lower and upper secondary schools. Combining the three samples into one and comparing TALIS 2013 results with the time and

working conditions study findings is not acceptable for methodological reasons. Moreover, measuring teachers' working time was not the primary objective of TALIS 2013 and this was the area where the measurement was imprecise. The questions concerned the most recent complete calendar week (as a reminder, the study was conducted from March to May).

In TALIS 2013 teachers were asked about the number of full (60-minute) hours spent during the most recent complete calendar week on work in total, on teaching and on specific tasks (preparation of lessons, team work, marking/correcting of student work, students counselling, participation in school management, general administrative work, communication and co-operation with parents, extracurricular activities and other tasks). Teachers completed paper or internet surveys themselves. Despite the instruction to write zero (0) if the task had not been performed during the most recent compete calendar week, teachers often left the space blank, which raises a question of whether the task had not been performed or the teachers refused to answer. At the three ISCED levels, the average for "no answer" for all eleven questions was 8%, the highest proportion of blank spaces was for questions concerning participation in school management and "other tasks", which would suggest that the lack of an answer was from an absence fo these tasks rather than refusal to answer.

As a reminder: in the *Time and Working Conditions of Teachers study*, interviewers asked about the previous day, which structured the measurement (conducted throughout the whole school year), whereas in the internet survey teachers completed the weekly working schedule and, therefore, the measurement, even though based on a complete list of activities, it was more precise than the general TALIS declarations.

In TALIS 2013, the general average working time declared by primary school teachers was 36 hours 53 minutes, lower secondary - 36 hours 50 minutes and upper secondary - 37 hours 46 minutes. These are the average values in response to the question: "During your most recent complete calendar week, approximately how many 60-minute hours did you spend, in total, on teaching, planning lessons, marking, collaborating with other teachers, participating in staff meetings and on other tasks related to your job at this school?". In response to the question: "Of this total, how many 60-minute hours did you spend on teaching?", teachers declared 18 hours 53 minutes; 18 hours 36 minutes and 19 hours 19 minutes, respectively. Teachers in upper secondary schools declared a significantly longer working time than primary and lower secondary school teachers. Similarly, there were statistical differences between the time spent on team work, marking/correcting of student work, school management and general administrative work. Teachers in primary schools devoted more time than to other groups to communication and co-operation with parents, whereas lower secondary school teachers spent least time on this activity, but they spent the most hours teaching. The amount of time spent on student counselling increases with education level. Detailed results are depicted in table 4.7.

Populations of the *Time and Working Conditions of Teachers study* and TALIS 2013 were identical and both studies were conducted over a similar period of time. It could be expected that there would be a similar proportion of "typical" teachers. In the internet survey of the time and working conditions study, 73% of primary, 71% of lower and 61% of upper secondary school teachers declared the weekly teaching time from 18 to 27 hours (which amounts to 13,5 -20,25 of 60-minute hours). It could be expected that a similar proportion would declare the same 60-minute "blackboard" hours in TALIS. However, in TALIS, only 38%, 36% and 33% of teachers, respectively, declared 13,5 -20,25 of 60-minute hours of teaching (i.e. from 18 to 27 lessons). The proportions of teachers declaring 18 to 27 60-minute hours of teaching were 62%, 58% and 56%, which is more relevant to the time and working conditions study results. It would suggest that the majority of teachers reported the number of lessons instead of 60-minute hours, at least in response to the question about their teaching time.

**Tabela 4.7. Average working time in TALIS 2013.**

| | primary schools | | lower secondary schools | | upper secondary schools | |
|---|---|---|---|---|---|---|
| | N | M | N | M | N | M |
| total - respondent declaration | 209498 | 36 godz. 53 min | 131738 | 36 godz. 50 min | 171694 | 37 godz. 46 min |
| teaching | 209259 | 18 godz. 53 min | 131081 | 18 godz. 36 min | 171986 | 19 godz. 19 min |
| individual planning or preparation of lessons either at school or out of school | 208210 | 5 godz. 34 min | 129986 | 5 godz. 28 min | 168238 | 5 godz. 36 min |
| team work and dialogue with colleagues within this school | 198469 | 2 godz. 11 min | 125908 | 2 godz. 10 min | 160169 | 2 godz. 16 min |
| marking/correcting of student work | 201056 | 4 godz. 00 min | 126803 | 4 godz. 35 min | 164677 | 5 godz. 8 min |
| student counselling | 192496 | 1 godz. 53 min | 124683 | 2 godz. 7 min | 158426 | 2 godz. 23 min |
| participation in school management | 169591 | 0 godz. 55 min | 114113 | 0 godz. 57 min | 134690 | 1 godz. 18 min |
| general administrative work | 194298 | 2 godz. 33 min | 124170 | 2 godz. 31 min | 155947 | 2 godz. 45 min |
| communication and co-operation with parents or guardians | 196887 | 1 godz. 35 min | 122207 | 1 godz. 20 min | 152167 | 1 godz. 23 min |
| engaging in extracurricular activities | 193711 | 2 godz. 15 min | 124263 | 2 godz. 23 min | 157413 | 2 godz. 6 min |
| other tasks | 170571 | 1 godz. 51 min | 112880 | 1 godz. 55 min | 132116 | 1 godz. 57 min |
| average total for all activities (teaching and other activities) | 144123 | 40 godz. 31 min | 103575 | 41 godz. 24 min | 111132 | 43 godz. 1 min |

*Source: IBE calculations from TALIS 2013. Comment: Weighted numbers. N – number, M – average time.*

There are more problems with teacher responses. In the first question respondents were asked about general working time and in the next one - time spent on certain tasks. Table 3 demonstrates some incoherence between responses of TALIS respondents. The general working time declared in the first question was 4-5 hours shorter than the sum of individual activities in the following questions. The general declared working time and the sum of individual elements - these declarations were coherent for only around half of respondents, for one third - the general time was lower and for several percent it was higher than the sum of individual items. It seems that even though respondents entered a value in response to the first question, when asked about individual items they recalled more and therefore the sum of individual elements was longer than their declared general time. This effect is related to the nature of human memory which is activated by recollection.

Taking into account all these doubts, we can still note coherence between 34 and a half hours spent on five main activities in the time and working conditions study and 37 hours of general working time declared in TALIS 2013. In the internet survey of the time and working conditions, study estimations were also higher. However, if we compared the declared total time for all activities declared in

TALIS (from 40,5 to 43 hours) with a general time from the part of the time and working conditions study, conducted by interviewers, the differences emerge to be too large to be explained by the method for data collection. In summary, the data gathered from the time and working conditions study are partially corroborated by the findings of the more general - and in terms of working time measurement - less informative TALIS 2013.

# 5. Development of teaching competence

Autors:
*Kamila Hernik*
*Jadwiga Przewłocka*
*Magdalena Smak*
*Rafał Piwowarski*

Today, rapid changes in technology and society have made the constant development of professional competence a necessity. The need for life-long learning is especially relevant in the teaching profession which needs to meet increasingly complex challenges. The idea of teachers' professional development is not new, but today it has become especially significant. This situation is influenced by many factors. One is the growing complexity of the education system in which teachers operate and the complexity of their work environment as well as growing expectations made of teachers. Also perception of the teacher's role is changing: it is not reduced to mere knowledge transfer but also includes teaching of learning to learn, working and cooperation with others, forming students' need for life-long learning and creating conditions in which students can flexibly develop their interests and talents. Teachers are expected to constantly develop skills necessary for a knowledge-based society. The development of pedagogy as a branch of science and the necessity to update knowledge which is the foundation for the profession is also important. Knowledge about learning is constantly developing, new teaching methods and aids emerge and the idea of education as such is changing (Kazimierska, 2010; OECD, 2013b; Scheerens, 2010).

All these factors result in the growing significance of teacher development, especially that their competencies play a crucial role for the quality and achievement level of students (OECD, 2013b). Another important element of the teaching profession is, therefore, the analysis of activities aiming at development of individual skills, knowledge, experience and other qualities related to work in this profession. We consider all such activities as forms of professional development. Therefore, we define development quite broadly, bearing in mind that sometimes its meaning is narrowed to formalised activities including only acquiring knowledge in institutions specifically designed for this purpose, which for us is only one way of teacher development. We also include individual activities and initiatives in formal or informal groups with professional development, both in the workplace (including professional promotion activities) and conducted outside the school. We also include workshops, courses, self-education, participation in conferences and seminars, participation in networks of teachers, mentoring and other activities. The intensity and effectiveness of such activities depend on many factors (such as teacher motivation, opportunities for development created by the school, available offer, support and encouragement from principal, school relations, etc. - see Scheerens, 2010), therefore, the analysis of professional development should also include teachers' opinions about the possibilities and barriers in this area.

The review of competencies necessary for teaching shall serve as introduction to these reflections. Regulation of the Minister of National Education on the specific qualifications required of teachers[36] defines these qualifications by listing degrees and specialisations (at the higher education institution or teacher training college) which are required to be eligible for teaching positions in educational establishments. This regulation also points out other qualifications required of teachers of particular subjects.

The issue of specific skills is elaborated in regulations concerning teacher professional promotion (as defined in the Teachers' Charter and regulation on obtaining professional promotion grades). The professional promotion system in Poland includes four grades; trainee, contract, appointed and chartered teacher[37]. There are two criteria for promotion: assessment of the teacher's professional achievements during the probation period and professional development and acquired skills. In

[36] Regulation of the Minister of Education of 12 March 2009 on the specific qualifications required of teachers and determining the cases where a teacher with no higher education or completed teacher training may be employed (Journal of Laws of 2013, item. 1207).

[37] Detailed description of the professional promotion system is in subsection 5.1.2.

practice, the focus is on the first criterion (Sławiński, 2012), but regulations define concrete skills which are required at successive levels of professional promotion.

The requirements necessary to obtain the grade of contract teacher include the ability to conduct lessons in way assuring the proper implementation of the school's statutory objectives and the ability to discuss normal and observed lessons. The requirements for the grade of an appointed teacher include organising and improving teaching methodology, self-evaluation; taking into account the developmental needs of students, problems of the local community and contemporary social and civilisational issues; the use of ICT; application of knowledge of psychology, pedagogy and didactics; application of provisions related to education systems, social assistance or juvenile justice code. Most requirements necessary to become a chartered teacher focus on achievement, but they also include skill requirements such as sharing knowledge and experience with other teachers, foreign languages, the ability to detect and solve educational, behavioural or other problems (Pery, 2011).

These skills are important for teaching, however, there is a number of key competencies which were not included in the regulations. In Poland, there is no systematically organised set of additional competencies for which a teacher could officially become certified. However, educationalists and education researchers indicate the many skills important for quality teaching and differences according to subject. The key items relate to both methodology and teaching as well as social skills. Researchers[38] list pedagogical and psychological knowledge and skills, the ability to interest students in a given subject, developing their autonomy, using ICT for teaching and self-development, creativity, ability to use methods other than lecturing, communication, cooperation, adaptation to changes and other skills.

The necessity for constant competence development connected to teaching in school is accompanied by meeting challenges resulting from changes in the labour market. The changes in demography and the education system, such as modification of the core curriculum, amendments to the Teachers' Charter and transformation of the school network cause teachers to change their professional strategy. The decreasing number of students (1,113,000 thousand students fewer since 2005, GUS, 2013c) has resulted in the decreasing number of school teachers (19,700 fewer teachers since 2005, GUS, 2013c). For some it became impossible to fill their obligatory teaching hours in one school - it is necessary to find a job outside the school or to retrain and change profession. This relates to the need for skills for outside teaching, which may be obtained through work.

The labour market requires skills such as: planning and organising one's own learning, efficient communication for various situations, teamwork skills, creative problem solving, ICT skills and creativity. Employers also value self-organisation, self-discipline, broadly conceived social skills and steady development (PARP, 2013).

*Self-organisational ability which influences work effectiveness and successful task completion (independence, time management, decision making, showing initiative, resistance to stress and general motivation to work) are most desired by employers (54%). Interpersonal competencies are also important - for 42% of employers it was important that their future employee was communicative, skilled in team work and able to cope with difficult situations. Occupational skills related to a post ranked third - they were important for 40% of employers.*

[PARP 2013: 23]

The character of teachers' work would allow teachers to acquire these skills while working at school. They are well-educated (98% hold a degree), they obtain subsequent professional promotion grades, which should develop their ability to plan and organise their learning - motivation and ability to combine working and self-development is confirmed by 89% of teachers. Moreover, the profession assumes effective communication in various situations and with different partners - children, youth,

[38] More information on this issue may be found in the section of this report devoted to teachers of particular subjects, in the subsections outlining "ideal" teachers.

adults, supervisors - and ability to solve problems arising in frequent interaction. Many teachers, especially the younger ones, can effectively use new technologies.
All these conditions motivate teachers to undertake various activities aimed at developing their competencies. They include expanding and updating knowledge of their subject, teaching methods, the Polish education system and skills useful on the labour market outside education, such as new technologies or so called soft skills. Activities developing teachers' competencies include, training, workshops, seminars or research organised by various subjects as well as self-study in free time, various activities within school which enable acquisition of new skills and occupational activity outside school. The following subsections demonstrate the diversity of these activities: the first subsection contains analysis of the Polish system of professional development and the promotion system which is intended to motivate teachers' professional development, the second part includes data related to activities undertaken by teachers as part of their professional development and promotion and the next part presents directions of changes within these two systems. The last part of the chapter concerns teachers' professional activity related to work in and out of school, when they acquire competencies important in the labour market. We reflect upon the influence that this experience has on shaping strategies to cope with uncertainty and pressure in the education system and the labour market in general.

## 5.1. Professional development and career path

### 5.1.1. The development system

According to the Teachers' Charter, "Teachers should expand their general and professional knowledge, exercising their priority to participate in all forms of professional development at the highest level." The development may take the form of self-education, during development activities in or out of school (such as additional programmes, courses and workshops). Teachers should obtain support from the teacher development system regulated by the School Education Act of 7 September 1991 (with further amendments). Within this system, there are specialised institutions and guaranteed funding for implementation of measures relating to teacher professional development and methodological support.

The system of professional development includes (MEN, 2012a):
1) activities of teacher training institutions operating at three levels:
   - central - administered by the education minister, the minister for culture and national heritage or the minister for agriculture and rural development,
   - regional - administered by provincial governments,
   - local - administered by districts and communes.
   - non-public teacher training institutions operated by natural or legal persons;
2) methodological support.

The teacher training institutions are supervised by education superintendents whose responsibilities include accreditation based on evaluation by a specialist team. These establishments initiate many activities such as consultation, seminars, conferences, lectures, workshops or training for teachers considering the specificity of their subject and courses, as well as general knowledge and skills useful in teaching (ORE, 2010; Journal of Laws 2012 No 0, item 1196).
The following units are subordinate to the Ministry of National Education at central level: the Centre for Education Development, National Centre for Supporting Vocational and Continuing Education, and the Polonia Teachers' Centre as part of the Centre for the Development of Polish Education Abroad (its activities include supporting public teacher development centres, guidance and

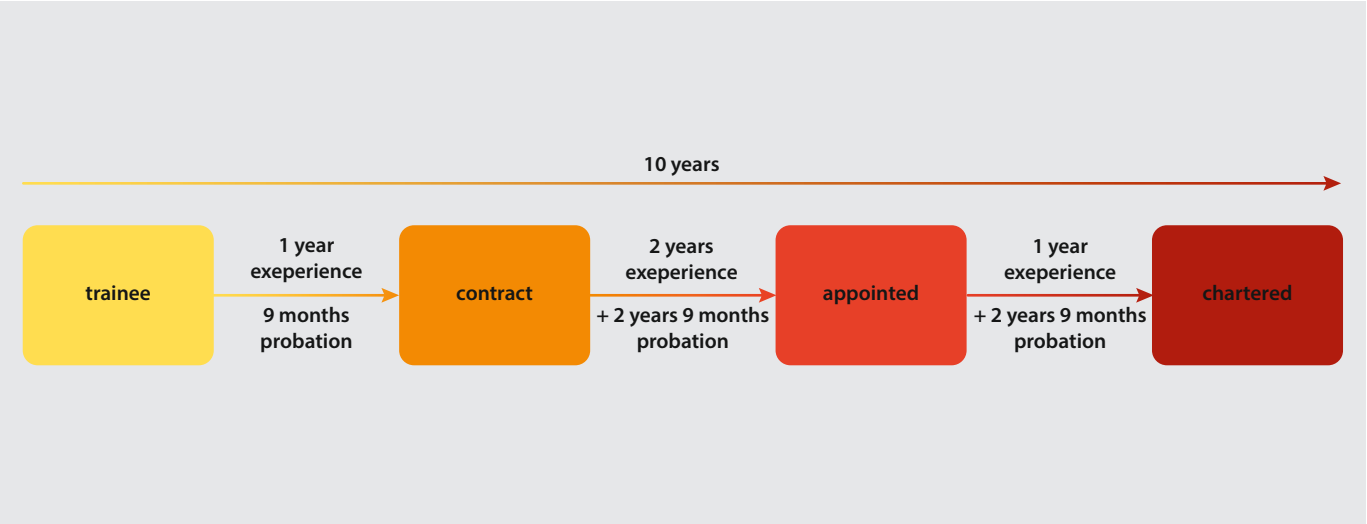
counselling centres and pedagogical libraries in organising support for schools, creating cooperation and self-education networks and developing information and methodological materials), as well as the Centre for Education of Art School Teachers and the National Centre for Agricultural Education, both subordinated to other Ministries.
Regional, district or local establishments support schools by assisting diagnosis of their needs, strategies for meeting those needs, planning and implementing support; they also organise and lead cooperation networks, various forms of development (such as conferences, workshops or training, provide consulting services and promote good practice).
In Poland, there are over 100 public institutions for teacher development (5 national, 38 regional and 69 at local and district level) and almost 400 non-public institutions[39]. At the end of 2012, these institutions employed around 2 thousand teacher-consultants and around 1 thousand specialists other than teachers. Around 1,5 thousand teachers - teaching consultants cooperate with these institutions and conduct open lessons and courses, consult and organise training (MEN, 2012a).

### 5.1.2. The professional promotion system

Teachers should be motivated by the system of professional promotion described above. There are four grades: trainee, contract, appointed and chartered[40]. Teachers employed at a school initially receive a one-year contract and the grade of trainee teacher. They begin the nine-month probation period for the contract teacher grade. After the probationary period, concluded by positive assessment of their achievements and with approval of the qualifying board they are promoted by the school principal to contract teacher. After working at least 2 years after being promoted to contract teachers, they can start the procedure to become an appointed teacher. The probation period is 2 years 9 months. After positive assessment over the probation period and passing an examination before a board they can then be promoted by the school governing authority. After working for at least one year as appointed teachers, they can begin a new probation period for a chartered teacher grade. This usually also takes 2 years and 9 months. After review of their attainment and interview before the board, they can be promoted to chartered status by the authority responsible for education superintendence. Following the regulations, promotion is determined by teachers' professional development and acquired skills.

[39] As of 2012.
[40] In practice, there is the possibility of people teaching without a professional grade: 1) teachers who are not employed according to the Teachers' Charter; 2) specialists in vocational training without pedagogical background employed according to Article 7 of the School Education Act; 3) teachers employed less than half time in one school.

**Rysunek 5.1. Polish teacher professional promotion system.**

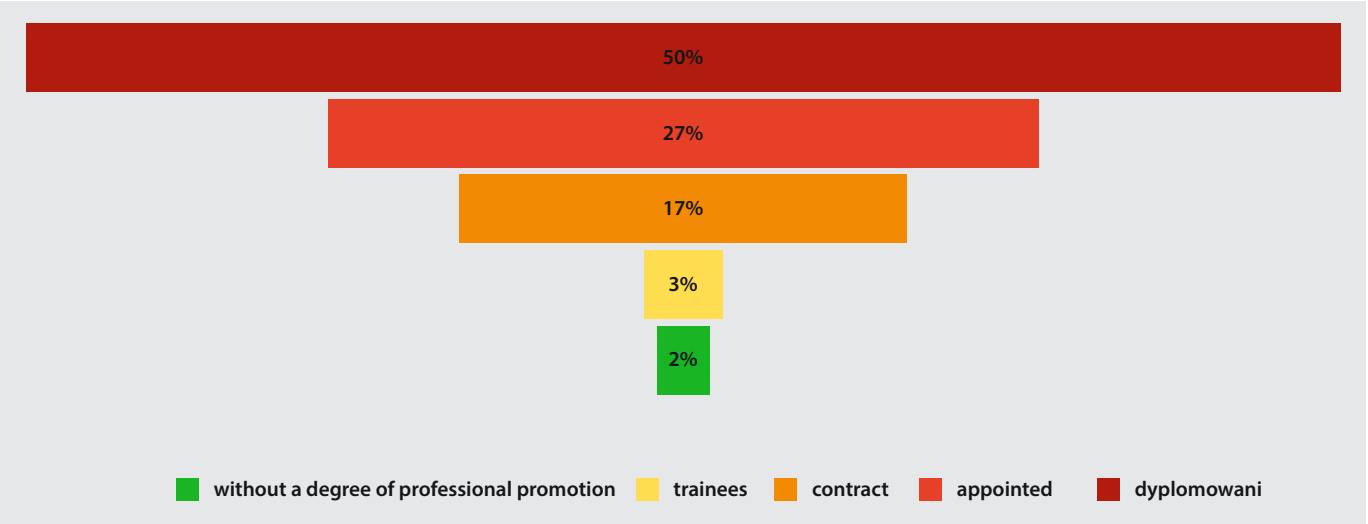



*Source: IBE calculation.*

Taking into account the standard promotion path described in the Teachers' Charter (except for possibility of reduced or additional probation period), in practice, a teacher can obtain the highest grade after ten years teaching (7 years of probation periods for professional grades and 3 years work between probation periods for subsequent grades). This average time for the entire career path for promotion, assessed according to the Teachers' Charter regulations, is confirmed in research findings. In the School Determinants of Teaching Effectiveness (SUEK) study from 2013 on teachers of 4-6 primary school grades, respondents were asked about dates of promotion grades. On average, it took teachers 1 year and 3 months to qualify for a contract teacher,[41] less than 4 years for appointed teacher[42] (it will now take relatively longer for teachers who still have this grade than it did for those who are now already chartered teachers[43]). On average, it took teachers 4,5 years to reach the position of chartered teacher. In total, around 10 years. This progression is quite fast, taking into account that around the world people work in different occupations increasingly longer. As the Educational Information System (SIO) 2013 data show, over half of Polish teachers had obtained the highest grade (chartered teacher) and over a quarter were appointed teachers (see Graph 5.1).

41 Me=1.
42 Me=3.
43 In the first case, around 4,5 years (Me=5), and in the second case, on average, 3 years (Me=3).

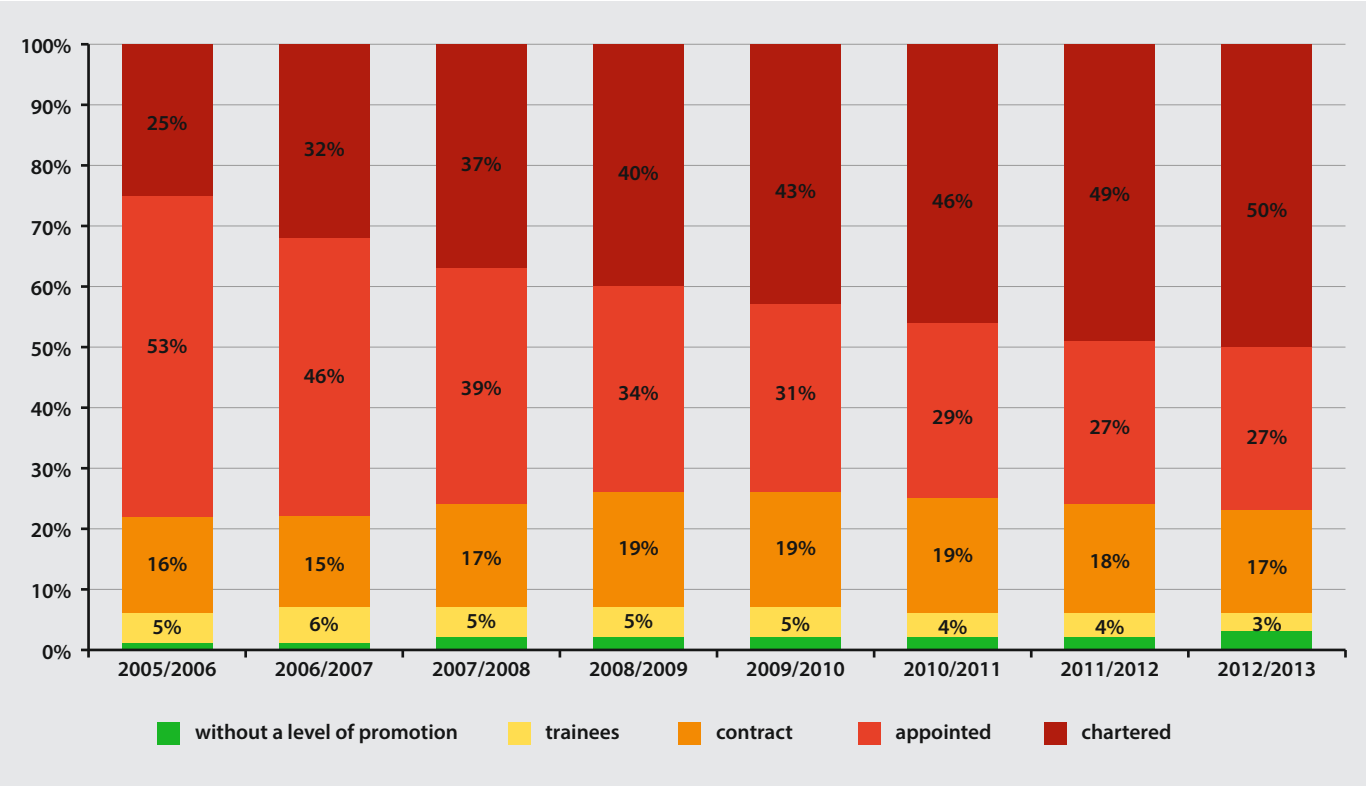
**Figure 5.2. The structure of teachers by a degree of professional promotion.**




*Source: IBE calculations from the Central Statistical Office of Poland data on education 2013.*

For many years, we have been observing an "inverted pyramid" of the trends which should apply to a small group of the best, most outstanding teachers meeting the highest (formal) requirements - the tip of the pyramid - actually hold for the largest group (chartered teachers).
Teachers arrive at the top of the career ladder quickly and at a relatively young age. The SUEK 2011 study on teachers of primary school grades 1-3 showed that the average age of attaining chartered level is around 39. The SIO data indicated that in the school year 2005/2006 only fewer than a quarter of teachers were chartered and within seven years this number had doubled (graph 5.1).

**Graph 5.1. Teachers by a degree of professional promotion grade.**




*Source: IBE calculations from the Central Statistical Office of Poland data on education 2013.*

Today, the proportion of teachers at the highest grades is the highest for general upper secondary (57%), and primary (56%) school teachers, the lowest - in post-secondary schools (25%). Regional diversity is also visible: in świętokrzyskie and podkarpackie regions more than 60% of teachers are chartered, whereas in wielkopolskie - fewer than 43% (GUS, 2013).
It should be noted that the high proportion of teachers with the highest professional grade is a result of the way the system is designed, but is also related to solutions accompanying its implementation in 2000[44]. Teachers who were employed as appointed teachers at that time could immediately start their probation period to obtain chartered status. This is also confirmed by the SUEK findings, where 38% of early education teachers declared they immediately obtained the highest grade in the professional promotion system and only 1% reported passing through the entire career path, from trainee to chartered teacher (3% in case of 4-6 grade teachers).

## 5.2. Professional development - research findings

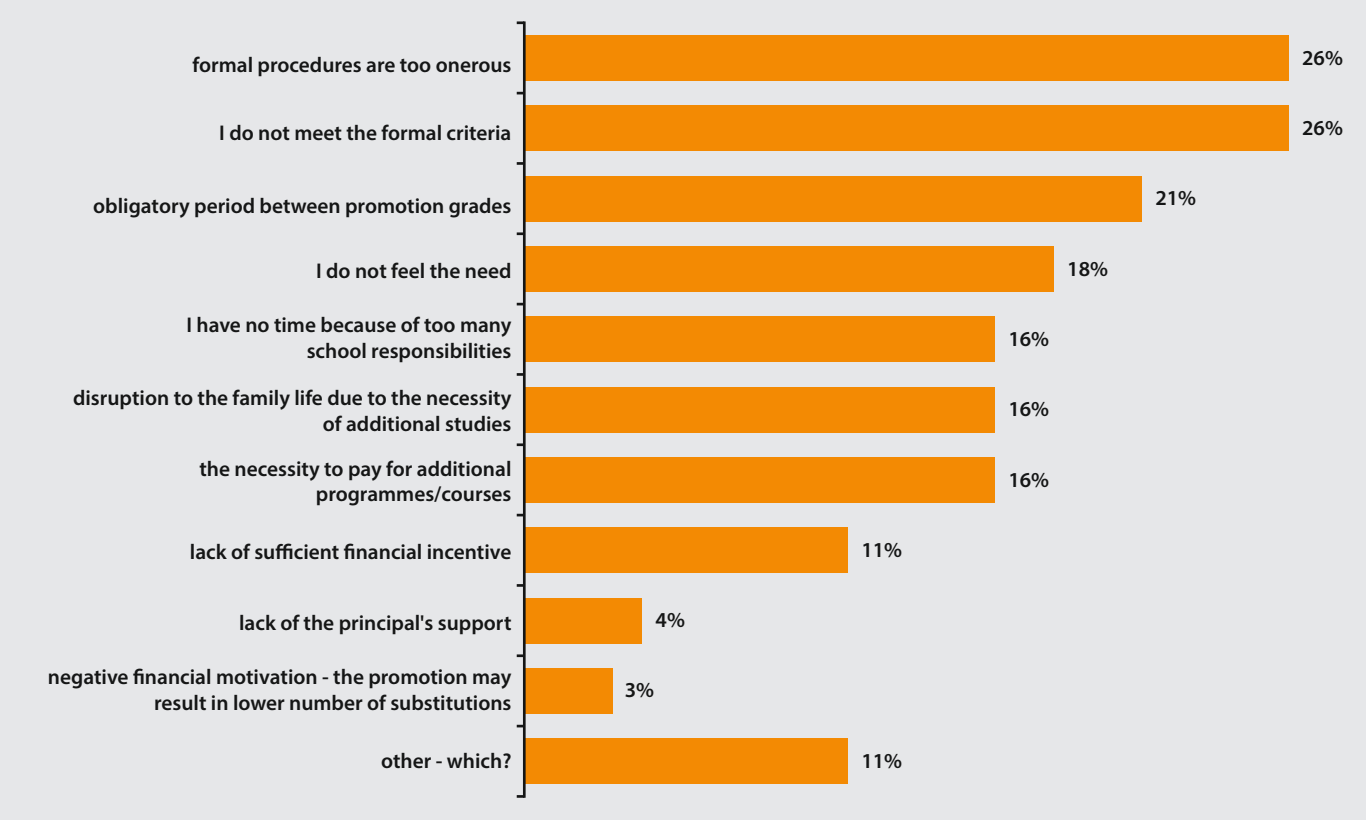
### 5.2.1. Professional promotion

The above data describing the promotion system for teachers indicated the need for changes. This opinion is shared by local government officials managing schools, representatives of non-public schools, education management staff, experts, parents, teachers and unions. Different beneficiaries of this process differ in their assessment of the system and proposed varied visions for change.
It should be noted that initially, introduction of this promotion system in 2000 was accompanied by the hope for qualitative changes in schools, for activating mechanisms encouraging teachers to steadily develop their qualifications. However, as the continuing debate following its implementation shows, these hopes were not fulfilled. There are some positive effects, such as motivating teachers to look for various ways to develop. However, criticism is more common. A fact of no small importance is that the changes in professional development were top down and teachers only had to adjust. It is emphasised that the system is static and based solely on financial motivation - obtaining successive grades of promotion is followed by an increase in basic wage - which in this way ceased to fulfil its role when half the teachers reached the final career stage. It is also important that teachers who obtained the grade of appointed teacher become entitled to employment on the basis of appointment, which becomes safe employment, if other conditions are met, such as adequate working hours. Sometimes this creates problems for the managing authorities - it is very difficult to terminate a contract with such a teacher, even if their work is negatively assessed by a supervisor.
The means used to assess teacher's professional achievements in the procedures leading to promotion are also questioned. The criteria for their assessment by principals and by qualifying or examination boards are not precisely specified regulations and are therefore, highly subjective. Moreover, dependency for promotion on external bodies results in detaching the employee from their workplace and without guaranteeing a principal the certainty of employing a suitably qualified teacher. This is caused by differences in the interpretation of regulations concerning qualifications, means for assessment of tasks or projects by individual boards[45].
The debate on the promotion system reveals its bureaucratic and one-dimensional character (only vertical promotion), reduced to a unitary effort aimed at achieving a particular status. At the same

[44] The promotion system has been in force since 6 April 2000, i.e., following the the Act of 18 February 2000 amending the Act - Teachers' Charter and amending certain other Acts (Journal of Laws 2000 No. 19, item 239 as amended).
[45] Despite the fact that it is the principal who is responsible for the course of a teacher's probationary period, assesses their professional achievements, degree of implementation of their professional development plan and - in case of appointed teachers - consults with the parents' council, in practice principals report such problems, especially emphasising the issue of how the principal is treated during examination board meetings preceding subsequent promotion grades. See the opinion of the Polish Association of Education Managers concerning implementation of the promotion system in schools, assessment of the impact of professional promotion on the quality of school work, http://oskko.edu.pl/konferencje/MEN19-05-2006/awans.pdf (accessed: 23.12.2013).

time, the system does not respect many competencies important and useful in teachers' daily work that are acquired at work or in professional development.

**Graph 5.2. Percentage of teachers indicating reasons for not starting the probationary period for a higher grade of professional development (only teachers below chartered teacher grade).**




*Source: Federowicz et al., 2013.*

Teachers themselves are also critical of the system. It is noticeable in newspaper articles, blog entries or teachers' opinions expressed during various meetings as well as in research. The data gathered during the Time and Working Conditions of Teachers study showed that teachers with lower promotion grades had the highest professional development aspirations. 86% of trainee and 68% of contract teachers declared entering the probation period for a higher grade, whereas among appointed teachers it was less than 50%. The latter seemed less motivated to reach higher levels of promotion. The reasons they gave involved formal aspects more often than in case of teachers holding lower promotion grades ("formal procedures are too onerous" - 34%), difficulties in balancing them with school responsibilities and family life ("I have no time because of too many school responsibilities" - 21%, "disruption to the family life due to the necessity of additional studies" - 21%), but also lack of motivation ("I do not feel the need" - 25%, "lack of sufficient financial incentive" - 14%). Teachers at lower grades more often indicated not meeting the formal criteria (64% of teachers with no professional promotion grade, 37% of trainee teachers and 49% of appointed teachers). A significant proportion of trainees, contract and appointed teachers interviewed, indicated the necessity to wait for obligatory period between grades (graph 5.2). It is also interesting that men were less interested in obtaining a higher grade.

These reasons were also confirmed by the next question. The respondents were asked to express their opinions on procedures for promotion and to indicate the extent to which they agreed or disagreed with the statement. Teachers thought about the promotion procedure rather in terms of it being time consuming (86% of "agree" and "rather agree" answers) requiring sacrifice to private life

because of the necessary participation in training and conferences related to the probation period (82%), and much less in terms of activities contributing to professional development (58%) or requiring significant intellectual effort (also 58%).

Other studies (Wiłkomirska and Zielińska, 2013) showed that teachers, when asked about the good points of the existing promotion system indicated mainly financial aspects (69%) and only 33% mentioned motivation for professional development. Principals had a slightly better opinion about the system. They more often noticed motivation for development (56%), but at the same time they emphasised the main flaw of the system which is the lack of motivation for development after promotion (56% of principals compared to 12% of teachers).

These results reveal a problem in the construction of the promotion system: teachers after obtaining higher grades are tired with the procedure and do not believe in the system's efficiency. The study by Kędzierska (2012) conducted in 2009-2011 contributed to better understanding of the significance of the promotion system in teachers' careers. Based on an in-depth analysis of biographical material of 52 teachers' professional careers[46], the author created their typology (including subcategories): structure type career, "patchwork" type career and "blind alley" type. The results revealed that promotion was a significant element for building a teaching career.

Regardless of career model, promotion was regarded and experienced by teachers in both individual and statist context. This means, firstly, that teachers only obtained successive promotion grades in order to stabilise their careers and it was not connected with the needs of their schools. Secondly, the career objective was reduced to obtaining formal confirmation of their professional development rather than actual competencies they could use in their daily work. Such an attitude was especially noticeable in the case of a patchwork career, typical for people whose career had been destabilised as a result of a system change. They strive after the highest number of forms of professional development, becoming diploma collectors and appropriating the widest area of qualifications and entitlements in order to regain the stability lost. Kędzierska also demonstrated how flexible rules for promotion and teacher careers in some cases curbed teacher development. As a result of changes in the labour market, people who have already had several years of rich professional experience and are at different stages of their careers also enter the profession, but the current system does not recognise their experience or competence or differentiate between graduates. In case of creatively structured career, teachers focus on creating a new career path outside the education system.

Kędzierska also showed that for teachers, who in 2000 had already had a significant record of professional achievement, the introduction of a new promotion procedure meant the extended path for professional development and for many also putting questioning their previous achievement. Teachers reacted to this situation in various ways: they intensified their efforts to achieve the highest promotion grade as fast as possible or they contested the system. These groups of teachers associated becoming a chartered teacher with guaranteed employment, but this expectation was not fulfilled in view of the closing of schools and local authorities' tendency to reduce their costs. As Kędzierska shows in her analysis, this feeling of disappointment was enhanced by separation of promotion (understood in terms of prestige) from its financial aspect (2012, 309), which meant that even though obtaining the highest grade within the system increased the basic salary, it was not automatically followed by greater prestige: "As a formal procedure forced by the career structure, promotion has utilitarian value which is not compatible with the altruistic core of values characterising the teaching profession. A true teacher does not have to have a certain promotion grade to be a teacher. The excellence in this profession is achieved by practice rooted in the sphere of daily experience. A good teacher follows the promotion procedure as if against themselves, in order to regain freedom to be a teachers restrained by the legislator." (Kędzierska, 2012, 331).

Such a promotion system is also a problem for school principals. In TALIS 2013, they indicated the teachers' career-based wage system as one of the greatest barriers limiting effectiveness (73%

[46] These were careers of people educated in the former system, adjusting to changes after 1989 as well as younger people who began working before and after the 1999 reform.

compared to TALIS average 48%). It should be noted that this is a specifically Polish barrier, other obstacles were indicated by similar proportions of principals in all countries participating in TALIS. All these studies question the role of promotion as a system for motivating development and creating opportunities for increasing competence according to the needs of teachers and their schools. Teachers make efforts to develop independently from the promotion system and development activities within the system are only one element forming their professional development. As mentioned before, currently much under half the teachers are on probation for a higher grade (68% of trainees, 87% of contract, less than 50% of appointed teachers and, by definition, none of the chartered teachers), whereas almost all, even those with the highest grade, undertake activities connected with their professional development. Based on TALIS 2013 data we can observe that 94% of teachers participate in activities aimed towards professional development. Let us take a closer look at these activities.

### 5.2.2. Forms of professional development

Professional development activities are common but not intensive. According to the *Time And Working Conditions of Teachers study* (Federowicz et al., 2013), self-education and professional development consumes about 4% of teachers' weekly working time (less than, for example, keeping records of teaching and school activities).

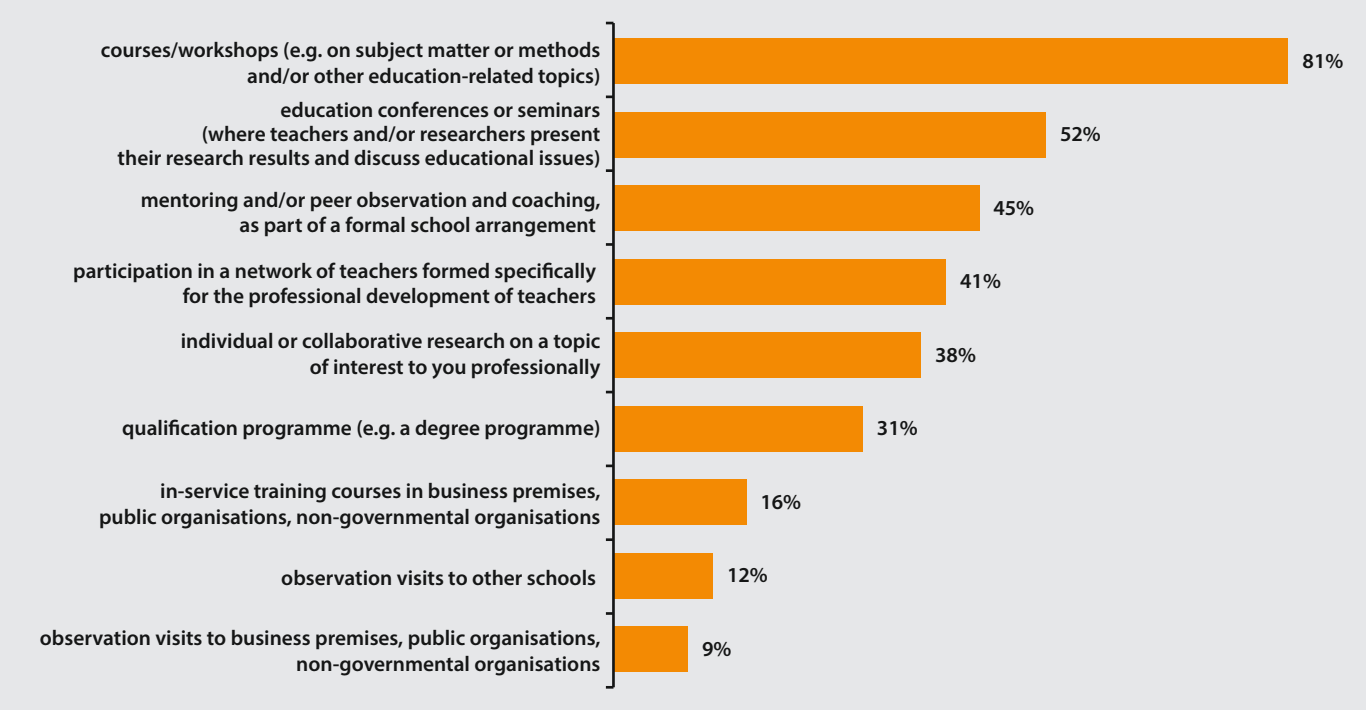
Various types of training, courses and workshops are the most popular forms of development. The data from the teachers' working time study show that these activities occur within the in-school development system slightly more often than externally. The former engage 91% of teachers, among which the vast majority are at least 3-4 times per semester. Fewer teachers take part in external courses (83%) and, compared to in-school development, these activities are undertaken slightly less frequently (only less than half of participating teachers declare doing so at least 3-4- times per semester), but their one-time duration is longer (on average, over 6 hours compared to 3 hours in the case of in-school training). Participation in external training is especially popular for early education and less experienced teachers. The analyses suggest that the frequency of such activities slightly decreases after 10 years and significantly decreases after 30 years.

Detailed information on other forms of professional development and their subject areas may be found in TALIS 2013 results. Most detailed data cited below refer to lower secondary school teachers, but they illustrate the general situation among Polish teachers well and also for those in primary and upper secondary schools[47].

As shown on the graph below, only participation in courses/workshops and education conferences or seminars related to most teachers (81% and 52%, respectively). The former were more time-consuming: for almost half of participating teachers they occupied 4 days or more per year. Other listed development activities were less frequent and they took up less time.

[47] Analyses suggest that teachers at these levels do not differ significantly from lower secondary school teachers in terms of professional development issues.

**Graph 5.3. Percentage of teachers who participated in the following development activities in the 12 months prior to the survey.**




*Source: IBE calculations from TALIS 2013.*

Cooperation networks which are supposed to perform an important function in the reformed development system are already relatively popular: 41% of teachers declared participation. This is quite a high proportion, given the fact that they have become widespread only recently. They were popularised as a result of pedagogical supervision reform (which introduced requirements connected with teacher cooperation) and changes in the system of teacher development and school support (such as creating cooperation networks) now being implemented. These networks are now being developed as part of a systemic project implemented by the Centre for Education Development (ORE) and pilot implementation projects realised in powiats (districts)[48].

Over one-third of teachers (38%) conducted individual or collaborative research, considerably fewer take part in observation visits to other schools (12%) and business premises or institutions (9%).

It should be noted that teachers vary in relation to forms of professional development. Courses/workshops were more popular for teachers in the middle of their professional path rather than in the beginning or towards the end; participation in conferences was rare among young teachers, who took part in qualification programmes much more frequently than their older colleagues (which was connected with probation periods for higher grades). Cooperation networks were most common for teachers with 10-30 years in service and with higher grades.

It is worth noting that participation of teachers with the highest grade (and, therefore, by definition not participating in any probation periods within the professional promotion system) in professional development activities is similar to participation of teachers with lower promotion grades. This suggests the influence of factors independent of the formal promotion system.

The data concerning time spent on various forms of development demonstrate a considerable variety in teachers' approaches to development. As already mentioned, almost half of teachers participating in courses or workshops devoted at least four days per year to this, but at the same time a quarter reported only one day spent on development. In case of the second most popular - conferences and seminars - over one third of participants limited it to one day per year and only one in four

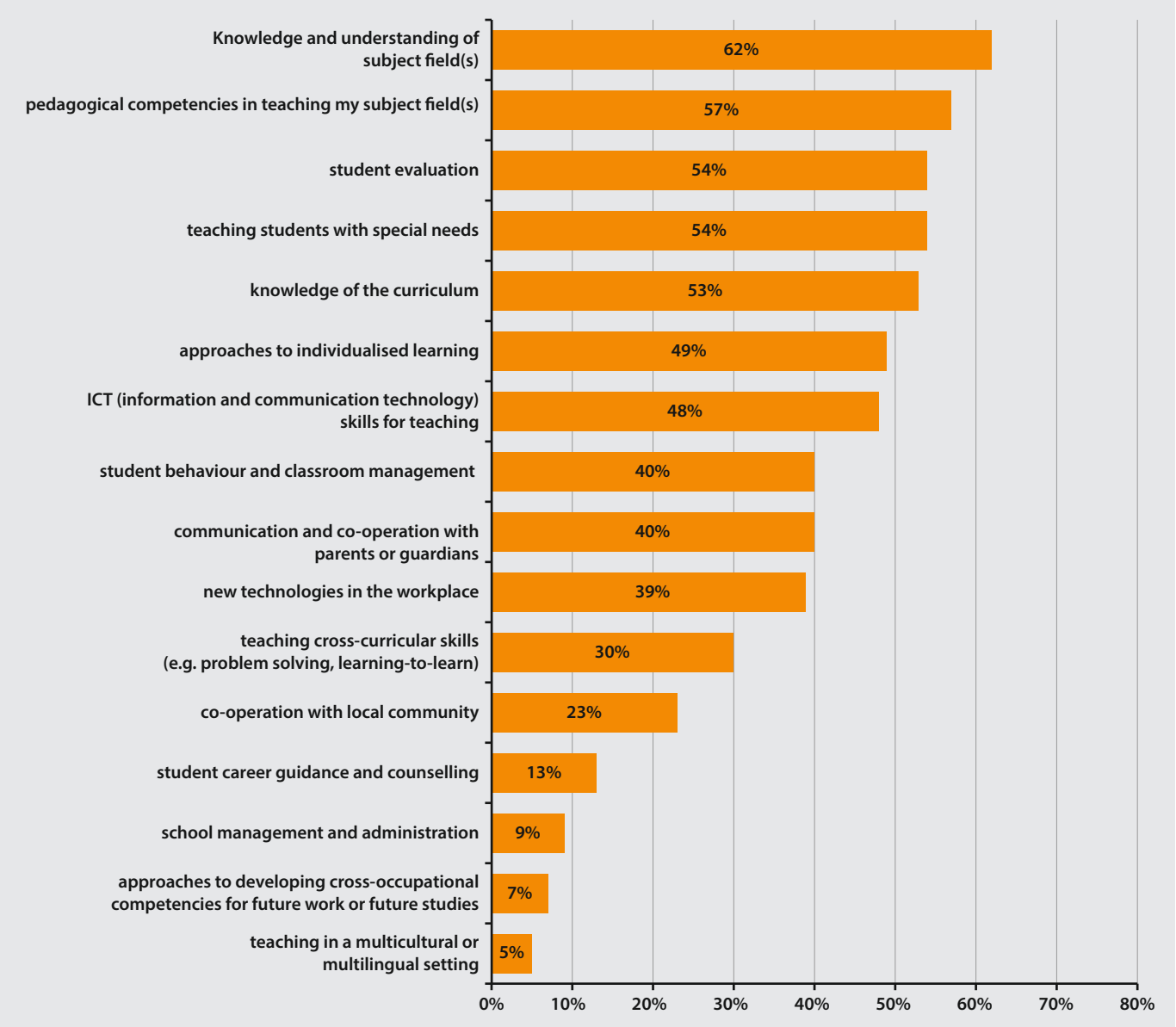
[48] More information in sub-section 5.3.

declared four or more days spent on such forms of development. This results from both the number of trainings or seminars in which teachers participate and their form. Only slightly more than a half (59%) of teachers undertaking development activities reported that they were spread over time (for example, several meetings over several weeks).
Also other characteristics of different forms of development analysed in TALIS are interesting. They showed that the majority (72%) of lower secondary school teachers participating in development had the opportunity to take part in forms employing group work methods (collaborative learning or research). Even more (83%) had the opportunity participate in forms involving active learning (and not limited to listening to the instructor).

### 5.2.3. Content of professional development

Teachers usually participate in professional development related to their subjects: 62% developed knowledge and understanding of subject fields and 57% - pedagogical competencies in teaching their subject fields. Other areas chosen by relatively many teachers were: teaching students with special needs, student evaluation and assessment practices, knowledge of the curriculum, approaches to individualised learning and ICT skills for teaching (it is noteworthy, that 39% also indicated development in the area of new technologies in the workplace).
The participation rate in certain areas of professional development depends on teachers' interests and needs, but also school needs, principals' expectations and existing offers. It should be noted that some forms of professional development offered to teachers were associated with textbook promotion organised by publishers. These trainings could have influenced the top ranking professional development activities connected with subject knowledge and pedagogical competencies.
The latter were much more frequently selected by teachers with shorter experience and, therefore, lack of sufficient skills in this area. They could also have been more interested in the above mentioned publishers' offers. At the same time, teachers with shorter experience less frequently chose development than their older colleagues in the area of teaching students with special needs, student assessment and knowledge of the curriculum.
In the case of teachers from other levels of education the ranking was similar with some minor differences: upper secondary school teachers more frequently developed the area of knowledge of the curriculum, whereas primary school teachers relatively more often chose training related to teaching students with special needs, approaches to individualised learning and co-operation with parents or guardians.

**Graph 5.4. Percentage of teachers who participated in professional development activities with the following content in the 12 months prior to the survey.**

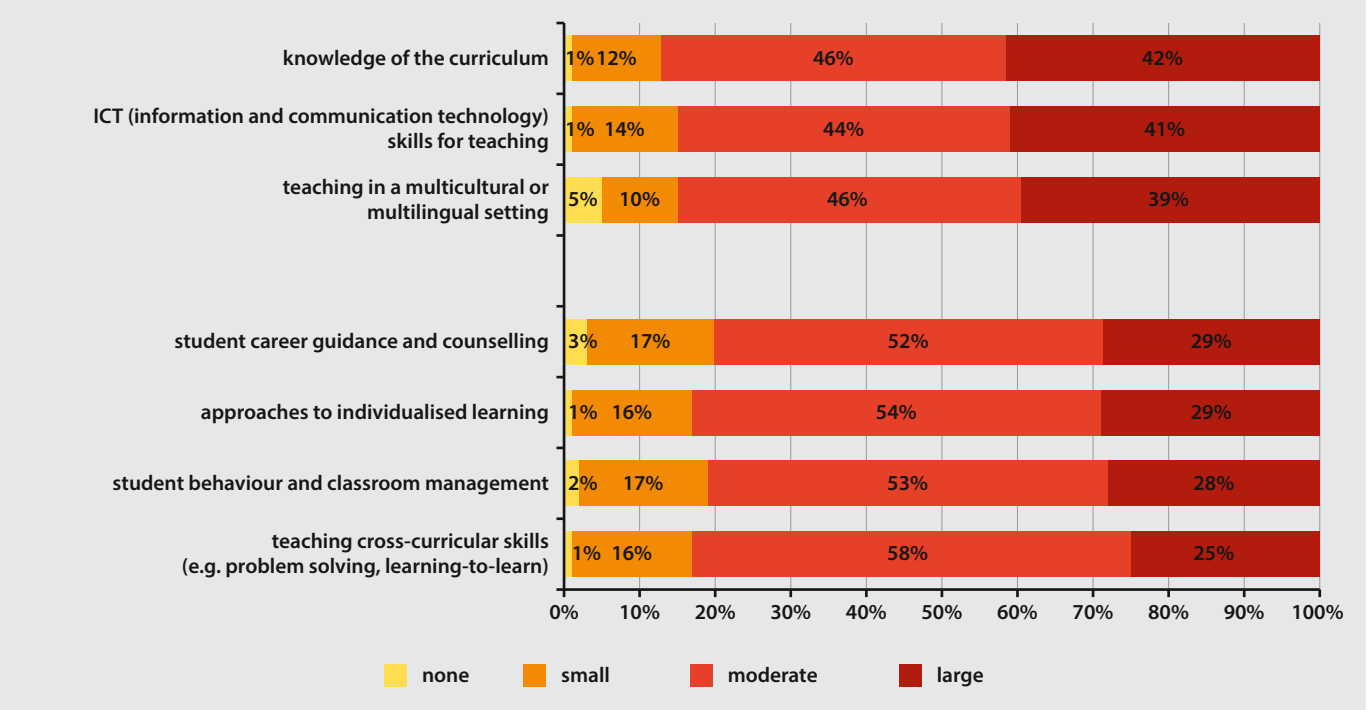



*Source: IBE calculations from TALIS 2013.*

### 5.2.4. Teachers' opinions about professional development activities

Teachers noticed benefits from participating in various forms of professional development, but their assessments of how their activities impacted their teaching were rather reserved. Lower secondary school teachers participating in TALIS 2013 quite unanimously reported that specific areas had influenced their teaching, however, the dominating answers assessed their impact as "moderate" (such answer was selected by 44 to 58% of respondents, depending on the area), whereas answers indicating "large impact" were selected much less frequently, by 25-42% of teachers.

**Graph 5.5. Impact of professional development on teaching as declared by lower secondary school teachers - the largest and the smallest impact.**




*Source: IBE calculations from TALIS 2013.*

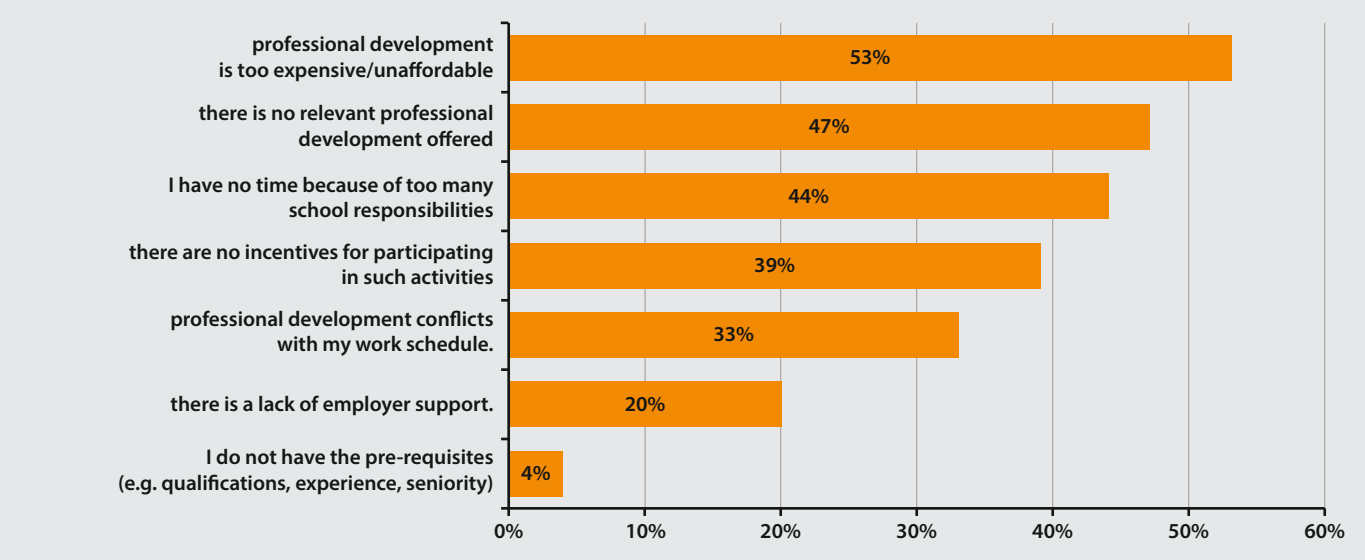
Here activities to develop knowledge of the curriculum (probably because of the recent changes in the core curriculum) and using information technology skills for teaching stood out - over 40% of teachers participating decided that they had large impact on their teaching. Assessment of the most popular development activities: knowledge and understanding of subject fields and pedagogical competencies in teaching subjects were the least varied (and rather low). Almost 60% of participating teachers indicated moderate and only 33% large impact on their teaching. At the same time, the assessment of their usefulness was higher for more junior teachers than their more experience colleagues.

The development activities, assessed as having low impact on teaching, included skills important for the rapidly changing society. Only one in four teachers participating in activities to develop teaching cross-curricular skills (e.g. problem solving, learning-to-learn) indicated them as having large impact on their teaching. Results related to approaches to individualised learning and student career guidance and counselling were only marginally the highest (29% and 29%). The question whether this resulted from the quality of courses or from inability to apply innovative approaches to students in school practice. It should be emphasised that one of the reasons explaining inability to implement knowledge and skills acquired during development activities could be their maladjustment to needs of the teacher's school. The issue of insufficient adjustment of the Polish system for professional development to school needs will be discussed further in the chapter.

### 5.2.5. Factors influencing participation in professional development activities

IThe intensity and effectiveness of professional development activities undertaken depend on many factors: individual, organisational and system. In teachers' opinions, the most important barriers to their development are financial and lack of relevant professional development on offer. Details are presented on the graph below.

**Graph 5.6. . Percentage of lower secondary school teachers indicating the following barriers to their participation in professional development activities.**




*Source: IBE calculations from TALIS 2013.*

Let us discuss the most important issues in detail.

### 5.2.5.1. Relevance of professional development offered

According to teachers (47% of responses), one of the most significant barriers (after financial reasons which will be discussed later) was lack of relevant professional development on offer. In this context, the question was whether opportunities offered for professional development responded to teachers' actual needs. TALIS 2013 data suggest that teachers' professional development activities were relevant - with minor exceptions - to their needs. Areas most frequently reported by lower secondary school teachers as needing further development were:

- teaching students with special needs
- student behaviour and classroom management
- new technologies in the workplace
- approaches to individualised learning
- ICT (information and communication technology) skills for teaching

And indeed, all these areas were among top ten undertaken development activities. The low usefulness of training in two out of these five areas is a matter of concern: student behaviour and classroom management and approaches to individualised learning ranked almost last in terms of positive impact of professional development activities on teaching (fewer than 30% assessed their impact as large).

**Table 5.1. Comparison of educational needs, forms of activity employed for professional development and their assessment (colours refer to ranking position based on percentages presented in a given column to facilitate comparison between positions in the three ranking lists).**

| | % of teachers reporting high or moderate level of needs in this area | % of teachers employing these forms of development in the last 12 months | % of teachers assessing their impact as large (among participants) |
|---|---|---|---|
| teaching students with special needs | 53% | 54% | 36% |
| student behaviour and classroom management | 46% | 40% | 28% |
| new technologies in the workplace | 45% | 39% | 33% |
| approaches to individualised learning | 43% | 49% | 29% |
| ICT (information and communication technology) skills for teaching | 42% | 48% | 41% |
| teaching cross-curricular skills (e.g. problem solving, learning-to-learn) | 37% | 30% | 25% |
| communication and co-operation with parents or guardians | 36% | 40% | 30% |
| student career guidance and counselling | 29% | 13% | 29% |
| co-operation with local community | 28% | 23% | 32% |
| student evaluation and assessment practices | 24% | 54% | 37% |
| school management and administration | 18% | 9% | 33% |
| pedagogical competencies in teaching my subject field(s) | 17% | 57% | 32% |
| approaches to developing cross-occupational competencies for future work | 17% | 7% | 31% |
| teaching in a multicultural or multilingual setting | 15% | 5% | 39% |
| knowledge and understanding of my subject field(s) | 14% | 62% | 33% |
| knowledge of the curriculum | 13% | 53% | 42% |

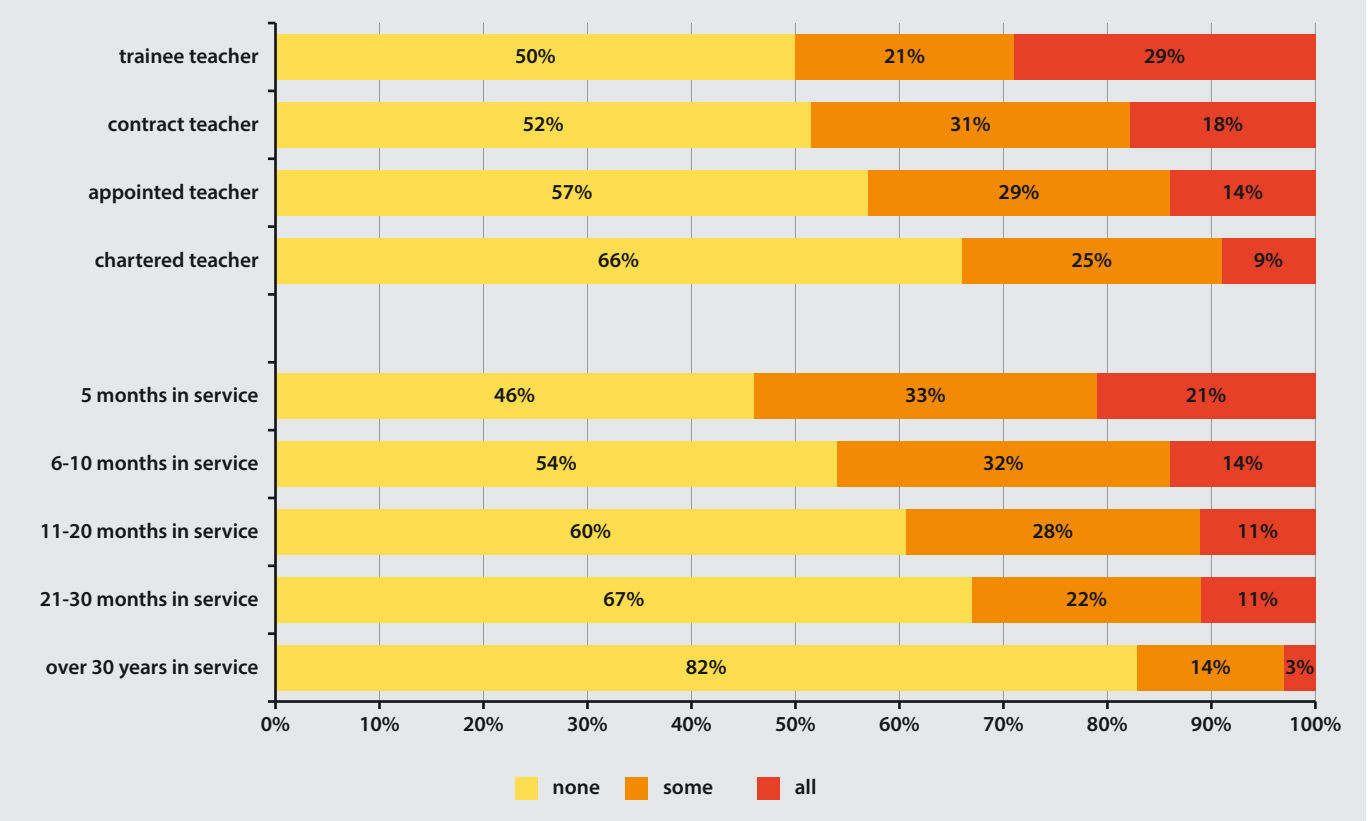
*Source: IBE calculations from TALIS 2013.*

Comparison between rankings of the most needed and development activities actually undertaken also revealed some discrepancies. It turned out that even though there was little need in areas of knowledge and understanding for subject fields and pedagogical competencies in teaching subject fields (only 14% and 17% declared high or moderate levels for these needs), training and other forms of development in these areas were among the most popular (more than a half of teachers declared participation, they were among the top five in which teachers participated most frequently). Perhaps undertaking development activities in these areas resulted from school needs, principals' expectations or formal requirements rather than teachers' needs. The offers from textbook publishers mentioned earlier may also influence this situation. It is worth noting that training covering areas of knowledge and understanding of subject fields and knowledge of the curriculum were very useful for teachers' daily work (high position in the third column). This result may indicate benefits from other sources of motivation than simply teachers' needs for selecting professional development activities, but it may equally result from the recent changes in the core curriculum (which required additional training for teachers — need which have been largely satisfied).
The differences in development needs declared by teachers with varying experience should be noted. Interest in most areas of professional development decreases with teaching experience. One exception was interest in areas connected with the use of ICT, which was most frequent among older teachers.

### 5.2.5.2. Financial aspect of professional development

Over half of teachers declared financial issues as a barrier to their professional development. This result indicates that a large portion of the development costs is passed to teachers, without support from their schools or other public institutions. The scale of this phenomenon can be assessed on responses to other TALIS 2013 questions. Around 60% of teachers undertaking professional development activities did not pay (they either chose cost-free options or all costs were covered by the school or other institution). Over a quarter of teachers (19% of primary and upper secondary and 27 of lower secondary school teachers) had personally to pay for some and slightly over one tenth (11% and 12%, respectively) had to pay all costs related to professional development.
In particular, the youngest teachers had to pay for their own development. Around half of trainee and contract teachers undertaking professional development had to pay some or all of related costs, whereas among chartered - only one-third.
Interestingly, despite these differences, appointed and chartered teachers more often indicated cost as a barrier to their professional development. There is a lack of detailed data concerning total cost of self-development. The question of the extent to which the observed differences resulted from differences in the training selected by teachers at lower promotion grades, or the approach of their principals who may prefer to support senior teachers, or expectations and attitudes of senior teachers, therefore, remains open.
It should be emphasised that the costs of participating in professional development had decreased - compared to 2008, the proportion of teachers who had to pay all or some costs related to professional promotion activities decreased (from 56% to 39%), while the number of teachers undertaking such activities increased.

**Graph 5.7. . Percentage of lower secondary school teachers reporting personally paying for all, some or none of the costs of professional development (responses to the question *How much did you personally have to pay for...?*).**




*Source: IBE calculations from TALIS 2013.*

### 5.2.5.3. The role of the principal and support for teachers

As the studies show, professional development largely depends on school support, especially from principals (Scheerens, 2010). Lack of such support can create a significant barrier to undertaking such activities. This problem was also confirmed by TALIS 2013 results: lack of incentives ranked fourth in the list of participation barriers (this problem was reported by 39% of primary and lower secondary 45% of upper secondary school teachers). It was more frequently reported by more experienced teachers and those at higher grades, which again points to the problem of too short promotion path. It is worth noting that this problem was more often reported by teachers from large lower secondary schools (45% in schools with over 500 students) than smaller ones (31% in schools up to 10 students). The proportion of teachers declaring that professional development conflicts with family responsibilities (44%) and their work schedule (33%) was also relatively high, especially in the largest schools. Lack of employer support (20%) was also a barrier. The problem of combining professional development activities with private and professional life is a matter worth noting and principals' support would be welcomed. Such support (relevant for 39% of developing teachers) could take the form of scheduled time for activities related to professional development during work time.

However, as the study on teachers' working time demonstrated, many activities related to professional development take place outside working hours, including weekends (Federowicz et al., 2013). During Saturdays, teachers devote twice as much time for self-education and professional development than during a typical weekday. It was, therefore, important whether principals noticed this problem and how they tried to recompensate their teachers. Perhaps this could be a significant factor motivating teachers to undertake development activities outside regular working hours. However, TALIS 2013 revealed a very modest scale for such support: 11% of teachers undertaking some

professional development activities received non-monetary support (reduced teaching, time, days off, study leave etc.) and around 5% received a salary supplement for professional development activities outside working hours.

## 5.3. Directions for system change

These findings present basic information concerning the professional development activities of Polish teachers. The system for professional development faces many challenges and one significant issue is the necessity to adjust it to school needs already mentioned. As can be read on the Centre for Education Development website:

*The most frequently raised flaws of the current system [of support for schools and teachers] include: lack of cooperation between institutions responsible for school support, focus on teachers' individual needs often unrelated to the needs of a particular school and domination of an incidental approach based on one-time short training sessions which are not reflected in permanent quality improvement to teachers' work.*

[ORE, 2011b]

The Ministry of National Education experts recommended treating development as an element of the support system for schools, emphasising, among other things, the role of motivating teachers to pursue learning in their place of work (Hajdukiewicz, 2013).

Therefore, changes involving more focus on school autonomy and subordinating teachers' professional development system to individual needs of schools are being implemented. The emphasis on individual teacher development is being shifted towards development of the school as a whole. The professional development system is intended to help schools to solve their problems based on analysing individual situations in particular schools (ORE, 2012b). In 2012, the Ministry of National Education regulated on institutions providing professional development for teachers (Journal of Laws 2012, item 1196) and in 2013 - on the detailed rules of public guidance and counselling centres (Journal of Laws 2013, item 199) and public libraries (Journal of Laws 2013, item369). They are already meant to facilitate school support from these institutions, and it will become their obligation by 2016.

At the same time the Centre for Education Development is conducting a system level project "The system for professional development based on the system provided for publicly available comprehensive school support" aimed at detailed preparation of these changes. The project includes training, preparation of content (such as development proposals, guides, training programmes, scenarios for cooperation and self-education network meetings, network action plans) and technical (IT platform).

According to the guidelines, the basis for support activities will be the yearly school support plans which will be supplemented by cooperation and self-education networks gathering teachers and principals from various schools meeting face-to-face several times in a school year and cooperating continuously on a specially designed internet platform. These solutions are already being tested as part of pilot implementation projects by regional-district authorities. Their objective is to test the tools and work forms of the new system of educational establishments support in practice (ORE, 2012c).

The existing professional promotion system also needs to be changed. Findings of the OECD report *Building a High-Quality Teaching Profession. Lessons from around the Word* (OECD, 2011) based on OECD reports and prepared for the International Summit on the Teaching Profession. The report discusses many important issues, such as recruitment and initial preparation of teachers, teacher development and support, an effective teacher appraisal system and their engagement in education reform. The system for teachers' professional promotion was also discussed extensively. It was

pointed out that promotion should not be reduced to vertical moves on the salary scale, but should be associated with additional factors, such as:

- recruitment and initial preparation of teachers,
- teacher development and the support system,
- providing attractive and varied careers (vertical and horizontal promotion),
- salaries and other employment conditions,
- teacher appraisal,
- teacher engagement with education reform.

**Based on this report, the IBE Teacher Research Unit prepared recommendations concerning the structure for a system of teachers' promotion.**

**Every promotion system should:**

1) **create incentives for teachers to acquire and develop necessary competencies, which requires simultaneous fulfilment of three conditions:**
   - efficient means of stimulating active teacher engagement in their own competence development,
   - competence assessment measures adequate to objectives of the teacher competence model,
   - coherent and continuing opportunities for teachers to acquire and develop required competencies.

   The promotion system should be the key factor stimulating, broadening and deepening teacher competencies. A necessary step is to create a coherent catalogue of competencies shared by the educational community which would later be measured and verified. They should be consistent with the European and national qualification framework. Modification of promotion system should consist in shifting the basis for promotion from professional achievement towards demonstration in the evaluation process that teachers acquired a set of competencies important for their work. The promotion and appraisal system should be based on merit. Promotion criteria should be clear, available to teachers and related to the quality of their work.

   The role of teachers' work evaluation appraisal has been growing over the past several years. Most OECD countries introduced monitoring of teachers' work using centrally determined procedures and tools. The present change consists primarily in focusing on assessment of educational effects achieved by teachers in their classrooms. This new evaluation procedure aims at improving educational effects by strengthening and orienting professional development while at the same time maintaining a high level of teacher responsibility and accountability. We deal with two functions of the teacher appraisal system: developmental and evaluative. It is especially important to make teaching an attractive career choice by providing an environment in which teachers work as high-quality professionals.\ There is also a lot of evidence indicating that salary levels are an important actor influencing decisions to become and remain a teacher. The financial aspect should be a significant factor in the vertical (connected with moving into higher positions in school hierarchy) and horizontal (competence based, connected with widening the scope of competence) promotion system. Salary increase should be evenly distributed in the promotion system over the course of career, which would foster maintenance of a high level of teacher motivation. Of course, salary should not be the only incentive for teachers - teachers themselves point to the significant role of their relations with other teachers, students, principal support, good work conditions and development opportunities.

2) **anticipate various patterns of teacher development** – such diversification could satisfy various needs of school as an institution as well as individual teachers.
The promotion system should include both the possibility of vertical and horizontal promotion. It is important to include creation of positions connected with performance of various tasks and roles related to different areas of school operation apart from teaching in a classroom within the horizontal promotion opportunities. One such form of horizontal promotion could include creating such functions as mentoring (it exists in Poland in the form of supervising teachers during probationary periods, but it is undervalued), school mediator, promoter of young talents or school projects coordinator. These functions may but do not have to entail changes in salary. Performing such functions should, however, entail changes in the number of obligatory teaching hours (a different way of calculating them). Vertical promotion based on hierarchy of competence and responsibility fulfils motivational functions. It requires varied positions with clearly defined criteria which are necessary for promotion in the professional hierarchy. What is more, subsequent promotion grades are associated with increasing requirements, responsibility and prestige - and as such have become increasingly difficult to attain. Functions involving more responsibility (and associated with leadership) include principal, vice-principal, subject team leaders and managers for professional development. The coherence of both promotion systems is important - occupying a position in one system depends on the position in the other (a novice teacher cannot become a team leader).
This type of diversified model varies from the automatic model based on experience, typical for most countries, in which years' service are reflected in promotion grade. What is more, it is stimulating for both teachers who are oriented towards constant professional development and those who value benefits from promotion over benefits from professional development.

3) **strive to reach the balance between development of individual teachers and school as a whole** – here principals play a crucial role. The principal's competencies should include diagnosis of promotion needs while keeping a balance between needs of individual teachers and the school as an institution. The thorough diagnosis of professional promotion needs from the perspectives of individual teachers and schools along with using the accredited and certified database for training could underlie the choices concerning a school's choice of financial support for selected forms of professional development. Professional diagnosis of development needs is not an easy task, therefore, the principal should obtain support in this area. Perhaps this is an opportunity to implement the close cooperation recommended between schools and higher education institutions. Another important step is to create a system database for teacher development in order to facilitate teachers' navigation through the rich offer of training, courses, postgraduate studies, etc.
Contemporary school still has to face the challenges of changing its organisational structure by transition from individual towards group work. In this context, creating and strengthening cooperation networks between teachers and schools is necessary. The main objective for school cooperation networks is to promote new practices, methods or educational changes. Emphasising well-functioning teacher teams could create an impulse to popularise good practices aimed at acquiring valuable experiences important particularly for novice teachers. Teacher teams learning by group work should be open to new interested members becoming an important tool for teacher development. Group work should lead to creation of a team, combined by shared experiences of mutual learning and creative problem solving, including for those challenges faced by novice teachers.

.

4) **support self-efficacy** – the crucial question here is how to motivate teachers to become active, reflexive professionals. The feeling of self-efficacy is a belief that it is possible to modify one's behaviour in order to reach desired goals. High self-efficacy can effectively protect teachers from occupational burnout and lead towards better performance of their students. Self-efficacy can be strengthened by, for example, planned individual professional development resulting in promotion. Teachers differ in terms of learning styles, engagement level and understanding of benefits from professional development. A potential factor stimulating teacher's professional development could be creation of individual development plans based on the model of teacher competencies, promoting reflexivity, taking into account the variety of their needs from an individual view and, moreover, leaving autonomy to schools in its implementation.
   Teachers with high self-efficacy, working in a diversified environment adjust better to the dynamics of school challenges and more frequently modernise it, especially in schools with diversity in family backgrounds and culture.

5) **support professionalization of teaching** – for example, by creating ethical codes (sets of ethical and moral norms related to the profession) by teachers themselves, professional associations bringing together their members as a form of corporation. A professional approach will result in social appreciation and authority stemming from acquired competencies. Stronger links between the promotion system and appraisal of teachers' skills and achievements may also influence greater prestige in this occupation as one requiring a wide range of demanding competency. The promotion system for prestigious professions usually assumes an even distribution successive promotion grades over the whole career. From this point of view it seems that Polish teachers reach the highest grade too early. The promotion system increases prestige of professions if the highest grade is not available to all, but only to the best and most exceptional.

The debate on the direction for professional promotion system change in Poland includes the suggestion of stronger focus on competence development in the professional promotion system (Sławiński, 2012). This means that the promotion could take the form of a compound qualification (National Qualifications System)[49]. Competencies constituting the teaching profession would have a universal rather than sectional character. In other words, instead of learning one profession, such a person would acquire competencies useful for different professions. Selection of successive partial qualifications would depend on teacher preferences and their school's needs. Professional development, therefore, should be based on both analysis of personal interests, employer's needs and demand for competencies on the labour market.
Such perceptions of the teaching profession - as a set of competencies - is consistent with current changes on the labour market. We shall analyse the teaching profession from the point of view of these categories in the following subsections.

[49] Information on the Polish national qualifications system in preparation are available on the website: www.kwalifikacje.org.pl

## 5.4. Teachers' competencies on the labour market

### 5.4.1. Functions performed by teachers

Various tasks performed by teachers, in and outside the school, contribute to the quality of teaching and improvement of their chances on the labour market. The scope of teacher competencies is rich, because they perform various tasks in their work. Which competencies derive from activities performed by teachers in their daily work? A good teacher is a specialist in their subject field, has vast knowledge and by working with students develops their educational and care competencies. In this context the ability to teach others, searching, selecting and verifying information (used during lesson preparation, gathering materials for students) is an important skill in the knowledge society. A teacher has communication skills acquired from meetings with students and their parents. They also develop cooperation skills while working in subject teams. Teachers also have organisational (they organise trips, excursions and school celebrations) and administrative skills (keeping school records). External and internal evaluation, as well as analysis of student scores develop competencies related to self-assessment and assessing other people's work. Some teachers also show considerable entrepreneurship skills effectively raising funds and finding external sponsors for student prizes and additional school activities. The teaching profession also requires constant learning and development (courses, workshops, professional promotion).

Moreover, teachers perform various functions in school - they can be class tutors (two-thirds of teachers), subject team leaders (one-fourth), mentors (6%), principals or vice-principals (5%), vocational counsellors (2%) (Federowicz et al. 2013). There are many less popular teaching functions in Poland, such as assisting students with disabilities[50], representative for issues with upbringing (whose responsibilities include developing a coherent school work plan) or interdisciplinary project leader. The Time and Working Conditions of Teachers study allowed the noting of an interesting relation: there are significantly more team leaders among teachers who are class tutors than among teachers who do not perform this function. This means that active teachers perform various functions at the same time, learning and developing many skills simultaneously, which increases their chances on educational and non-educational labour markets. However, 25% of teachers participating in the study did not perform any such function. This means that they did not assume any other responsibility than conducting lessons and, therefore, did not take advantage of school as a workplace offering opportunities to develop various competencies.

### 5.4.2. Experience outside the education sector

As a result of changes on the labour market, demographic changes and modification of core curricula, many teachers will have to face career change. It is easier for teachers who have experience outside the education sector to imagine changing careers (the BECKER study, 2013). Experience working outside the education sector may differentiate teachers' readiness for flexibility in their future career. Such experience (whenever) was reported by 27% of respondents, whereas at the time of the study 15% of teachers worked in school and some other workplace at the same time (Federowicz et al. 2013). Men (34%) much more frequently worked simultaneously in other professions than women (5%). Younger teachers, at lower grades and teachers of lower demand subjects with fewer teaching hours (such as religion or safety education) more often engaged in work activities outside the education system. The fact that novice teachers had additional jobs is not surprising: their salaries are quite low which induces them to look for other sources of income. Additional jobs outside school also depend on social demand for teachers' competencies. The trend for learning foreign languages increased opportunities for foreign language teachers on the labour market. PE teachers

[50] In Poland, there are 16 thousand such students and if they received adequate assistance they could attend school alongside students with no disabilities.

could respond to demand for health and fitness and find employment in gyms. There is more demand for such services (and, therefore, institutions and firms which offer such services) in medium or large cities, so teachers working there more devote their time to other activities more frequently than teachers from smaller cities or rural areas. Teachers with additional sources of income work in formal and non-formal educational institutions as well as outside the education sector. They work in language schools, regional examination boards, superintendent's offices, textbook publishers, preschools, as guardians during organised holidays for children, in NGO's, training companies and as private tutors. They also work outside the education system: in municipal offices and community centres or operate their own business. Information on occupations of some teachers before they started working in schools can be found in the *Time and Working Conditions of Teachers* report. They mostly performed office functions (37% of teachers responding), freelance occupations (31%), sales or trading (23%), services (12%) and blue-collar jobs or farming (45%) (Federowicz et al., 2013)

### 5.4.3. Support for teachers and potential barriers on the labour market

The problem of decreasing number of teaching positions has been noticed by authorities at central (in the the Ministry of National Education as subsidy for teacher retraining[51]) and local levels. Małopolska region and Łódź are good examples of actions requiring cooperation of many institutions undertaken to improve teachers' situation. They created special programmes: ONyKS and Parasol aimed at preventing unemployment among teachers[52]. Assistance offered to teachers in terms of career guidance and retraining should, however, be individualised from the perspective of different subject competencies. Analytical skills of mathematics, physics or information technology teachers can be applied in banks, finance or tax consultation. Literature and humanities enthusiasts can use their knowledge in publishing or local newspapers. Knowledge of biology and chemistry can be used in the pharmaceutical or food industries. Change in teachers' thinking about their further careers towards self-awareness, determining their individual competencies, building openness to change and encouraging motivation are important elements of teacher support. It is also important to show them other career paths, so that they would not perceive the end of their work in school as failure, but rather an opportunity for development and improvement of their chances. This awareness change in society leads to substituting the traditional criteria of teachers' social service and cultural capital by indicators of position within a social hierarchy connected with professionalism, new technology, wealth and level of consumption.

Many institutions keep a record of job offers for teachers - ZNP (Polish Teachers' Union),[53] Masovia Province Education Superintendent offices and internet portals such as: poznan.pl/oswiata, edukacja-warszawa.pl. The Polish Teachers' Union also organises regional and national conferences aimed at objective assessment of strong and weak points of teachers. One of the topics during discussed such a conference concerned employers' attitudes to people who were looking for work after they lost their jobs in the education sector[54].

---

[51] MEN committed 100 million PLN to professional activation of teachers who lost their jobs. More information: https://www. men.gov.pl/index.php/aktualnosci5/186-100-mln-zl-z-ue-na-wsparcie-nauczycieli (accessed: 4.03.2014).

[52] ONyKS (Outplacement Programme for Cracow Teachers) - in cooperation with the Kraków Town Hall, the Regional Employment Office in Kraków, the Municipal Employment Office in Kraków, the District Employment Office in Kraków and Grupa Doradcza Projekt Sp. zo.o. The programme provides dismissed teachers with psychological assistance, career guidance, training in operating on the labour market, workshops, internships and apprenticeships as well as 40 thousand PLN in grants for starting their own business and courses in entrepreneurship. The Parasol programme organises regular advisory consultations for teachers provided by members of career guidance organisations: Łódzkie Forum Doradztwa Kariery and Biuro Karier Akademia Humanistyczno-Ekonomiczna. They plan courses, training and post-graduate studies taking into account particular needs and expectations of teachers. Theoretical and practical classes will be conducted jointly by Ośrodek Usług Pedagogicznych i Socjalnych ZNP, Akademia Humanistyczno- Ekonomiczna in Łódź and career counsellors from Łódzkie Forum Doradztwa Kariery.

[53] http://www.znp.edu.pl/element/1802/Jak_pomoc_zwalnianym_nauczycielom (accessed: 03.03.2014).

[54] http://www.ahe.lodz.pl/konferencja/1690/konferencja-perspektywy-zawodowe-nauczycieli-wobec-zmian-na-rynku-pracy (access: 01.03.2014).

Not many employers could see the complexity of the teaching profession or their experience in other jobs. Recruiters usually perceived teachers as detached from the reality of working in the private sector, far from thinking in terms of effectiveness, profits and losses. Another objection towards teachers was their habituation to working fewer hours and the resulting lack of productivity during 40 hours of a regular working week. As was demonstrated earlier, teachers' work consists of many different activities not reducible to so called "blackboard hours" and many activities, related to both content and administration, take place outside weekly obligatory working time devoted to teaching, upbringing and care, often outside the school. Against teachers, employers also raised their alleged lack of team work skills, difficulties in cooperation with adults, lack of accepting negative feedback and putting themselves in a position of mentors. Another objection pointed out by recruiters was teachers' inferior ICT skills. This image may result from employers' perception of teachers is based on a fraction of the people in this profession who do not develop or perform additional functions. This opinion may, therefore, possibly be true only in relation to 25% of teachers, whereas the rest have the same opportunity as other participants to develop competencies valued in the labour market. The negative assessment of teachers as potential employees may also result from the common belief in the overly bureaucratic character of their promotion system, which limits the possibility for assessment based on merit. The lack of an effective system, enforcing their competency and the limited selectivity of people entering the profession and working as teachers. The present system of teacher assessment does not control the relation between effort put into work or time devoted to lesson preparation and the salary received.

### 5.4.4. Development perspectives

The Centre for Education Development conducted research on the way local authorities used the intellectual potential of teachers who lost their jobs in 2011-2012 and analysed three ways of dealing with reduction of teaching positions: inactivity, modification and change. The results demonstrated different levels of teachers' coping with the changing labour market (ORE, 2012c). The first group was characterised by professional inactivity and hope that the situation of demographic decline would change. Some teachers tried to remain in schools with reduced working hours, but such reliance on the current profession which is no longer a source of sufficient income or job satisfaction may not be beneficial. There is also a danger that lack of strategy in terms of career path may result in future unemployment.

The second way of dealing with reduction of teaching positions is modification of the situation, i.e., looking for work in education-related areas, such as employment in non-public schools, private lessons, additional courses in community centres or commercial institutions. The development of non-formal education has been substantially influenced by European structural funds. With this additional financial support, there are many extracurricular classes in schools and other institutions. Students are the primary beneficiaries, but indirectly it also affects teachers, giving them additional sources of income. The after-school educational services can develop because, on one hand, the demographic decline results in decreasing demand for teachers at schools for young people. On the other hand, in Poland there is a growing awareness of the necessity to learn and acquire new skills, which should cause increasing demand for people who can educate others. The diagnosis of demand for the education and care market indicates need for learning support teachers who would support the education process of children with special needs, teachers of vocational and technical subjects and caretakers for children and old people (PARP, 2013).

The third group adapts to the situation by retraining, which may take two forms: accepting jobs for which they are overqualified or consciously guiding their career development. Findings from the IBE pilot qualitative study (2012) of the costs and benefits of leaving the teaching profession showed that most frequent benefits mentioned by people who left the profession were: building stronger self-confidence, belief in their ability to cope with the open labour market, more opportunities

for development and decision making than in school and higher income. Some also mentioned achieving higher status by finding a job with higher social prestige than teaching. After leaving the profession, respondents' careers were connected with education and training sector as well as with their own business operations and services. Changing career is, however, much more difficult in regions which struggle with a high unemployment rate (podlaskie, warmińsko-mazur- skie, lubuskie regions) and there were also cases of professional degradation of teachers who were forced to accept jobs for which they were overqualified - some male former teachers entered manual labour and some women decided to emigrate (ORE, 2012d).

Teachers wanting to stay in the education sector will have to face the changing role of the school, more demands from students and parents as a consequence of democratisation of education process management, rapid growth of knowledge, necessity to adjust curricula to the changing labour market, development of new technologies and their impact on how young people think. Teachers will, therefore, be forced to develop their teaching competencies along with psychological and communication skills. The recipients of educational activities also change: the number of children decreases, the number of adults increases. It is worth noting that adults often lack formal education or are unable to use modern technology. Life long learning is an underdeveloped area in Poland - the proportion of people over 50 years old who are still being educated is lower than 9%. For several years we have also observed a growing demand for vocation teachers in vocational education. It is quite possible that some teachers will be encouraged to change their form of employment into a more flexible one: participation in educational projects or non-public sector which, despite the demographic decline, is constantly developing (PARP, 2013).

Many studies on reduction of teaching positions suggest solutions committing local authorities to take responsibility for this situation by creating new work job opportunities (ORE, 2012d). It should be noted that this might be an apparent solution because the budgets of local authorities are in a bad shape. This situation should encourage innovative approaches to management of local administration (communes and districts) aiming at effective use of human resources. Intensification of schools' extracurricular activities as well as use of so called "Orliki" pitches, sports arenas and community centres for classes designed not only for children but for all members of local community would help teachers keep their jobs and also strengthen social bonds. More flexible use of teachers' potential would require changes in the law, so that a teacher at risk of losing their job could make up the remaining hours in other establishments run by local authorities.

***

The findings presented show that even though most teachers make efforts to develop their professional skills, the relevance of professional development still remains disappointing. The existing data do not allow for assessment of results, such as student learning. Teachers themselves evaluate the impact of development activities on their teaching as moderate. In other words - they put a lot of effort (in terms of time and finance) into professional development, but in their opinion it is not reflected in increased effectiveness. Problems include incompatibility of offers with needs of schools and teachers, incorrect organisation of financial support and insufficient support for schools resulting in incompatibility between training and work obligations.

The majority of Polish teachers choose development activities related to knowledge of their subject and curriculum and pedagogical skills connected to their subject (partially the effect of textbook publishers' offers). Student assessment and approaches to individual learning are also popular. At the same time teachers express the need for activities focusing more on soft skills, such as classroom management, teaching cross-curricular skills and new technologies in the workplace. Professional development most commonly takes the form of courses, workshops and educational conferences. Participation in networks of teachers as a part of the currently elaborated new model for school support and professional development is also relatively popular. Changes in the system for

professional development intend more focus on school needs and limiting the one-time, individual approach.

The system of teacher professional development also needs fundamental changes. It is intended to play a significant role in motivating teachers to develop their skills, however, analysis of the Polish promotion system reveals its many flaws, including

- insufficient connection between promotion-related activities and actual professional development and the requirements imposed, ignoring many key competencies needed for teaching,
- insufficient connection between the promotion system and school needs,
- bureaucratic character of the system,
- the system is based solely on financial motivation and stability of teachers' professional situation.
- short promotion path: teachers obtain the highest promotion grade at a relatively young age.

Therefore, we recommend changes to the professional promotion system so that it would create incentives for acquiring and developing competencies needed, provisions of different career paths, accommodate needs of both teachers and schools as a whole and serve the professional character of this occupation. Such changes combined with a new modes of support for schools and teachers' development may lead to a situation where teachers' activities will respond to needs of schools and teachers themselves more efficiently. This would be reflected in the quality of school work and enable teachers to acquire key competencies useful in teaching practice as well as universally, as required by the rapidly changing labour market.

It is worth noting that teachers also perform various daily activities and roles which allow them to develop many skills relevant to the labour market. One in four had professional experience outside school. Nevertheless, employers have a negative image of the teacher as an employee, which, when necessary, makes it harder for teachers to adopt a new career. The problem of reducing teaching posts has been addressed by central and local authorities as well as social partners, offering teachers support for retraining. Teachers remaining in the education sector will have to face the changing role of the school and constantly develop, not only competencies related to teaching, but also in psychology and communication.

# PART III

# TEACHERS IN ACTION

# Introduction

Author:
*Jolanta Choińska-Mika*

This part of the *Report* includes a presentation of various aspects of teachers' daily work. The material for research and analysis was gathered mainly during lesson observations and interviews with teachers and students. We obtained a very interesting overview of various work styles and methods for attaining teaching objectives. This overview is far from complete, but it allows us to identify strong and weak aspects of the Polish school.

This part of the Report is divided into subject areas reflecting the main research areas of IBE's subject research units. We focused on five subjects which are the main core at all levels of education. The following chapters describe Polish language teachers, mathematics, foreign language, history and science teachers. Each chapter is organised around similar questions concerning teaching process and forms of working with students. We have been able to create a coherent and comparable picture of the issue considering the specific nature of individual subject teaching and the current state of research.

Special focus was on lower secondary schools. The core curriculum reform was implemented after 2009 in these schools. Teachers here were the first to meet the new challenges. The lower secondary school external standardized examination also changed: separate exam papers were introduced for science subjects, history and civic education and the expected attainment level for a foreign language significantly increased. Our focus on this level of education was, therefore, intentional, since the main objective of the introduced changes was to improve the quality and effectiveness of teaching in lower secondary schools to become the true foundation for general education.

# 6. Polish language teachers

## 6.1. Wprowadzenie

Autors:
*Piotr Bordzoł*
*Zofia Zasacka*

The Polish language as a school subject faces the challenges of rapid changes in society. Developing skills such as reading, creating and interpreting texts, understanding cultural values and products, both according to local and global dimensions, requires the constant development of teaching methods. There is a growing need to use the opportunities offered by the social circulation of cultural texts and information offered by new media and digital technologies. Important demands placed on teaching of the Polish language include developing literary and linguistic competencies which require social communication skills, cultural competence, critical reception of cultural texts, including those from popular culture and their use in new functional contexts. Learning the Polish language should also develop students' creative skills, both individually and in team work. Mastering competencies formed during Polish language lessons should result in a foundation for conscious and active student civic participation arising not only from the perspective of need for individual development but also from sensitivity to the common good.

In order to attain such objectives, teachers, as well as literature and Polish language educators build on the achievements of theoreticians and researchers such as Bożena Chrząstowska, Anna Marzec, Barbara Kryda, Tadeusz Patrzałek, Wincenty Okoń, Zenon Uryga, Wojciech Pasterniak, Bolesław Niemierko, Ryszard Handke, Stanisław Bortnowski and others. Their achievements cover forms and methods of classwork, reception of cultural texts during Polish language lessons, developing linguistic competencies. Studies on Polish language teaching also include observation of the effects of teaching correlated with school and socio-cultural conditions which may influence its quality. This type of research uses sociological tools and enables diagnosis and planning of changes. Good examples are reports related to preparation, implementation and monitoring of education reform (e.g., *Nauczyciele wobec reformy edukacji...*, 1999; Konarzewski, 2001; *Zmiany w systemie oświaty*…, 2002; Konarzewski, 2004a, 2004b; Domalewski, Wasilewski, 2011).

In this brief presentation, profiles of Polish language teachers, their attitudes and teaching methods are presented from results of the *Teaching Polish Literature and Language in Lower Secondary Schools under the New Core Curriculum* study conducted by IBE. Researchers aimed at diagnosing the condition of teaching Polish according to the new core curriculum at the 3rd level[55] of education and the description of the school and the out of-school environment's possible impact. The objective was to identify strong and weak points of Polish language teaching, as well as describing chances and challenges connected with implementing the new Polish language core curriculum. Assessment of lower secondary school student skills such as reception, analysis and interpretation of cultural texts, discussion and forming oral statements accompanied the study. Observed phenomena, such as types and methods of classwork, including analysis and interpretation of cultural texts, were based on the teaching tradition developed by these Polish language theoreticians and teachers. Empirical results from this study were analysed to answer questions about how Polish language teachers conducted their lessons, what methods and teaching aids they used and how they communicated with students and assessed their work.

[55] The core curriculum had been implemented since school year 2009/2010; Introduced by the Minister of National Education of 23 December 2008 on the core curricula for pre-school education and general education in individual types of schools (Journal of Laws 2009 No. 4, item. 17).

Daily problems faced by teachers and their successes in the classroom were also diagnosed[56].
The following research results provided context: *Assessment of Lower Secondary School Students Competences* (Choińska-Mika et al., 2013, hereinafter: DKG), Programme for International Student Assessment (Federowicz et al., 2006, 2009, 2013, hereinafter: PISA), *Educational Value Added* (Dolata et al. 2013, hereinafter: EWD) and *Time and Working Conditions of Teachers* (Federowicz et al. 2013, hereinafter: CzPN).

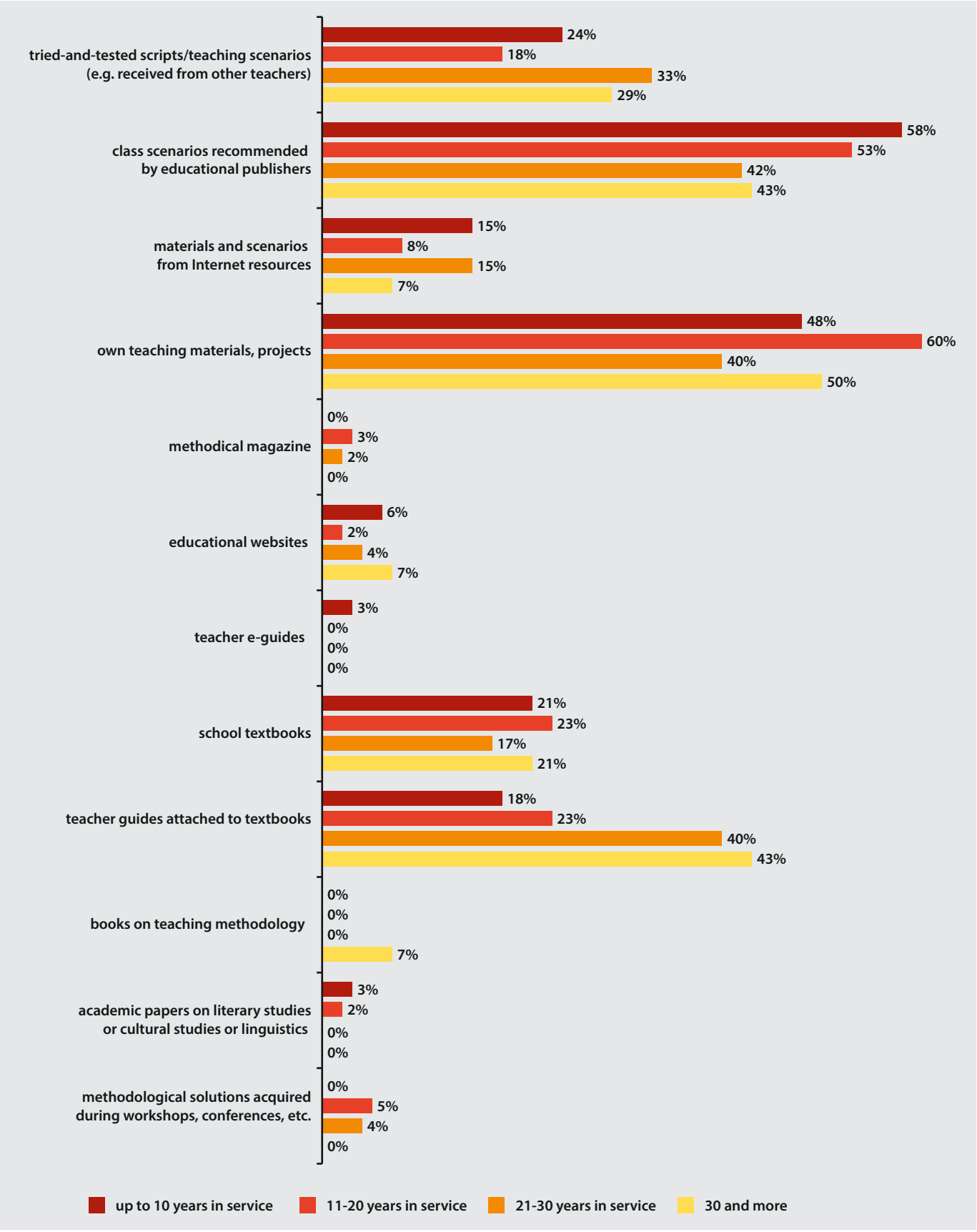
Most Polish language teachers interviewed (70%) were 45 years old or below and 74% were females. They had educational backgrounds relevant to their subject: 97% were graduates of Polish studies, including 88% with a Master's degree; 85% obtained teaching qualifications from a university teacher preparation programme; 12% completed post-graduate courses; 43% were qualified to teach more than one subject (in towns with a population of 20,000 and below - 56% and 37% in cities with a population of 100,000 and over). More than half of the teachers were qualified examiners for the Central Examination Board (55%). They usually evaluated external lower secondary school examinations (80% of qualified Polish language teachers), less frequently, Matura exams (25%) or sixth grade tests (20%). 66% of respondents were chartered and 23%, appointed teachers..

## 6.2. Lesson preparation

Daily teaching activities include not only conducting lessons, assessment of written assignments or keeping school records, but also preparation for classroom work.
Almost all teachers declared that they prepared for lessons at home and on average it took them 9 hours per week. Only a few declared that it took them at least 20 hours per week. These results concur with data from CzPN, in which the weekly time for preparing lessons was 8,8 hours for teachers with 18 to 27 lessons a week and 8,4 hours for teachers with 18 to 35 lessons.
While preparing the idea and plan for a lesson, Polish language teachers in lower secondary schools were guided primarily by the requirements of the core curriculum and suggestions from by the textbook they used. Over half of the Polish language teachers (56%) implemented the publisher's programme without any changes, 40% used the programme with their own modifications. None of the interviewed teachers used their own original programme, which highlights the unused potential for individualised teaching according to specific competencies of the teacher and individual learning needs of their students.
Polish language teachers openly declared their attachment to the teaching framework offered by educational publications. In their lesson planning, they used such materials as methodological guides, tests, performance tests, sample lower secondary school examinations, lesson plans, reading notes, information boards and reproductions, multimedia presentations, audio CD's, work-sheets and films.

[56] The population of interviewed students is a representative of lower secondary school students in each of the three regions, but the population of teachers interviewed cannot be generalised to the total teacher population from the region or the country. Nevertheless, the analysis of results from these three regions created grounds for identification of visible trends in the practice of Polish language teachers. Results from quantitative and qualitative studies from all three regions were similar but to assure the transparency and precision of reasoning in this chapter, we presented figures from a survey conducted in the first region (if findings from other regions were presented, it was stated in the footnote).

**Graph 6.1. Which materials do you use most often while preparing for classroom work? (by seniority, n=162).**




*Source: IBE calculations from the Teaching Polish Literature and Language in Lower Secondary Schools under the New Core Curriculum study.*

Analysis of findings revealed the impact of textbook authors' interpretation of the core curriculum on teaching practice. It should be noted that more experienced Polish language teachers were keener to use the tried-and-tested scripts and guides accompanying textbooks, whereas less experienced teachers more frequently chose class scenarios recommended by educational publishers, even though they also used their own ideas and teaching aids. So called e-guides were practically absent from teaching practice. The fact that Polish language teachers did not read academic publications on teaching methods and humanities or methodological journals is alarming (graph 6.1). To a large extent, it explains the widespread uptake of ready-made offers from educational publishers. Lack of familiarity with developments in teaching methodology, history and theory of literature or linguistics definitely creates barriers to formulation of individual, original ideas for teaching practice. The perspective of the lower secondary school examination also influences teachers' work. The question arises about the extent to which preparation for this exam takes the form of practising certain exam-type tasks rather than developing competencies described in the core curriculum. It may lead to neglected development of the competencies not assessed during the exam, such as formulating oral statements. It is an important issue, since according to the findings of the study, students have high communication skills only at the very basic level, limited to expression of brief, perfunctory information. Young people have problems formulating oral statements (requiring knowledge) in terms of both style and argument.

## 6.3. Teaching aids used during lessons in lower secondary school

As already mentioned, the basic tools used by teachers during Polish language lessons were the teaching aids offered by educational publishers: textbooks, exercise books, all additional materials (including practice tests). In their daily teaching practice, Polish language teachers also use: videos, TV and radio programming, multimedia software and educational games, sound recordings (graph 6.2).

In their daily work, Polish language teachers use the Internet, overhead projectors, multimedia whiteboards and TV sets as indispensable teaching aids (graph 6.3). It should be emphasised that the majority of lower secondary school Polish language classrooms are equipped with appliances helpful during lessons (CD player, TV set, video and DVD players, laptops) and over a half are additionally equipped with a multimedia projector or speakers. PC's or multimedia whiteboards are less common in Polish language classrooms. These teaching aids are used differently during lessons devoted to linguistic and literary issues (see also subsections: *Teaching methods for subject skills and Communication in the classroom*). Use of teaching aids other than textbooks and reading notes offered by publishers is usually connected with discussing a non-literary cultural text or introduction of a certain context. TV sets and DVD players were used for presentation of films, including adaptations of books from the compulsory reading list. Computer and multimedia projectors were usually used by a teacher for presentation of a text or image discussed during a lesson or for lecturing in the form of a multimedia presentation. Lessons devoted to linguistic problems can also be enriched by using a multimedia projector and whiteboard. Student interviews revealed that they liked working with multimedia whiteboards but, as already mentioned, not all Polish language classrooms had them.

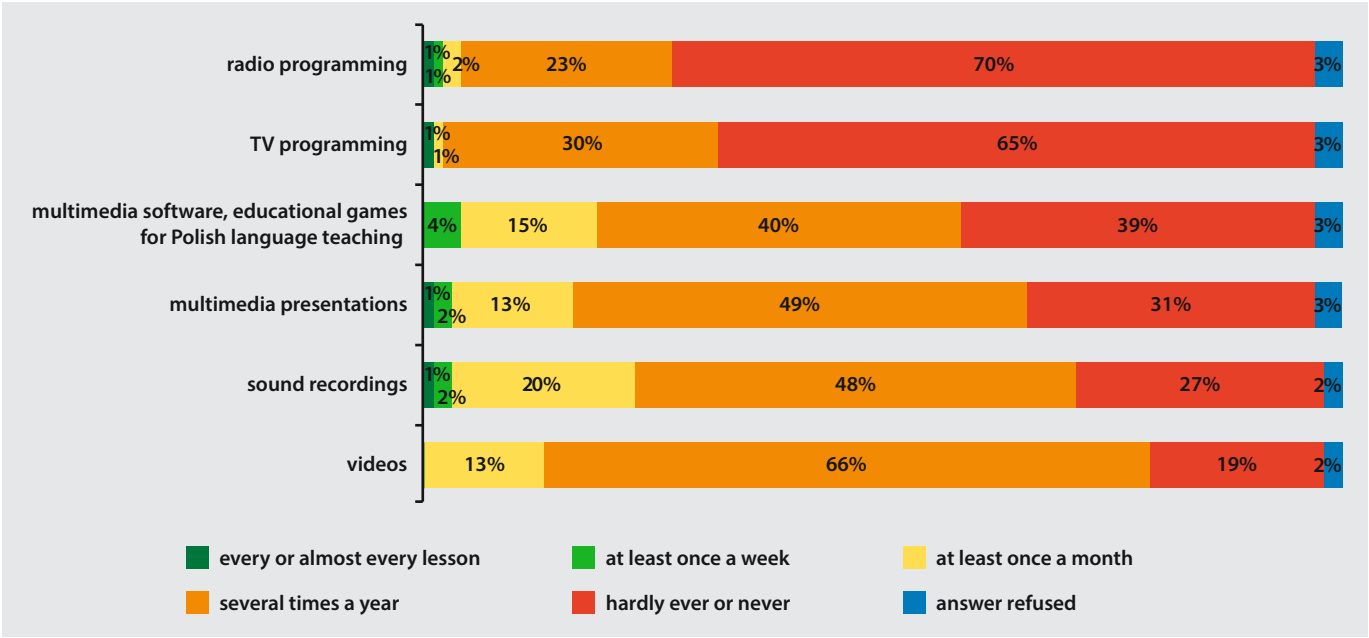
The factor hindering the use of equipment during Polish language lessons is the pressure of time felt by teachers on the teaching programme. Some tasks, such as using the education platform or showing films, are perceived as too time consuming. If a teacher lacks ideas and sufficient competencies, even the best school equipment could not guarantee the integration of new media with the traditional teaching process. It should be noted that the scope of new technologies (if available)

also depends on the extent to which teachers are familiar with these aids and their openness to new solutions and experience. Therefore, equipping classrooms with multimedia facilities cannot guarantee their proper use during lessons. Some teachers admitted that they accepted suggestions and instructions from students, who explained how to operate equipment.

Teaching to develop student readership by means of new media is important, including their ability to find texts and information on the internet and evaluate internet sources. There is also the need to equip students with tools for analysing and interpreting cultural texts such as hypertext, cybernetic poetry, multimedia, liberature, etc. (Rusek, 2008).

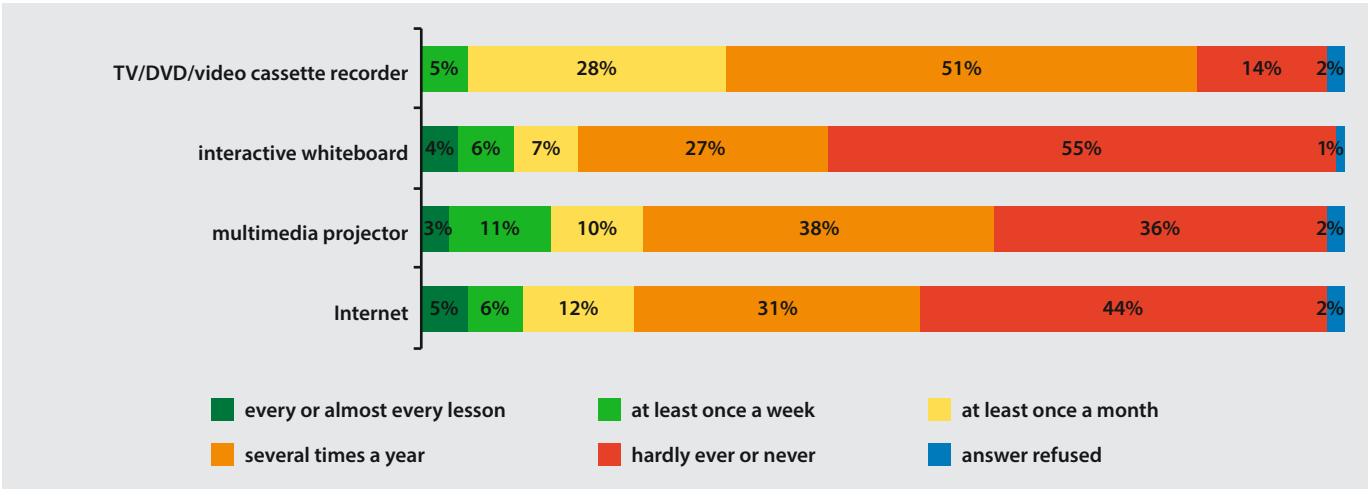
School libraries play an important role in daily teaching practice, especially their selection of books on the reading list and other literature for young people. Library resources are one of the main influences on the choice of texts during lessons. Students should have easy access to dictionaries and encyclopaedias (teachers reported the frequent use of these by students) to develop independent, critical information search and processing ability. School libraries as the most convenient place for students to read materials and should also offer books outside required reading, which would enable students to learn about the latest publications and trends, as well as develop their own individual interests.

**Graph 6.2. How often do you use the teaching aids listed below during individual lessons on literature? (n=162).**




*Source: IBE calculations from the Teaching Polish Literature and Language in Lower Secondary Schools under the New Core Curriculum study.*

**Graph 6.3. How often do you use the teaching aids listed below during lessons on literature? (n=162).**




*Source: IBE calculations from the Teaching Polish Literature and Language in Lower Secondary Schools under the New Core Curriculum study.*

It seems that teachers do not sufficiently exploit the potential of teaching aids other than those proposed by educational publishers to encourage student motivation and learning activities. New multimedia aids, in particular those which are close to students in their daily life, should be used more frequently. The good use of multimedia technologies could become an efficient means to encourage student participation in cultural activity.

## 6.4. Teaching methods for subject skills

The solid selection and application of forms and methods of work during lessons is decisive in the efficiency of Polish language teaching. This involves the proper choice of literary and non-literary cultural texts, those recommended by the core curriculum and stemming from student interests.

### 6.4.1. Forms of work during lessons

Teachers have varied experiences and habits. However, how teaching strategies are applied by Polish language teachers significantly reflects in student subjectivity and their active engagement with, for example, the process of interpreting text. Polish language lessons may be observed from the perspective of two applied orders: mechanical and organic. The lesson conducted with a mechanical approach is characterised by persistent implementation of previously scheduled and logically structured elements of material. A lesson described as organic is the result of a teaching concept and which students find highly attractive because it engages their minds and stimulates their imagination, creating space for initiative[57].

The observed lessons usually followed the organic order. This was used more often during lessons on literary than linguistic topics. During the latter, teachers usually simply provided information and the role of students was to memorise it.

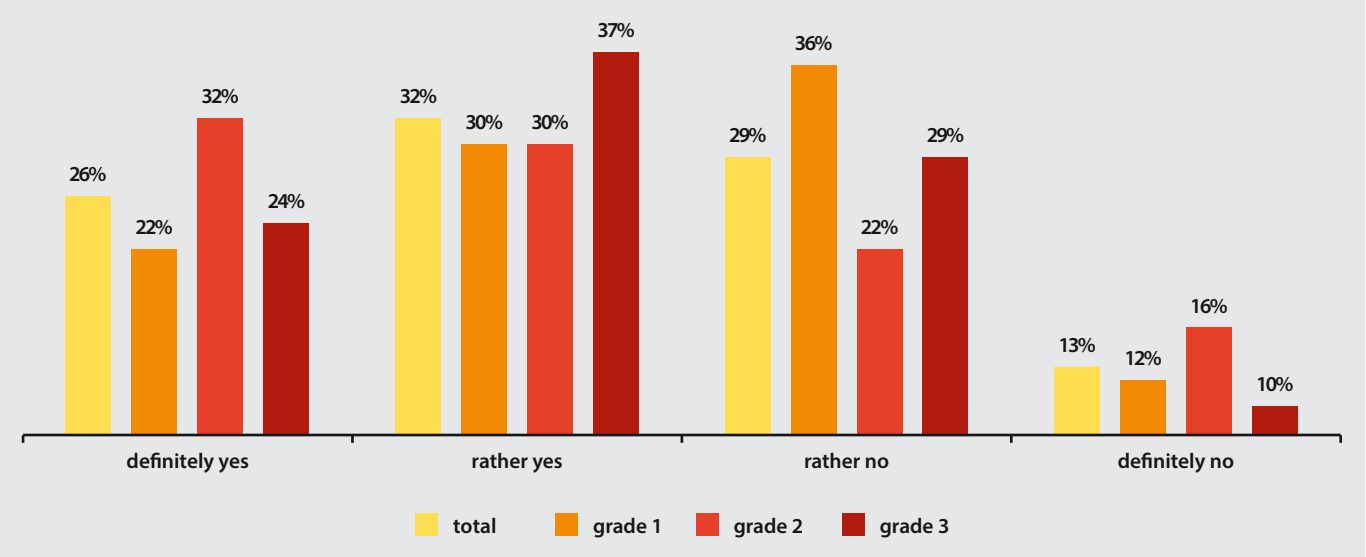
Lesson observations revealed that teachers often lost the orientation of the lesson plan during mechanical lessons, whereas during organic lessons this only happened occasionally. Students experienced the same with similar regularity. Based on the results of lesson observation, it may be stated

[57] The categories of mechanical and organic order of lessons applied here are the original idea of the research team led by Grażyna Tomaszewska. These findings are based on analysis of data from a qualitative study. As such, they only refer to observed lessons and we cannot infer from them the general frequency of conducting lessons one way or the other. It seems that analysis of the impact of mechanical or organic didactic concept on the course of a lesson may become an inspiration for further, in-depth study on teaching Polish language.

that both teachers and students do not lose track of the lesson order when it is based on an interesting concept which encourages student active participation. It should also be noted that the didactic concept releases teachers from the need to keep to textbook guidelines. The book becomes a teaching aid and its content becomes creatively embedded into the lesson concept.

Most observed lessons included an interesting didactic concept (graph 6.4), but this was more typical for organic lessons. Most lessons, build around an interesting (according to observers) didactic concept involving work with literary texts. Lessons concerning language and non-literary functional texts were less frequently of interest from this perspective. The same applied to review lessons. Nevertheless, it should be stated that lessons based on the mechanical approach may be also attractive to students. Lesson observations revealed that this was more typical for more experienced teachers who could engage students with classroom work. Sadly, only very few observed lessons were based on coherent didactic concepts suitable to encourage stimulation of student emotions, intellect and imagination in first grades of lower secondary schools. Probably there are several explanations for this phenomenon, such as the fact that first grade teachers fill gaps in student skills from their previous level of education.

**Graph 6.4. Did the observed lesson feature a didactic concept which consistently assembled all elements of the content to make it attractive for students? (based on lesson observations, n=151).**




*Source: IBE calculations from the Teaching Polish Literature and Language in Lower Secondary Schools under the New Core Curriculum study.*

Lesson observations revealed that, in most cases, students were guided by teachers in work with cultural texts relating to context, explanation of ideas and symbols, directions for finding important information and learning aids.

The vast majority of Polish language teachers considered their students' interpretations of texts. They usually commented and developed the ideas involved, stimulated other students to discuss proposed interpretations with reference to their own work, encouraging students to reflect upon ideas proposed by their peers, including them in the lesson summary.

Disregard for students' ideas was reflected in directing the discussion in such a way that their interpretations were acceptable to the teacher or brief comment and dictation of a note. It should be emphasised that two-thirds of lower secondary school students reported opportunity to express their own opinions about texts, even if their opinion varied from those presented by the teacher. However, every third student remained passive and did not participate in discussion - the teacher failed to stimulate student engagement.

One fundamental teaching objective is development of student reading comprehension skills. Every second lower secondary school student reported that Polish language teachers tried to teach them independent analysis and interpretation skills. However, most Polish language teachers interviewed had difficulties in defining a methodology which could be used in the process of interpretation. Most of them could not name any interpretation strategies beyond structural analysis and include student individual thinking and imagination or involve their emotions. This reveals lack of teacher awareness in this area. It should be emphasised that according to opinions of teachers participating in the study, theoretical knowledge offered during degree programmes was not useful for teaching the Polish language. They learnt about forms and methods of working with students during workshops and courses or from methodology textbooks. This is important, since observers indicated the limitations of structural analysis applied during lessons, such as its low level of attractiveness to students (who became bored, apathetic and disheartened), its mechanical character, schematic activity of a teacher, lack of coherence between analysis and interpretation, sometimes simply lack of interpretation and the fact that understanding of a text is not followed by understanding its axiological dimension. Other strategies for work with cultural texts would allow students to reveal their emotions, engage their imagination, give them a sense of being co-creators in its interpretation, enable them to relate text to their own experience, even though - and this has to be emphasised - not always and not every student will be able to attempt the tasks requiring creative activity.[58]

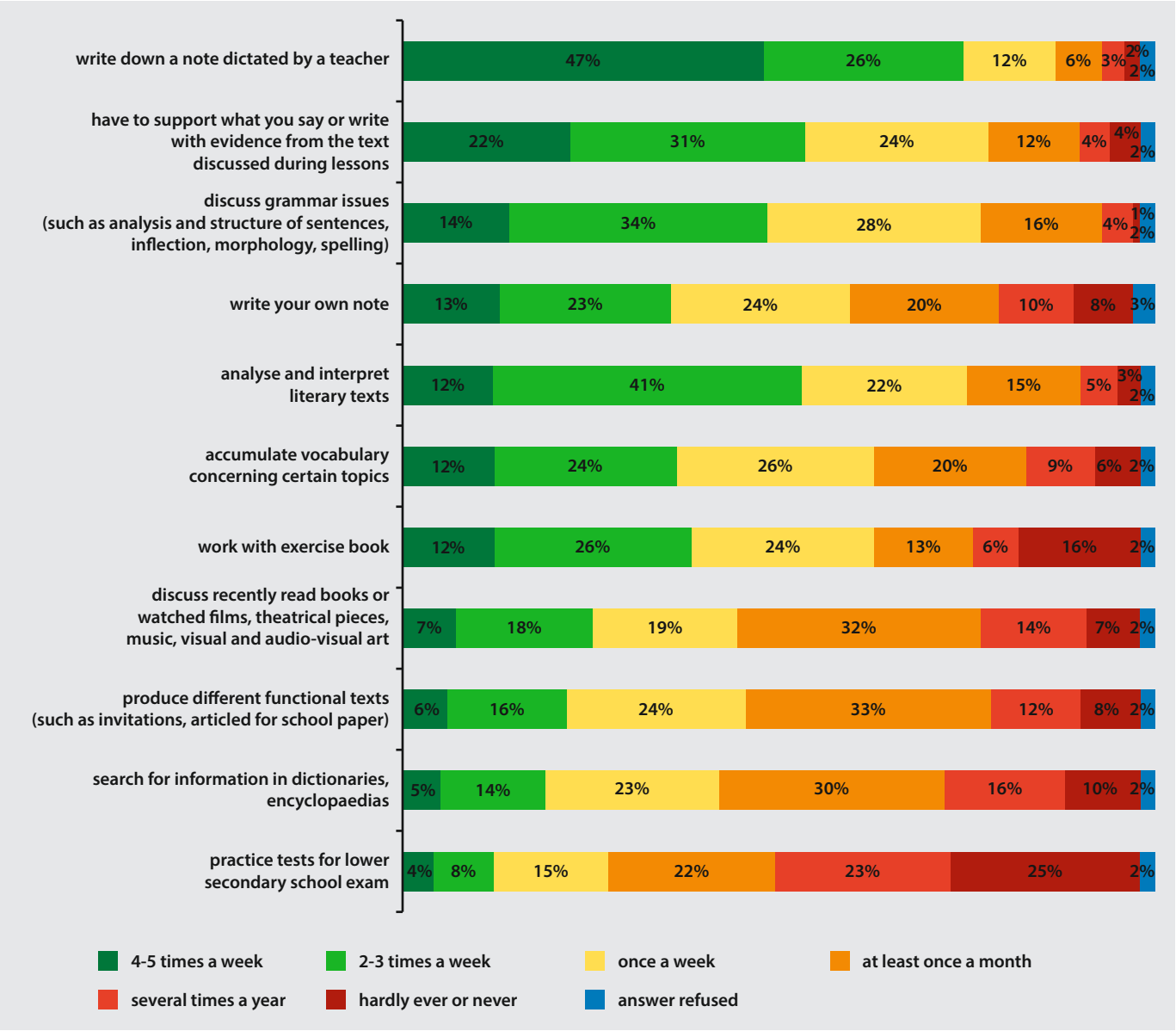
However, student declarations suggest that nearly half (47%) often felt motivated by their teachers to think about a text by asking interesting, thought-provoking questions, and every second lower secondary school student had the feeling that they could count on their teacher to help them overcome difficulties with interpretation. Almost 70% of students reported that their teacher encouraged discussion, but according to declarations of every fourth student, students themselves reluctantly participated in discussions about text. The question arises about the extent to which student activation methods support encouragement and preparation of students for discussion of cultural texts, to overcome passivity of withdrawn students - a group which often includes poorly performing students or those who avoid reading (see also subsections: *Teaching methods* and *Communication in the classroom*).

Current needs of language teaching aim at functionalised knowledge combining theoretical and practical components (Kowalikowa, 2004). Integrated and functionalised models of teaching grammar in relation to creation, reception and analysis of texts, as well as activity on all levels of education (Uryga, 1996; Bartmiński, 2004; Kowalikowa, Synowiec, 2005). Reflections on the necessity of integrated and functionalised teaching of language and literature have been present in the work of researchers for many years [Dyduchowa, 1988, Uryga, Sienko (eds.), 2005, Kowalikowa, 2006]. It has been emphasised that not all teachers abandon the systematic, normative approach to linguistic phenomena. They introduce linguistic issues, describe language from the point of view of meaning and form, emphasise correctness during separate lessons, whereas the integrated model would focus on skilled speech and writing. This models knowledge about language as a subject for teaching the language, which results in the domination of practical exercises: speaking, reading comprehension and writing. There are also suggestions for applying glotto-didactic methods to development of language competency (Nocoń, 2009).

Students interviewed noticed the difference between the course of a lesson on literature and on grammar (they identified grammar as lessons on language). Student declarations indicated that linguistic issues were introduced by means of direct instruction (information presented by a teacher or read from a textbook) and followed by exercises. In their opinion, grammar lessons were more schematic and those on literature - more varied (graph 6.5).

[58] On the need for opening students to various ways of reading see: Janus-Sitarz, *Przyjemność i odpowiedzialność w lekturze…*, 2009; eadem, *Doświadczenie lektury…*, 2012.

**Graph 6.5. During Polish language lessons in your class, how often do you... (student declarations, n=5475).**




*Source: IBE calculations from the Teaching Polish Literature and Language in Lower Secondary Schools under the New Core Curriculum study.*

It may be assumed that teachers cope better applying various teaching strategies during lessons on literature and culture than on language. It is also possible to conclude from the material gathered that during the vast majority of observed lessons (83%) communication skills were developed, but situations enabling active student involvement in developing and strengthening skills related to language awareness were only created in a quarter of cases. This is important information, since the DKG results revealed problems students experienced with mastering language-related issues. The report says: "The poorest student performance was on tasks requiring their language awareness (understood more broadly than just grammar), especially those involving reflection on the function of language forms applied in the text. Student practical skills in this aspect were particularly poor, as indicated by the disturbing results from composition assessment: over 88% of students were unable to use appropriate language, 79% had trouble with punctuation and 50% made spelling mistakes (DGK: 44).

Another issue important for teaching Polish is that teachers usually dictate notes to students (graph 6.5). It was common practice even in third grade. Such a form of information transfer does not foster student activity, for developing skills such as, formulation of oral statements or interpretation of

content and meanings, but rather promotes passivity and impairs individual thinking. Interestingly, dictating notes was more common in classes with the poorest results during the test used for the study.

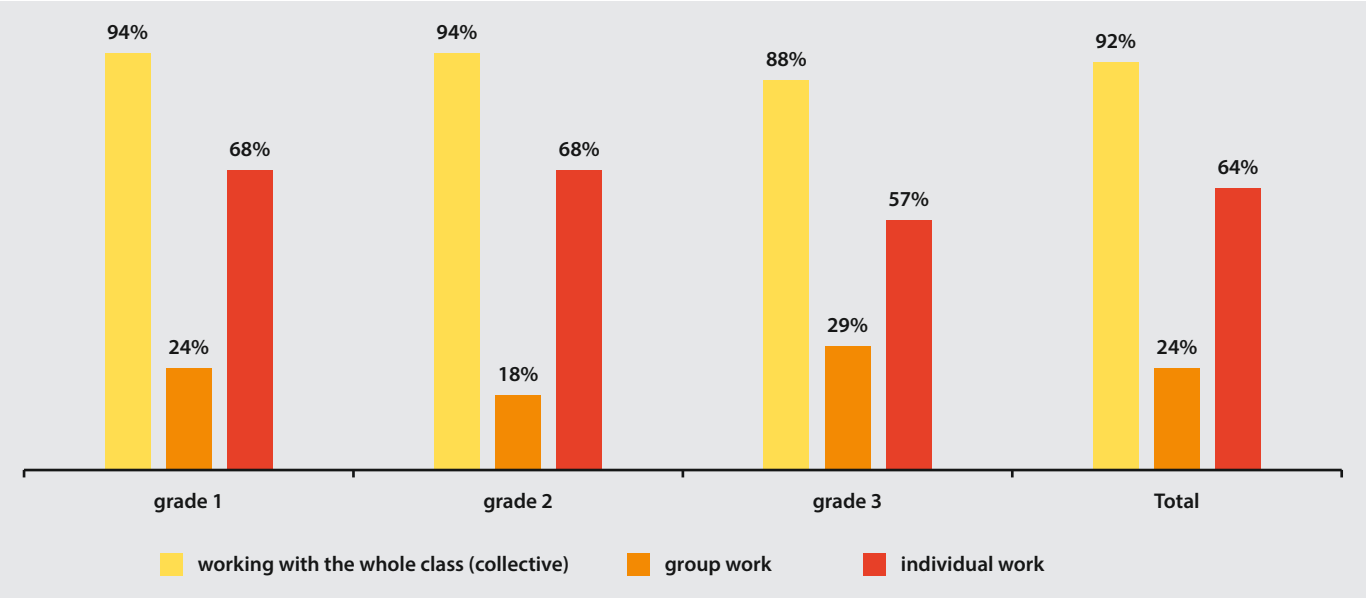
Writing a note dictated by a teacher may be a final effect of a lesson involving discussion of non-literary text, it should be emphasised that 48% of students declared writing a prepared note 4-5 times per week, but only 12% created such a note individually with a similar frequency. This situation raises even more concern, if we bear it in mind that only 6% of lower secondary school students wrote other texts individually and only 5% individually searched for information in source texts[59] It also indicates that every fifth lower secondary school student did not practice creative work during Polish language lessons.

Differentiation of student abilities and their special learning needs requires an individualised approach from teachers. As lesson observation showed, in most cases teachers adjusted the lesson pace to lower secondary students' abilities. Polish language teachers monitored students' work during lessons, making sure that they could set another task and in case of group work waited until all had finished. Student requests for more time for the task were not ignored. These observations were largely consistent with data from external evaluation, where lower and upper secondary school students confirmed that lessons were adjusted to their needs (Jewdokimow, 2013). It should be emphasised that the pace of the lesson was adjusted to the abilities of weaker students and teachers often did not accommodate the needs of the more talented students who should expect additional tasks after completing the basic ones.

Group work fosters student communication skills, ability to cooperate and responsibility; it activates passive students and stimulates additional motivation to cooperate. Unfortunately, lesson observations revealed that it was the method least frequently applied during Polish language lessons (graph 6.6). Whole-class involvement and individual student work were the most frequent types of classroom work. This also relates to the fact that teachers rarely used the project method (one third of teachers with longer experience have never included students in project work). This is disturbing, because teamwork, including engagement with educational projects, develops a wide range of competencies and can become an effective means to stimulate students who avoid active participation in class.

[59] Dictation as common practice in schools limiting students' autonomous responsibility was discussed by Konarzewski (*Reforma oświaty*…, 2004: 65).

**Graph 6.6. Which approaches to class work were used by teachers? (observation results, n=151)**




*Source: IBE calculations from the Teaching Polish Literature and Language in Lower Secondary Schools under the New Core Curriculum study.*

### 6.4.2. Teaching methods

The classification of teaching methods is far from ambiguous, in terms of both methodology and scope. In this study, the established understanding of methods analysed was adopted (see, for example, Nawroczyński, 1961; Nagajowa, 1980; Chrząstowska, 1987; Uryga, 1996; Bortnowski, 2005). The presence of the following teaching methods during Polish language lessons was observed by the study: direct instruction (lecture, instruction, description), discovery method (heuristic), problem solving and student activation methods (various forms of discussion, literary trial, impressionistic methods) and other methods supporting analytical and interpretative work.

Teacher interviews and Polish language lesson observations revealed that the most popular teaching method was discovery (heuristic). Three quarters of teachers interviewed, declared using this method, more often in the lower grades of lower secondary school. It should be noted that of 108 observed lessons during which teachers applied the discovery method, in only 8 cases was it the only method used. It was usually combined with direct instruction and problem solving. Observers positively assessed the use of heuristic techniques for purposes such as recalling previously learnt material, formulating conclusions and summaries, analysis and interpretation of cultural texts. Lesson observations confirmed that the use of discovery method required a thorough reflection on the content of questions which would not limit possible student answers and would activate the whole class. The second most frequent group of methods was direct instruction, usually applied in first grade. Similarly to heuristic techniques, they are usually combined with other methods, especially discovery and problem solving (out of 79 lessons during which teachers applied direct instruction, in only 5 cases was it the only method used). Surveys showed that direct instruction was used by over half of teachers. This is useful for organising the course of a lesson and for introducing historical and cultural context, but lesson observations demonstrated that its efficiency depends on using it in proportion.

Nearly half of the teachers used problem solving and putting students in the role of researcher. These methods were also combined with other methods (discovery, instruction and impressionistic). Lessons observed showed that problem solving inspired students' independent thinking, developed their argumentation skills, encouraged them to express opinions and engage with in-depth work with texts. The use of the discovery method is not always effective for poorly performing students.

It is, therefore, more obvious that it is necessary to combine teaching methods and adjust them to abilities and the skills of underachieving young people.

Student activation methods, such as mind maps, meta-plan, brainstorming, decision tree, project-based method, thinking hats, happening, drama and various forms of discussion were not very popular, only one-fifth of teachers used them. A similar pattern applied to methods supporting analysis and interpretation, such as interpretation hypothesis, key words method or inter-semiotic translation, used by only one fifth of Polish language teachers. The least frequently used method was literary judgement. Drama was also rare. Interpretation hypothesis and various forms of play with a literary text were slightly more popular. During most observed lessons student activation methods were combined with other methods. During 40 observed lessons using student activation methods, only one did not accompany other teaching methods such as the heuristic approach, direct instruction or problem solving. It should be added that activation methods were more frequently used by teachers with less work experience. Low frequency of student activation methods during lessons may owe to teachers not being aware of their benefits. This was confirmed by external evaluations which suggested that teachers had difficulty defining methods they used, especially student activation techniques (Swat-Pawlicka, Pawlicki, 2012).

Interestingly, despite the small proportion of teachers adopting student activation methods, the methods were most willingly applied to teaching independent interpretation. This is important, because the ability to interpret literary and non-literary cultural texts is one of the key competencies intended for development during Polish language lessons. The 2006 and 2009 PISA and 2012 DKG results demonstrated that Polish schools are ineffective in developing complex skills (tasks requiring several connected operations and independent thinking, as well as ability to solve atypical problems). The 2012 PISA results revealed Polish students' improvement of reading literacy and interpretation skills. In 2012, they achieved the best results since the beginning of the study, which suggests that the number of students at risk of social exclusion owing to poor reading skills had been gradually decreasing. Conflictingly however, results from the last round showed that Polish students were good at retrieving information, reflection and evaluation, but had problems with text interpretation[60].

Teachers are aware of the efficiency of students activation methods for developing independent thinking, as well as communication and teamwork skills. According to teachers interviewed, the efficiency of methods depends on the particular class and situation. The key to success is varying their use, so that students are not bored and every lesson is different. This would agree with Stanisław Bortnowski's opinion, describing modern Polish language teaching as an implementation of four strategies suggested by Wincenty Okoń (instruction, research, action and feeling), as well as method rotation and gathering experience. Bortnowski critically assessed limiting student independence by giving them ready-made information, fighting student opinions, dictating and reducing lessons to performing textbook tasks (Bortnowski, 2011). It should be remembered that an open teaching style fosters better student Polish language performance in that part of the lower secondary school exam (Dolata et al., 2013; Koniewski, 2013).

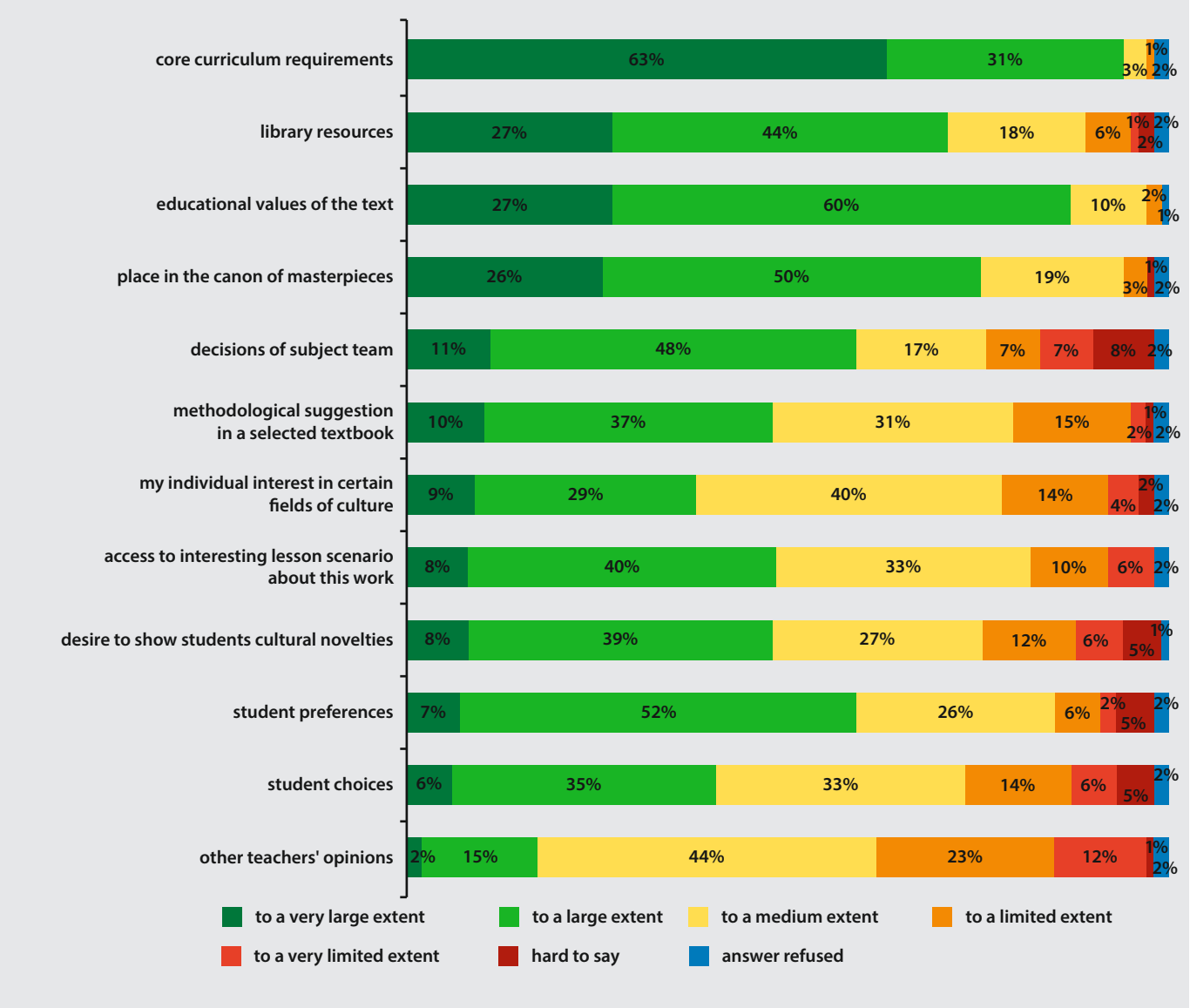
## 6.5. Selection of required reading and other texts

Teachers face the challenge of preserving the subjectivity of the learning process and autonomy of literature while pursuing learning objectives (Uryga, 1996). The main barrier to effective development of literary culture seems to lie in the antinomy between compulsory learning and student needs, especially ludic ones (Handke, 1979; Chrząstowska, 1979). One of the key components of shaping readership attitudes is adequate motivation for engagement with reading (Brophy, 2012).

[60] The need for and ways of developing interpretation skills was discussed in Janus-Sitarz, *Przyjemność i odpowiedzialność w lekturze…*, 2009; Biedrzycki, 2012.)

School reading can awaken emotional or cognitive engagement by emphasising important reasons for pursuing knowledge acquired through reading and the relation between the real world, known to students by their personal experience and the world as represented in the literature (Bielak, 2008; Fiszbak, 2008). Therefore, texts discussed in school should be interesting and students should know why a particular reading list is set (preferably designed with their participation) and receive guidelines for interpretation of required reading (Guthrie, Alao, 1997; Guthrie, 2008).

**Graph 6.7. To what extent do the following factors influence your choice of cultural texts other than literary works? (n=162)**




*Source: IBE calculations from the Teaching Polish Literature and Language in Lower Secondary Schools under the New Core Curriculum study.*

Teachers believed that the list of required and optional reading in the core curriculum was sufficient. According to their declarations, they usually chose texts close to the problems of teenagers. However, they chose books from the literary canon rather than those more recently published. The main reason for choosing optional reading was the presence of a book in the core curriculum. Other reasons included: opportunity to implement educational objectives, the text's presence in the literary canon, relevance of the topic, availability in the school library and the book's relation to the teaching plan implemented. Teachers declared that they discussed a selected example of literature for young adults with students. Students had an influence on the choice of book, but

before the teacher accepted the students' proposal, they had to read it in order to make sure that it was a worthwhile and did not contain any "inappropriate" message. This is important information, especially in the context of motivating student readership (see subsection: *Success and difficulties of Polish language teachers in everyday work*).

As for non-literary materials used during Polish language lessons, the most common were works of art representing painting, graphic arts and drawings, usually reprinted in textbooks. Visual representations usually provided context for the literary texts discussed and served as a historical and cultural background. The cultural texts most willingly introduced by teachers were films: adaptations of obligatory reading, documentaries and contemporary cinema. Polish language teachers reported that students willingly participated in film-based lessons, because their content was an important reference point for their own problems. The language of cinema appeals to young people's sensitivity and, therefore, is useful in motivating students to reach for literature and facilitates their reception and interpretation of literary texts (Bobiński, 2011). Music was used much less frequently, it was treated as attractive illustration rather than for analysis and interpretation. The least frequently discussed texts during Polish language lessons included products of popular culture: entertainment shows and TV series, comic books, popular novels, but also news and current affairs programmes. This is alarming, but accounts for the fact that young people have constant access to popular culture and they constitute its audience. Not attempting analysis and interpretation of such cultural content in school and, therefore, not fitting students with tools enabling their understanding and evaluation may lead to their uncritical reception (Myrdzik, Latoch-Zielińska 2006; Łazarska 2008). Lack of analysis of informational content and cultural texts available through new media may lead to a failure to develop the ability to distinguish between facts and opinions and, consequently, expose young people to manipulation. This problem is related to the fact that while selecting non-literary cultural texts, teachers respect students' suggestions or preferences to a minor degree. Similar to the case of non-obligatory reading, they are guided rather by requirements of the core curriculum, presence in the canon or perceived educational value (graph 6.7).

It should be noted that teachers appreciate the value of skills such as information retrieval and verification of the reliability of sources. Almost every third teacher (30%) devoted five or more lessons per year to developing these skills. Another 40% of Polish language teachers organised three or four such lessons in a school year. Moreover, every fourth teacher conducts classes to develop students' ability to retrieve information and verify sources on the internet at least 5 times per year. Another 31% conducts three or four such classes per year. These findings indicate that teachers have some awareness of the importance of developing competencies related to new technologies, especially of making students aware of the impact electronic sources of information have on creating and perceiving reality. This is still, however, an area of teaching activities which should be more present in daily classroom work.

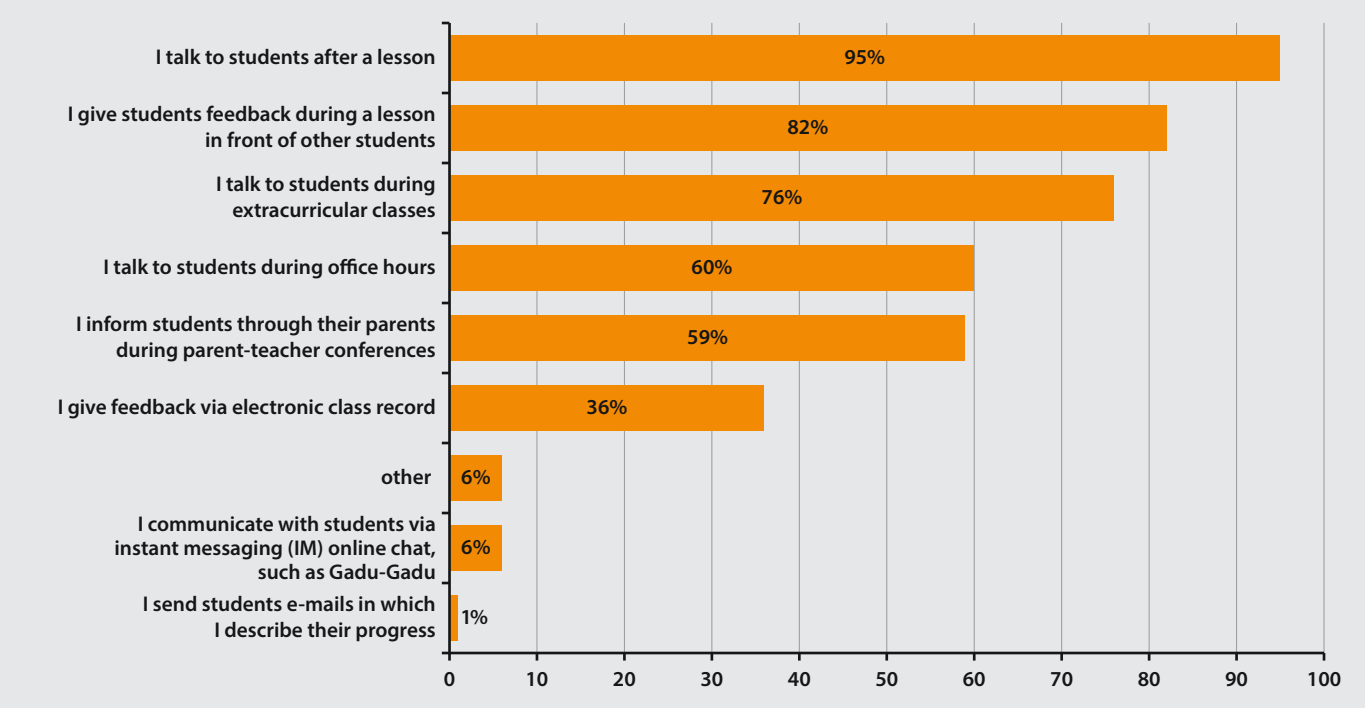
## 6.6. Communication in the classroom

Communication during lessons involves mutual relations between students and a teacher which create classroom climate and means of exchanging information about the course of the teaching process, requirements, progress and educational shortcomings, as well as ideas for improving the quality of teaching.

Polish language teachers can work with passion. Their engagement with lessons is reflected in students' interests. Good communication during lessons is fostered by such activities as professional lesson preparation, using various teaching aids, motivating students' work, using new technologies, introducing interesting facts and varied cultural texts and a positive attitude towards students. Such an approach is accompanied by student engagement manifested in asking questions and showing an interest in issues discussed during lessons. The more elaborate the lesson scenarios and

comfortable atmosphere, the more active students are. The more a teacher encourages student participation, the more frequently students ask questions. The study indicates that the vast majority of teachers encouraged active student participation and there is an observable upward trend: from the first grade onwards, there is a growing effort to stimulate active student participation in lessons.

**Graph 6.8. How do you inform your students about their progress in learning Polish language? (teacher declarations, n=162)**




*Source: IBE calculations from the Teaching Polish Literature and Language in Lower Secondary Schools under the New Core Curriculum study.*

When the teacher's requests form a conceptual whole (as indicated particularly by lesson observations), they inspire active student participation and vice versa. There were lessons which did not mobilise individual student thinking, usually when frontal teaching methods were dominant and the basic teaching tool was the textbook (see subsection: *Forms of work during lessons*). An important incentive for students was the opportunity to communicate their own feelings and emotions, reading experiences and reference to their own general knowledge[61].

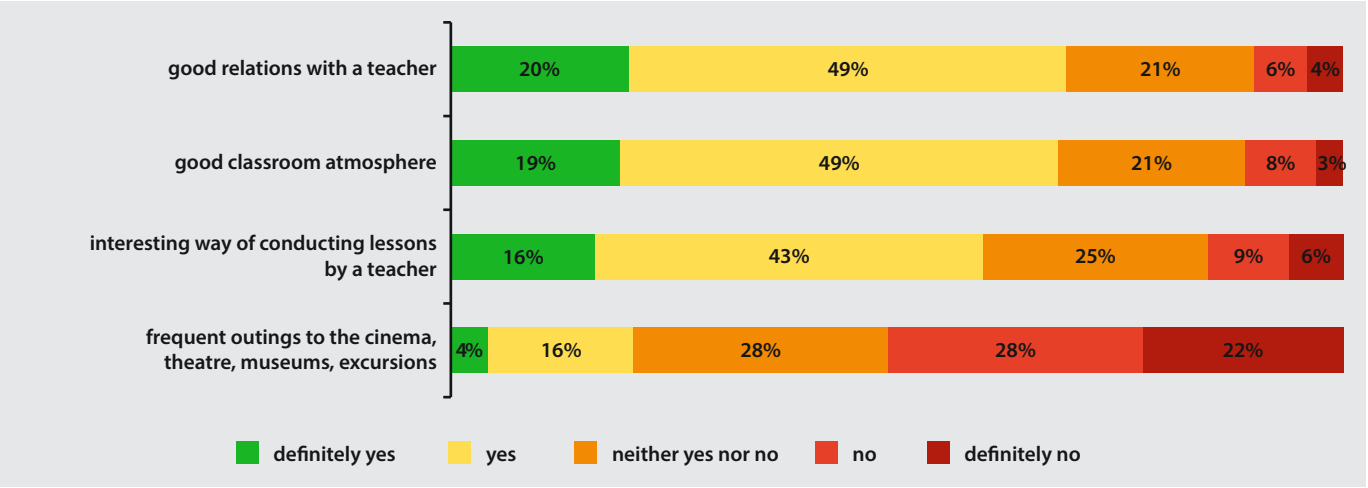
The frequency and means of providing students feedback on their achievements and progress is among the basic vehicles for teacher-student communication. As the interviews with teachers showed, the most popular way to inform students about their progress was decidedly. conversation during lessons or extracurricular classes (graph 6.8). It is worth noting that electronic dialogue with students was rare.

Successful student-teacher communication is reflected in positive relation between students and teachers. Such an atmosphere was observed during many lesson and confirmed by lower secondary school student reports (graph 6.9). According to student opinions, good atmosphere, respect and mutual friendliness dominated Polish language lessons.

Students emphasised that teachers had positive attitudes towards them and declared that Polish language teachers were usually pleasant, likeable and always ready to help. Most teachers handled their classes rather well. The best performing students had the highest praise for their teachers - 83% described their Polish language teachers as pleasant, likeable and always ready to help.

[61] This was connected with the need for cross-curricular integration based on Polish language teaching correlated with other subjects postulated by some researchers, even though Konarzewski's research showed that there is no consensus concerning this issue (Konarzewski, *Reforma oświaty…*, 2004; Malicka, 2012).

**Graph 6.9. To what extent do these statements describe your Polish language lessons? (student declarations, n=5475)**



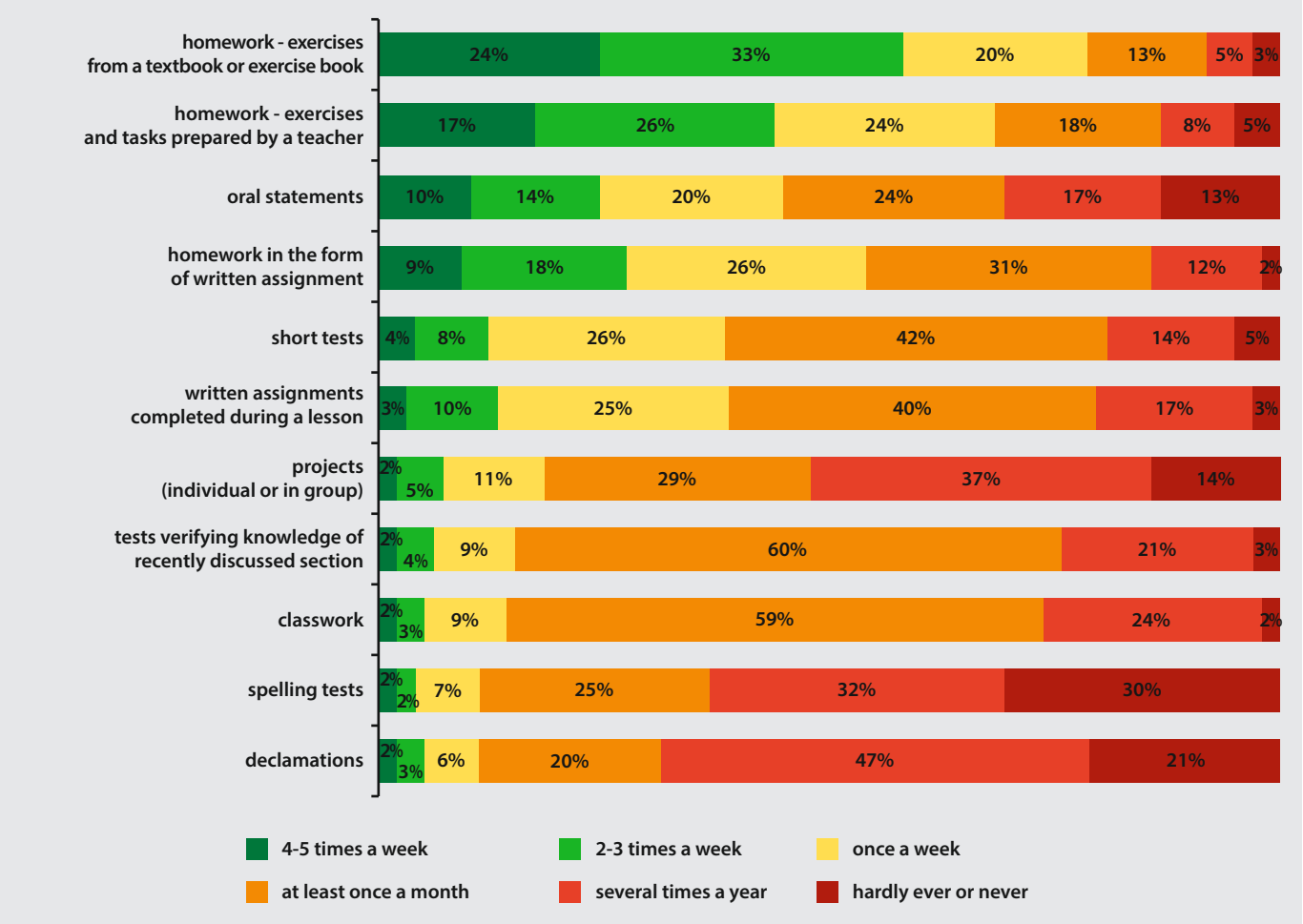

*Source: IBE calculations from the Teaching Polish Literature and Language in Lower Secondary Schools under the New Core Curriculum study.*

Teachers are often unable to mobilise lower performing students to learn. A group of students who do not believe in themselves and are passive during lessons presents a challenge for teachers, who should work on ways to activate them and motivate them to work. It is also worth noting that almost all Polish language teachers undertake additional individual work with students experiencing learning difficulties (even though according to the opinion of every fifth student who did not perform well in the test, their Polish language teachers were undemanding). Individualised learning comprises working with a counsellor or school psychologist and conducting remedial courses. In their daily work, teachers try to adjust their requirements to their students' capabilities, rewarding small learning successes or offering support with homework. However, it was also observed that talented students did not find support or the opportunity to develop their talents.

## 6.7. Verification and assessment of student work

Reporting assessment issues, Polish language teachers declared that they used the Subject Assessment System (PSO) developed by the Polish language team and based on the In-School Assessment System. The elements of PSO, available to students and parents, related to assessment of written assignments, are coherent with lower secondary school examination assessment criteria. Teachers evaluate the content, form, spelling and punctuation, style and vocabulary of student writing. The most common means of verification are shorter and longer tests (related to reading assignments, at the end of a section, grammar). Polish language teachers assess not only written assignments, but they also take student level of activeness during lessons, oral statements (answers to teacher's questions) and group work into account. Teachers emphasised that they differentiated and individualised assessment criteria according to specific student learning needs. Some assignments, testing student knowledge are based on exercises typical for the lower secondary school exam in the form of a test. The end-of-year assessment is based on single marks, including the end-of-term (mid-year) mark, in addition to educational activities and behaviour. The end-of-year mark is based on a weighted average rather than the arithmetic mean.

**Graph 6.10. How often does your teacher assess skills acquired during Polish language lessons by means of (n=5475):**




*Source: IBE calculations from the Teaching Polish Literature and Language in Lower Secondary Schools under the New Core Curriculum study.*

According to student declarations, the most frequent means of verifying student skills was completing an exercise from a textbook (one-fifth of students declared that they were given such tasks 4-5 times per week) and homework based on an exercise created by a teacher (graph 6.10). Students reported that their teachers' intention was to motivate underachieving students to work by using short and long tests. A comparison analysis of student surveys and test results revealed that the lowest performing students were most frequently subjected to various forms of verification: short and long tests, spelling tests, recitation, etc.

The problem is that students do not receive clear feedback from teachers on the effects of their oral statements often. Analysis of material gathered during lesson observations showed that nearly 80% of teachers did not mark oral statements. Of those who did mark such activity, only 15% explained the mark given. This general lack of feedback on student communication skills and approaches to formulating oral statements makes it impossible to define mistakes or deficiencies and eliminates the possibility of evaluation.

An important aspect of motivating students to develop Polish language competence is by setting written assignments as homework. According to the teachers, they often set homework designed to verify knowledge and also practice subject skills. Lower secondary school students were given the task of writing an extended statement requiring search for information from relevant sources. Three in four teachers set such homework at least once per month and every third teacher - 5-6 times per semester. Interestingly, written assignments were most often set by teachers from smaller towns - it may be related to lower student numbers in schools there.

There is, however, a connection between the amount of homework set and the way teachers assess it. Feedback has a special motivating function as it offers students information about progress, what they do well and what they should improve (Sterna and Strzemieczny, 2012; Borek and Domerecka, 2012).

Slightly over half of teachers marked and commented on all written assignments. The greater the regularity of written assignments, the more rarely Polish language teachers' feedback - this is a cause for concern. One third of teachers individually discussed most student work and only 15% discussed all assignments.

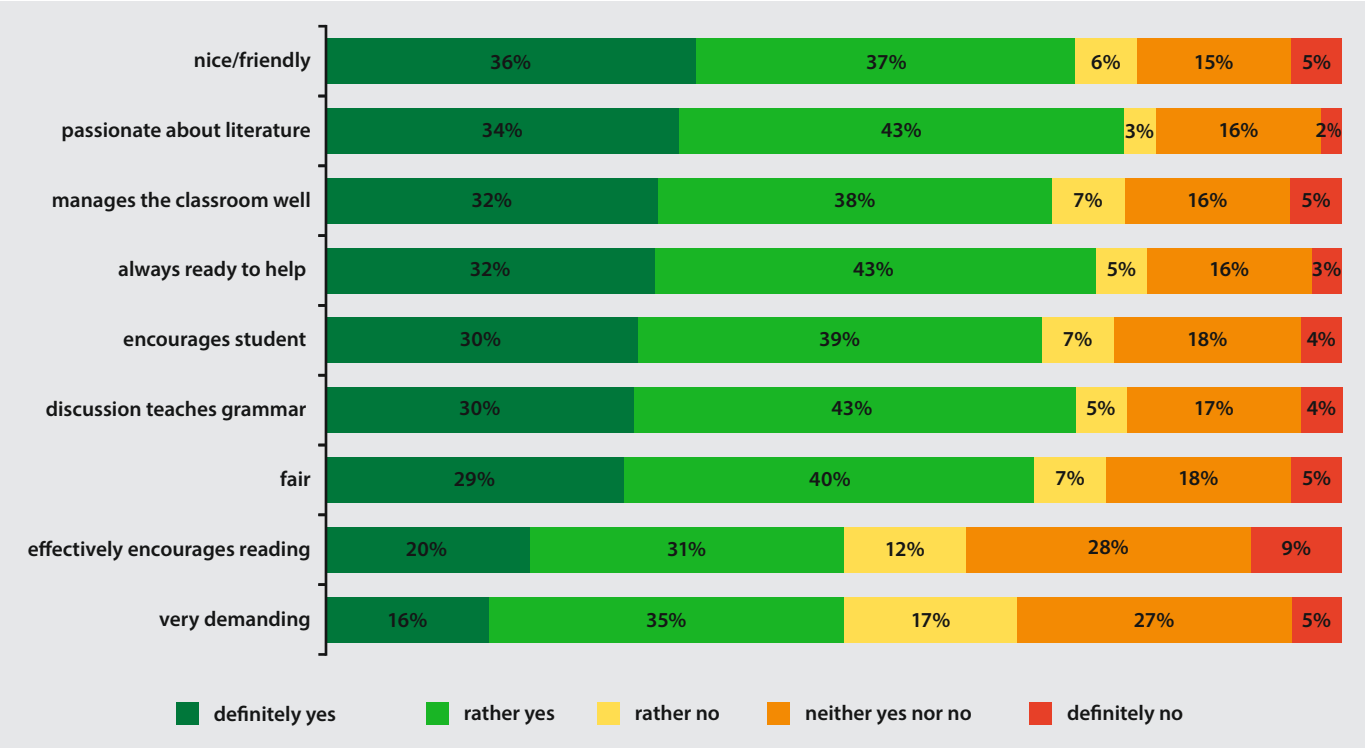
68% of lower secondary school students reported that teachers usually assessed written assignments by marking and explaining the mark. However, according to every fourth student, their Polish language teacher only gave marks without explanation. Analysis of research material reveals the importance of clearly communicated criteria for marks - 73% of students aware of the assessment criteria for all forms of testing for their knowledge and skills recognised their marks as fair, whereas for students who did not know the assessment criteria, this proportion was only 48%. It should also be noted that the biggest differences in evaluation of teachers' activities were between high and low performing students - better students much more frequently believed that marks given by their Polish language teachers were fair (76%) than their low-performing classmates (49%).

Another interesting observation was that at the beginning of work with a new class, (90%) Polish language teachers referred to new students' results in primary school external tests and a similar proportion carried out similar placement tests (usually teachers with longer teaching experience).

## 6.8. Success and difficulties of Polish language teachers in their everyday work

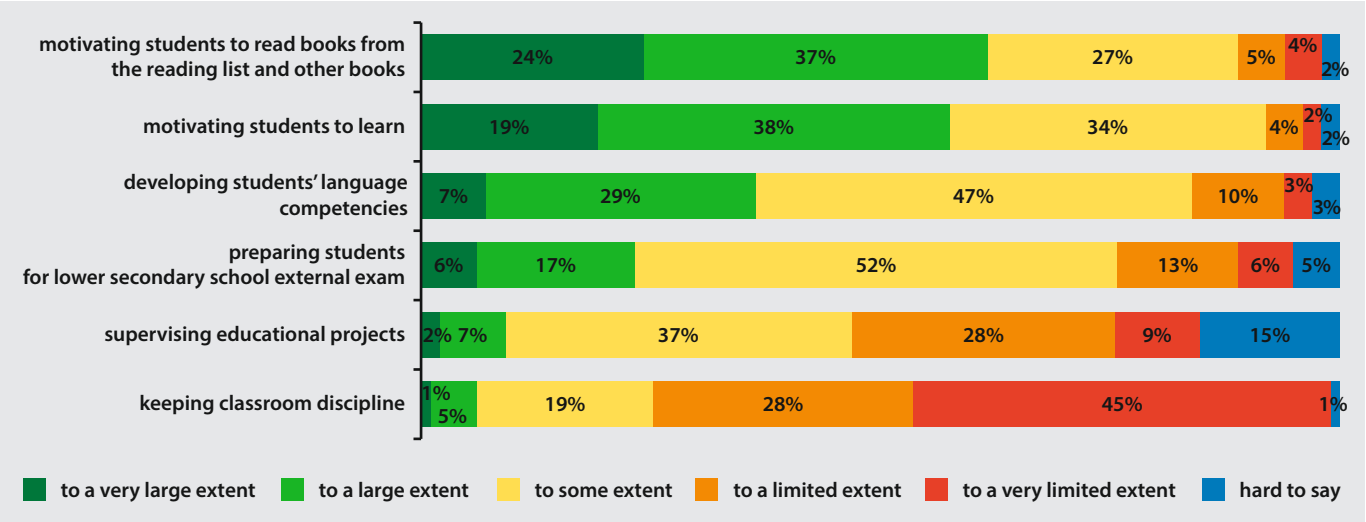
Polish language teachers' achievements and difficulties are worth approaching from their personal perspectives. Most teachers participating in the *Teaching Polish Literature and Language* study were satisfied and enjoyed teaching. They kept developing their qualifications, usually without direct external motivation but rather on their own initiative. They undertook additional training, post-graduate studies and exchanged experiences with other Polish language teachers or self-educated. The effects of their teaching efforts can be evaluated not only by their students' performance - their students' opinions provide another alternative measure. According to lower secondary school students, Polish language teachers were passionate about literature, friendly and helpful. Most Polish language teachers were fair and managed the classroom well (graph 6.11).

**Graph 6.11. Tick on the table below the features that apply or do not apply to your Polish language teacher. (n=5475)**




*Source: IBE calculations from the Teaching Polish Literature and Language in Lower Secondary Schools under the New Core Curriculum study.*

**Graph 6.12. To what extent do you find the elements of the teaching process listed below challenging during Polish language lessons? (n=162)**




*Source: IBE calculations from the Teaching Polish Literature and Language in Lower Secondary Schools under the New Core Curriculum study.*

Student feedback was compatible with teachers' self-assessment. Polish language teachers drew satisfaction from their work and endeavoured to combine everyday teaching with educational practice. They believed that Polish language teachers shaped role models and promoted the hierarchy of values. Teacher declarations were also confirmed by the opinions of two thirds of students who reported that their Polish language teachers encouraged discussion during lessons. However, only every second lower secondary school student agreed that their Polish language teachers effectively encouraged their reading. This confirmed, yet again, that motivating students to read is the most difficult task for teachers. Motivating student readership is teachers' failure rather than success. Teachers themselves

indicated student poor motivation to learn and especially to read literature, both from the school reading list and other books as one of the main problems in their teaching. Another barrier was related to poor student language competence - every third teacher indicated problems with developing these skills (graph 6.12).

Analysis of research findings confirmed that some lower secondary school students were unwilling to read literature. A large number of students did not read longer or complex texts, both those who did not read books outside the school reading list (every fifth did not read them at all) and those who did not read even books from obligatory reading list - 12%, admitted that they did not read at all and every third lower secondary school student read only sometimes.

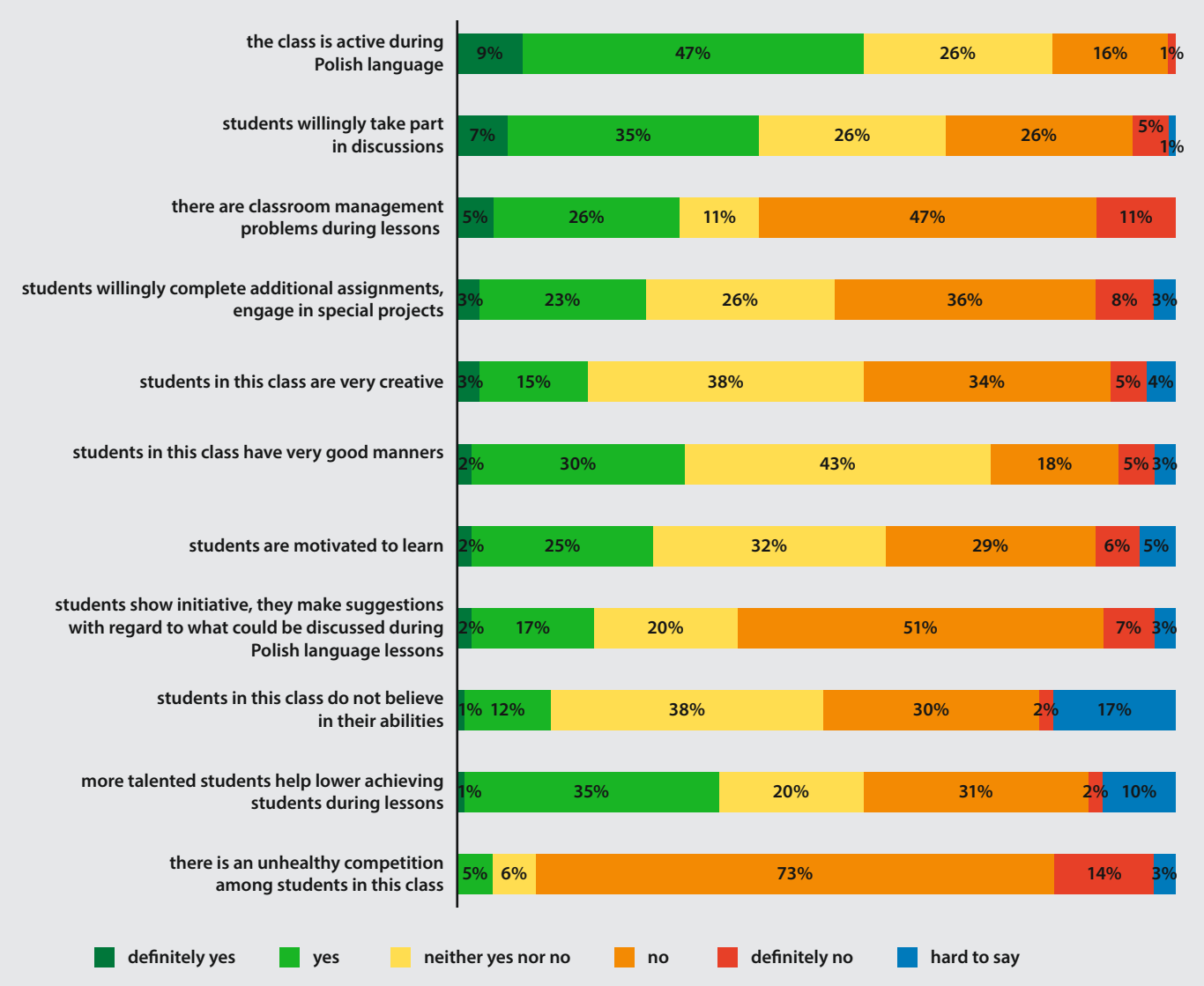
If we take books outside the school reading list into account, 15% of lower secondary school students reported that they had not read any in the last six months (9 % of girls and as many as 21% of boys). These findings are coherent with the national study on lower secondary school readership (Zasacka, 2012). It is worth noting that students reading more books performed better in tests conducted as part of the *Teaching Polish Literature and Language* study.

Teacher declarations concerning challenges they experienced in their teaching can be confronted with their opinions about the class they teach (graph 6.13).

According to Polish language teachers, most students were active and engaged in discussions during lessons, but there was also a group of passive students who were visibly uninterested in lessons, showed no invention related to its course and were not creative. This is related to low student self-esteem and lack of belief in their own capabilities. The correlation between lower secondary school student self-esteem and their test results revealed that those who believed in themselves performed better in Polish than their peers who were not confident of their abilities. Analysis of external evaluation results demonstrated that primary school teachers rated their students' engagement during lessons more highly than their colleagues from lower and upper secondary schools. On the other hand, with age, student activity became more independent, they showed initiative in proposing their own ideas and had the courage to take part in discussions (Tędziagolska, 2013). This tendency could definitely become an inspiration for teaching activities directed towards effective engagement of students in the classroom.

Lower secondary school students are adolescents – experiencing intensive physical, cognitive and emotional growth (Bardziejewska, Brzezińska, Ziółkowska, 2003; Erikson, 1997) which may have various dynamics and place them at risk of disorders. Lesson observation, as well as student and teacher declarations did not reveal any serious problems with maintaining classroom discipline during lessons. Teachers admitted to minor problems with keeping the classroom in order during lessons and their students' bad behaviour. They undertook activities aimed at elimination of unwanted behaviour or activity inconsistent with rules of social conduct, such as organising individual meetings with students displaying behavioural problems and with their parents. These meetings helped to provide a better understanding of a student's motives and effectively influence their behaviour. Teachers also proposed contracts regulating rules of conduct for both parties and, if there was such need, they referred to its regulations. They referred to students' manners, necessity to respect other people, they tried to engage students with behavioural problems during lessons by directing questions towards the least interested students. The choice of texts for discussion became especially important in view of their "difficult age". Daily teaching should include texts about adolescent problems, such as emotional instability related to development of their sexuality, need for integration with a peer group and a problem with defining authorities. The study results revealed, however, that teachers avoided subjects related to adolescence, eroticism, as well as issues such as gender equality, old age or death.

**Graph 6.13. To what extent do the following statements describe the surveyed class (in the context of your lessons)? (n=308)**




*Source: IBE calculations from the Teaching Polish Literature and Language in Lower Secondary Schools under the New Core Curriculum study.*

## 6.9. The Polish language teacher - an ideal picture

Teachers described in this chapter indicated the qualities desired of a Polish language teacher, such as adequate educational background supported by knowledge and teaching skills, general orientation in cultural and socio-economic life, as well as a vocation to be a teacher and sense of responsibility. Professional qualifications, authority and ability to reach students enable achieving goals based on the process of individual acquisition of knowledge by students and arousing their curiosity. Polish language teachers see themselves as guides, masters and partners supporting students in their multifaceted development. It should be noted, however, that attitudes and professional profiles described here refer to lower secondary school teachers, even though the qualities of a good teacher presented here depict good teachers at all levels of education.

Teachers' opinions were coherent with those of researchers, who emphasise that many qualities of a good Polish language teacher are universal, founded on educational tradition and therefore remain valid despite continuing changes. The objective qualities of Polish language teachers

include knowledge of native and foreign literature, orientation about current research, insight into issues related to effective communication, linguistic accuracy, participation in cultural life, ability to arouse so called higher needs and interests in students, positive influence on their minds and emotions. Polish language teachers should enrich their teaching skills and adjust to contemporary challenges (Kowalikowa, 2006)[62].

Good Polish language teaching practice results from observing lessons and teacher interviews. Development of skills and competencies rather than transfer of dry knowledge unrelated to practice is crucial. A good teacher develops students' skills for creating statements and functionalising their linguistic knowledge. The selection and appropriate use of teaching methods are important. The most effective teachers can flexibly adjust methods to objectives and the nature of skills to be developed, lesson theme, text discussed, teacher's personality as well as students' abilities and competencies. In the best performing classes in the study, various teaching methods were applied, usually tied to the individual lesson. Typically, however, they were used to initiate in-depth understanding of text, rousing student activity and independent interpretation. Such methods allow excursion beyond the limits of structural interpretation, reduced to recognising the basic elements of the text. Lesson observation enabled identification of model bundles of teaching methods reflecting good teaching outcomes:

- discussion based group work using interpretative hypothesis and elements of direct instruction;
- heuristic and problem solving, which activate a combination of structural and hermeneutic reading strategies resulting in student activity and their actual interpretative passion;
- heuristic based discussion employing brainstorming and mind maps;
- problem solving combined with heuristics and elements of discussion;
- heuristics and problem solving combined with lecture (in the form of a multimedia presentation) and attempts to apply intertextual strategy.

These examples refer to the particular lessons observed and cannot, of course, become the model for how to apply teaching methods, but their presentation in this chapter allows illustration of the effectiveness of a thought-out teaching strategy based on combined ways and means. Such activity should become the foundation for model Polish language teachers.

Both teachers and students should be actively engaged in a lesson. Ability to motivate students' own inquiries, creative reception of cultural texts, activities involving students' imagination and creativity, willingness to reach for a text and participate in activities aimed at developing the skills described in the core curriculum is important. Analysis of the study demonstrated that those students who positively evaluated their relationship with a Polish language teacher, perceived their teacher as passionate about literature, encouraging students to participate in discussions and teaching independent analysis and interpretation, also performed better in tests. Students achieve better results when they have an opportunity to express their opinions about text and are inspired to think about it, stimulated by a teacher's interesting questions.

A good Polish language teacher treats the textbook as a teaching aid and source for particular assignments or exercises rather than as the main determinant of a lesson. A teacher should analyse such publications in detail, from the point of view of implementing the objectives set by the core curriculum and then design additional materials, adjusting them to the competencies of a class and teaching objectives. They should engage, making lessons more interesting by using texts from outside those proposed by the textbook - they should find materials of potential interest to students and try to include contemporary topics important from a student perspective.

Polish language teachers value support and promotion of readership, since deficiencies in this area lead to barriers and teaching problems. They encourage students to read texts from the reading

[62] It is worth noting that Polish language teachers' competencies became a topic for reflection of participants of a national conference *Kompetencje nauczyciela polonisty we współczesnej szkole* in Warsaw, 2006 and I Kongres Dydaktyki Polonistycznej in Cracow, 2013.

list, because if they are not familiar with the book under discussion, it is difficult to conduct a lesson about it. A good Polish language teacher also makes an effort to motivate students to read books from beyond the reading list but attractive from the point of view of their interests. It is important to include students' suggestions with the non-compulsory reading list.

In marking written assignments, a good Polish language teacher is fair, but applies varied and individualised assessment methods, including feedback provoking remedial actions. Students should know and understand the criteria applied to assessment of their work and a good teacher should be fair and consistent in their application. A good teacher considers student activity. Evaluation of knowledge is clearly separately identified to assessment of behaviour.

The mantra to focus the essence of these postulates can be found in the title of an article by Zenon Uryga *Zadanie polonisty w gimnazjum – zaprosić uczniów do udziału w kulturze* [The task of a Polish language teacher in lower secondary school] to invite students to take part in culture (Uryga, 2009)[63]. The author offered suggestions inspiring ways of applying this theory into practice. It was based on the principle of cooperation with students in planning and organising work with text and linguistic issues. Teachers should bring students closer to texts read by directing their attention towards more personal experiences - emotional, aesthetic, moral, social and outlook. Polish language teachers should also confront the common practice of taking part in cultural activities with the expectations associated with high level culture. They should arouse students' interest in the literary canon by referring to various cultural references[64]. Polish language teachers should develop student linguistic skills and accuracy by allocating time to speak to each student and linguistic operations should be functionally related to the main lesson topics so that the linguistic awareness became a disposition integral to literary and cultural education (it is connected with developing the skill of "talking about feelings" in the context of cultural texts, Gajak-Toczek, 2007). Polish language teachers are given the task of developing students' ability to learn, use available sources for gathering and processing information in close correlation with developing the willingness and ability to self-educate (Uryga, 2009).

The study clearly demonstrated Polish language teachers' awareness of not being the main source of widely conceived knowledge of Polish language and culture for their students. Ready access to information resulting from development of the internet in a way forces teachers to be open to new technologies and their use during Polish language lessons. Importantly, teachers have ambitions to teach their students how to use reliable sources of information, such as internet dictionaries, encyclopaedias and how to avoid incidental sources.

Returning to the ideas discussed in the introduction to this chapter, the new challenges Polish language teachers face do not erase the traditional qualities of Polish language teaching (Budrewicz, 2011). One of the factors influencing the efficiency of Polish language lessons is still the educational awareness (Perzycka, 2000) understood, not only as "the complex of knowledge, skills, interests and habits, but also, as initial thought and outlook development" (Perzycka, 2000: 161). What is involved here is primarily awareness of objectives and teaching methods (Perzycka, 2000). This relates to issues such as Polish language teachers' internal motivation for work and inscription of the challenges into its integral character. Polish language teachers need to understand the changing needs of students and create conditions in which they can elucidate their own "idea for identity", to quote Zofia Budrewicz (Budrewicz, 2011: 74).

---

63 Researchers also point out the role of values in development of students' personal and cultural identity (Myrdzik, 2007).

64 Elżbieta M. Kur used Antoni Libera's book title, "Madame", to describe teachers who can indicate interesting literary references and motive students' interesting interpretative ideas, as opposed to Gombrowicz's "Bladaczka" (Kur, 2007).

# 7. Mathematics teachers

## 7.1. Introduction

Authors:
*Monika Czajkowska*
*Margaryta Orzechowska*

Mathematics is an essential subject constituting the cornerstone of education. It is embraced by the curriculum since the first grade at primary school, or even since preschool and continued until the Matura examination. Mathematical content is included in the curricula of many higher education programmes. "There are many views and opinions as to what school mathematics education should provide (and why), but all these views share the underlying belief that a good mathematical background is beneficial to individuals and entire societies. The benefits include common values, such as strengthening the individual's social position, acquiring logical thinking skills to enable making the right life decisions, critical thinking, precision of expression, etc." (Żeromska, 2013, 9–10). However, mathematics is regarded as one of the most difficult subjects to teach and learn, partly because of the abstract nature of mathematical concepts, its deductive character and specific language. Questions about the most effective way to teach this subject, the competencies of a good mathematics teacher and the preparedness of young people to work in this profession, especially in the context of current technological, social, cultural or economic changes, have remained open for years.

The portrait of the mathematics teacher and their work outlined in this chapter was created on the basis of three studies conducted by the Mathematics Section of the Educational Research Institute: *School of Independent Thinking, Teaching Mathematics in Lower Secondary School, Professional Development Needs of Early Education and Mathematics Teachers*[65] and other available publications on this subject.

## 7.2. How do mathematics teachers work?

### 7.2.1. Planning the teaching process

The first step towards planning a mathematics lesson is to determine its objectives. The most important objectives to be effected during every lesson include complex skills described in the core curriculum. Teachers also formulate detailed objectives strictly bound to the subject of a particular lesson. Achieving these objectives requires choice of teaching methods, forms of work and teaching aids appropriate for a particular group of students. Therefore some mathematics teachers constantly look for teaching methods enabling students to acquire certain skills and encouraging them to plumb the mysteries of this subject, which at the same time reveal the beauty of mathematics.

Educational publications enjoy high credibility among teachers. Teachers are convinced that discussing content of textbooks with students and solving the following sets of exercises included in the activity books allow them to implement the full provisions of the core curriculum. The vast majority of teachers participating in the *Professional Development Needs of Early Education and Mathematics Teachers* study declared that while planning lessons they used textbooks (over 97%), methodology guides for teachers (90%) and publishers' websites. Therefore, it seems that the direction which teachers follow largely depends on educational publishers in the way they implement the core curriculum, whether they focus only on detailed objectives or observe the general objectives. The content selected for teaching mathematics by publishers often becomes the basis

[65] Detailed information on these studies can be found in he Annex: Information on the studies.

for mathematical tasks set for students, content they will be expected to know and skills they will develop. As a result, the quality of teaching largely depends on the quality of textbooks teachers use.

Mathematics teachers also readily use the website resources of educational institutions. These include: Ministry of National Education, Central Examination Board and Regional Examination Board, Educational Research Institute, Centre for Education Development, Education Offices or professional development centres. Interest in these websites may indicate the high position of confidence in which these institutions are held. Teachers are far less interested in materials posted on private websites and discussion forums for mathematics teachers.

While preparing lessons, mathematics teachers often make use of knowledge and skills offered by other teachers of this subject with whom they have a direct contact. Through this exchange of experiences, they try to apply the same methods and teaching aids which contribute to other teachers' success and lead to the desired changes in student thinking and behaviour. They discuss the difficulties associated with certain materials and ways to overcome them. This type of collaboration was reported by 69% of teachers.

Teacher's ideas about a lesson concept, objectives, selection of methods and teaching aids culminates as lesson script which serves as a signpost and help during class. There is no single standard for such scripts, and there cannot be, even though the subject literature recommends that a lesson script should include an introduction (lesson subject, methods, objectives and teaching aids, bibliography) and a main part describing the lesson, including tasks set and their solutions (Siwek, 2005). Some scenarios also contain possible student reactions relating to their activity while acquiring this knowledge. The scenario detail largely depends on a teacher's personality, experience and ability to react to various classroom situations. In practice, some teachers prefer scenarios briefly describing lessons in several sentences, others prefer a detailed minute-by-minute description. Many sample scripts may be found in teacher's methodical companions to textbooks, journals and on the internet. However, they were prepared with particular students, class and school in mind. Mathematics teachers often treat them as ideas for their own lessons and modify them according to their students' capabilities and school equipment available.

### 7.2.2. Teaching aids

The most common teaching aids used by mathematics teachers regardless of education level at which they teach are chalk, blackboard, textbook, photocopies of exercises and work-sheets. This is as reported by teachers or students and confirmed by lesson observations. For example, in interviews conducted as part of the *Professional Development Needs*... study in response to the question: *Which didactic aids and ICT tools do you use during mathematics lessons in lower secondary school?* teachers often replied, "During mathematics lessons, chalk and blackboards work best. Well, now, whiteboard and marker pen", "First of all, chalk and blackboard. And the textbook, because each student has a textbook".

The vast majority of mathematics teachers (over 82%) had different textbooks and exercises (including some specifically aimed at gifted students) and used these materials in their work. Teachers were convinced that books were one of the best didactic aids, because they included exercises to develop different skills, ranging from minor, detailed skills (such as computational competence) to the more complex.

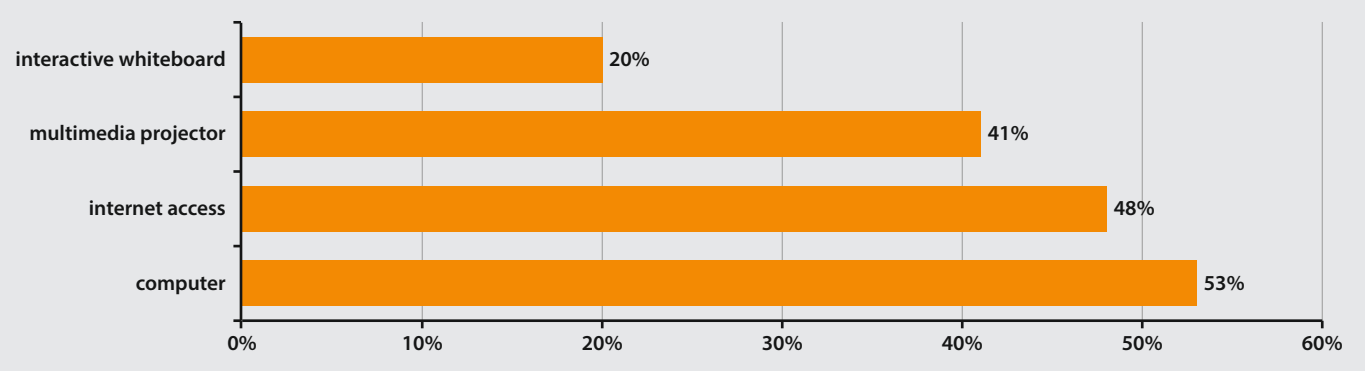
Apart from textbooks and exercise books, mathematics teachers readily used other teaching aids appropriate for particular subjects, for example solid models - over 94% of primary and lower secondary school teachers participating in the *School of Independent Thinking* study reported that their classroom was equipped with such models and they readily used them while discussing solid geometry. Some models were bought, but most of them were made by students.

Primary and lower secondary school mathematics teachers also used practical texts (leaflets, advertisements or instructions), for example while discussing matters relating to percentages or descriptive statistics. Upper secondary school teachers used them less frequently.

### 7.2.3. New technologies

In recent years, rapid information technology development has resulted in the conviction that teachers should apply new technologies in their classroom. However, research shows that despite this pressure, mathematics teachers rarely employ multimedia aids (computers, the internet, overhead projectors or interactive whiteboards). There are at least three reasons to explain this.
Firstly, insufficient school equipment with multimedia aids was provided. Graph 7.1 shows how teachers participating in the *Professional Development Needs...* study described their classroom equipment with respect to multimedia.

**Graph 7.1. Multimedia in primary and lower secondary school classrooms (according to teachers).**




*Source: IBE calculations from the Professional Development Needs of Early Education and Mathematics Teachers pilot study.*

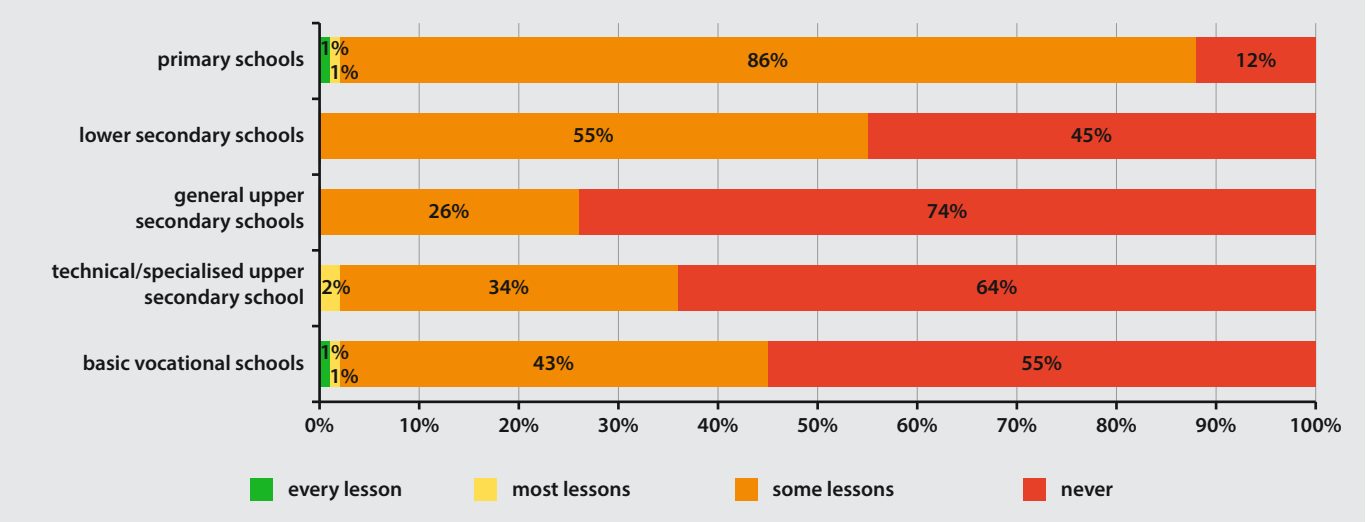
It is not surprising that computer software for solving mathematical problems was used by one in three primary, one in four lower secondary and only one in five upper secondary school mathematics teachers. The most commonly used software was Excel. Software to draw graphs of functions (such as graph, graph online, WinPlot) were also used relatively often. Software such as GeoGebra and Cabri were used much less frequently and only a small percentage of teachers used C.a.R.
Mathematics teachers sometimes used the internet during classes. The internet resources were used by one in three teachers, most frequently by primary school teachers (40%) and least frequently in general upper secondary schools (30%). Teachers rarely used the CDs accompanying textbooks (22%). These were used most frequently by lower secondary (29%) and primary (28%) and least frequently by basic vocational school teachers (11%).
Another reason to explain why mathematics teachers rarely use multimedia technology during lessons was their lack of ICT skills in applying new technologies to support their teaching process. As many as 77% of primary and 73% of lower secondary school mathematics teachers indicated the need for professional development relating to this issue.
The last reason identified to explain why mathematics teachers rarely used ICT during their lessons was their lack of belief in its efficiency. In interviews conducted as part of the *Professional Development Needs...* study to the question: *Do you use ICT during your lessons?* teachers often replied: "I try not to do that. Chalk and blackboard are enough. I know that there are many possibilities, software. Some are interesting, for example GeoGebra. But I am against using ICT during mathematics lessons. I believe it distracts students". Presumably, it distracts them from what is most important in learning mathematics, i.e., from reasoning. Teachers are afraid that the work load and time invested

in implementing these tools both on the part of teachers and students is disproportionate to the potential benefit or, in their opinion, unlikely effects.
Despite these obstacles, difficulties and fears, some primary and lower secondary school teachers used multimedia teaching aids systematically - especially multimedia projectors, laptops, e-books or internet materials accompanying textbooks. They organised mathematics lessons for their students in computer labs and used the CDs accompanying the textbooks. They used websites, especially when they contained interactive texts (publishers' websites and publicly available websites such as www.edukacja.gazeta.pl) or education portals (for example www.math.edu.pl).

### 7.2.4. Methods and forms of teaching

Mathematics teachers reported using various methods and forms of work. These included direct instruction (such as talk, discussion, working with textbook), student activation methods (such as brainstorming, snow-ball, six thinking hats, metaplan technique and decision tree) and practical exercises (problem solving). They used three forms of work: frontal (collective), group or individual. Sometimes they organised mathematics competitions rewarded with good marks. Selection of methods and forms largely depended on school type, education level, environment, student group, teacher seniority, their approach to teaching mathematics and changes in education system. Teachers declared that their teaching style depended on two main factors: lesson theme and the character of their students' intellectual potential, their interpersonal relationships, level of activity, willingness to cooperate with the teacher and co-operation between them.
Teachers believed that direct instruction (talk, lecture) was the best choice for introducing new material. However, during lessons designed to systematise and consolidate student knowledge, practise a skill or apply techniques learned, problem solving or practical methods are also applicable.
Most mathematics teachers declare that the most effective methods which encouraged student engagement were obtained from student activation techniques. Some, however, noticed that this only was possible with classes in which students were willing to cooperate and enjoyed good relations with each other. They emphasised that in classes in which the majority of students had poor mathematics skills and low engagement with learning, in which students did not like each other or were in conflict, it was necessary to employ direct instruction.
Student activation methods include learning games. Teachers suggested that they were the most popular in primary school and less popular in secondary schools. General upper secondary school teachers believed that this was a less appropriate method for older students. It is notable that at this level of education the learning games method was much more frequently used in technical upper secondary and basic vocational school. Teacher statements about frequency of using learning games are presented on graph 7.2.

**Graph 7.2. Teacher responses to the question: "In the last two months, how often did mathematics students play mathematics learning games?" - by type of school.**




*Source: IBE calculations from the School of Independent Thinking study.*

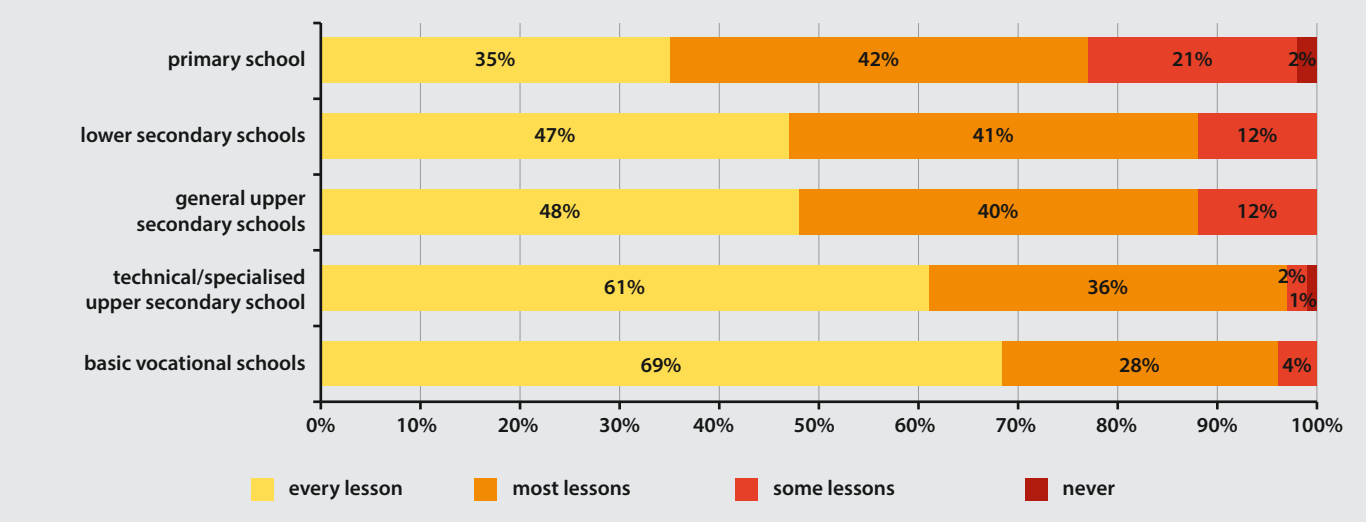
These quantitative results were confirmed by teachers in interviews. Some teachers believed that learning game methods had limited application and were appropriate only for discussing particular issues or developing particular skills. For example, they can be useful for introducing probability or practising calculation skills.

Students also stated that during mathematics lessons, learning games were not often played, confirming teacher declarations. Their statements suggested that the frequency of use of learning games decreased with increasing level of education. It was lowest reported by students in the final years of general and technical upper secondary schools, whereas 59% of lower secondary school students declared they had participated in mathematical learning games.

Teachers' declarations about the variety of teaching methods and forms they used or their broad theoretical knowledge in their field were not always reflected by their actual teaching. Lesson observation and in-depth interviews with teachers and students clearly indicated that mathematics teachers usually applied direct instruction (talk or elements of lecture) working "frontally", addressing the whole class. *The Teaching Mathematics in Lower Secondary School* study revealed that almost all the 80 observed lessons were conducted by teachers in a similar fashion. The majority had the same structure: checking homework, teacher introduction to a new topic or the teacher demonstrating solutions to typical problems on the blackboard, independent solutions provided by students. In the main part of the lesson, teachers presented the knowledge necessary to explain the planned topic. Presentations were usually supplemented by teacher demonstration of typical examples. This was followed by student practice. Often one student presented their solution on the blackboard and the rest copied it into their notebooks. Sometimes students individually solved problems at their desks and then one student presented their solution on the blackboard.

Students' attempts to reach a solution were usually guided by the teacher's "step by step" support. The teacher asked detailed questions which eventually led the student to the correct solution, but this deprived students of the possibility to reach a solution by themselves. The majority of teachers participating in the *School of Independent Thinking* study reported using this approach. In total, over half declared doing this during every lesson. It was least frequently adopted by primary school teachers and used most frequently at basic vocational schools. Detailed information is presented on the graph 7.3.

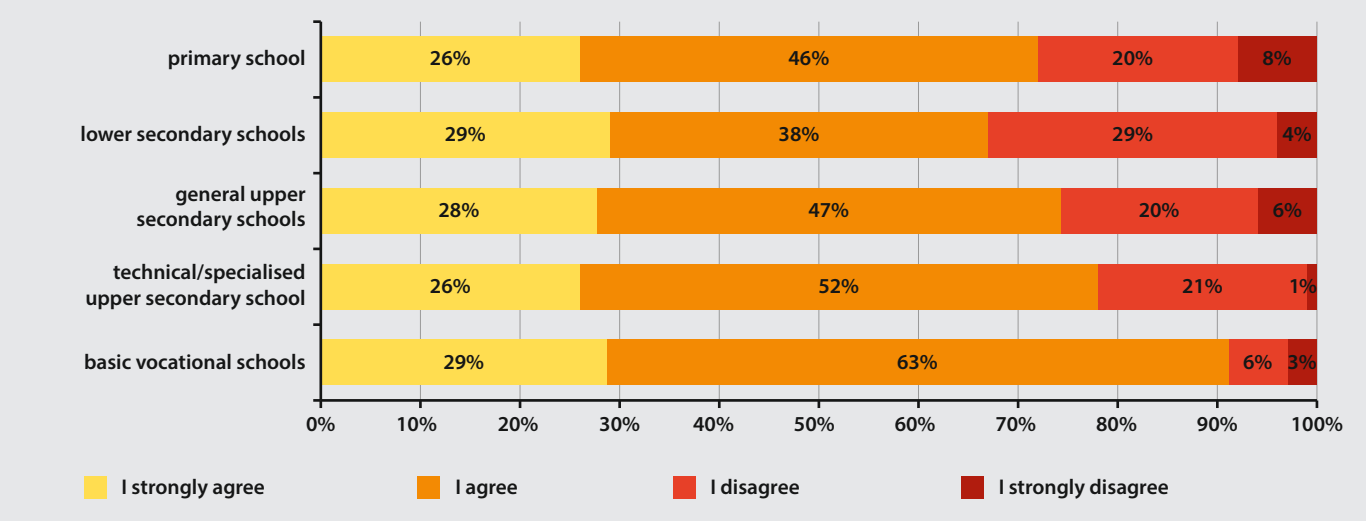
**Graph 7.3. Teacher responses to the question: "In the last two months, how often did you provide your students with a step by step explanation of how to solve mathematical problems during mathematics lessons?" - by type of school.**




*Source: IBE calculations from the School of Independent Thinking study.*

This was confirmed by students who stated that their teacher devoted most of the lesson time to explanation of some content or showing them how to solve problems.
It is relevant to compare teacher responses from the previous graph with their responses to the next question.

**Graph 7.4. Teacher responses to the question: "To what extent do you agree with the statement: In order to teach mathematics students effectively, a teacher should thoroughly demonstrate ways to solve different mathematical problems, step by step" - by type of school.**




*Source: IBE calculations from the School of Independent Thinking study.*

Graph 7.4 illustrates some teachers' belief that there was no need to demonstrate how to solve mathematical problems step by step to students to teach mathematics effectively. For example, in lower secondary schools 33% of teachers disagreed or strongly disagree with the efficiency of this method. However, the earlier data (graph 7.3) suggested that this was what they did most frequently. As many as 88% used this method during every or most lessons. This may lead to the conclusion that about 20% of lower secondary school teachers applied this method to almost every lesson

even though they do not believe in its efficiency. This probably indicates that one in five mathematicians would like to teach differently, but they do not know how.
Another practice applied by teachers while solving problems with students was asking all students detailed guiding questions. Teachers picked up expected student responses and then mechanically "glued together" the correct answer. This procedure may create the appearance that students and the teacher solved the problem together. However, in reality, students only followed simple instructions, led step by step to the solution in the way chosen by their teacher. There inertia in searching for alternative solutions to the same problem or discussion about the sense of students proposed answers and results. This approach may reflect teachers' lack of belief in their students' intellectual potential. Interviews conducted as part of the *Teaching Mathematics in Lower Secondary School* study suggest, however, that there are students who prefer this method. They stated that this was a comfortable way to learn, because they could obtain good marks in mathematics with relatively little intellectual effort or work load, using the algorithms and solution patterns demonstrated by the teacher.
It is worth noting that in the same study, students asked about interesting mathematics lessons primarily reported those lessons which deviated from the typical pattern and, for example, used puzzle solving, sudoku, individual or group work, interesting problems (e.g., creating figures from sticks), teaching aids other than chalk and blackboard (e.g., multimedia projector, interactive whiteboard, multimedia presentation).

### 7.2.5. Developing mathematical skills

Mathematical skills that students should possess at the end of each level of education are described in the core curriculum in general and detailed requirements. Detailed requirements include the list of basic instrumental skills. They are associated with the particular mathematical content students have to master but they are not sufficient to acquire and develop the complex skills described in the general requirements. Complex skills supply the real meaning and purpose to teaching mathematics. They are not related to specific content but should be perfected during implementation of all issues and on various material.
The mathematics core curriculum for education level 2 includes the following general requirements: I. Computational competence, II. Use and creation of information, III. Mathematical modelling, IV. Reasoning and strategy making. The mathematics core curriculum for the education level 3 and 4 include: I. Use and creation of information, II. Use and interpretation of representations, III. Mathematical modelling, III. Use and making of strategies, V. Reasoning and argumentation. It should also be noted that the core curriculum was designed to develop and deepen the general requirements at the following education level, so that detailed requirements included general requirements from lower levels.
Almost all teachers declared very good awareness of the core curriculum for the level at which they taught. Schools carried out training in this area and many teachers were obliged to demonstrate their knowledge of core curriculum requirements before their supervisors. At the same time, around 86% of teachers declared good or very good knowledge about the core curriculum for lower levels than the one they taught. A slightly lower percentage of teachers declared knowledge of the core curriculum for higher levels (74% of primary and 77% of lower secondary school teachers).
Over half (54%) of primary and 61% of lower secondary school mathematics teachers participating in the Professional Development Needs... study declared that they agreed with the statement that the 2008 version of the core curriculum put stronger emphasis than the previous versions on development of complex skills (mathematical modelling, creating problem solving strategy, mathematical reasoning and argumentation). However, as many as 41% of primary and lower secondary school teachers believe that the only difference between the current core curriculum and previous versions was that many mathematical issues were removed or moved to a different education level. It may

suggest that teachers perceived the core curriculum primarily in terms of detailed requirements and focused mainly on these.

Lesson observation as part of the *Teaching Mathematics in Lower Secondary School* study in terms of formulation of problems and the kinds of problems solved during lessons or at home led to the conclusion that teachers focused almost exclusively on developing the simple instrumental skills described in the detailed requirements of the curriculum. Most problems solved were simple and required only direct application of mathematical formulae and patterns learned. Very few problems required less typical application of formulae learned or the combination of detailed skills.

What is more, during lessons students rarely had the opportunity to observe various ways to solve the same problem. During the observed 80 lessons, sometimes a teacher simply informed students that a given problem could be solved in another way or if a teacher was dissatisfied with a student's proposed solution, demonstrated a different, better (according to a teacher) solution. Even if a teacher mentioned other possible solutions they were not demonstrated in detail and at best were only briefly described. Only during one observed lesson was an alternative solution proposed by a student analysed. This means that during the remaining 79 lessons teachers had no opportunity to exercise their skill in designing their own approach to solving a problem and this is underlined as one of the most important skills described in the core curriculum requirements.

Another important skill described by the core curriculum requirements is reasoning and argumentation. The *Teaching Mathematics in Lower Secondary School* study indicates that developing this skill is blocked by teachers with their tendency to ask detailed guiding questions and suggestions in such a way that no opportunity is created for students to come up with a solution on their own and they only execute of simple instructions being led, step by step, to the solution chosen by a teacher. However, as mentioned earlier, this situation is a partial response to student expectations.

Therefore, it can be assumed that mathematics teachers extensively develop the skills described in detailed requirements, but do not adequately develop the skills prescribed by the general requirements of the core curriculum. Perhaps they underestimate the significance of the general requirements for the learning process or they do not believe in their students' capabilities.

### 7.2.6. Communication during mathematics lessons

One of the most important elements of mathematical education is good communication between teachers and students or between students themselves. Good communication occurs when the meaning of a message is understood by the source and the receiver in the same way (Czajkowska, 2003; Slezakova-Kratochvilova and Swoboda, 2006; Slezakova and Swoboda, 2008). This is especially difficult in teaching mathematics. The specificity of mathematical language creates objective difficulties in teacher-student communication. Mathematical language of a teacher and a student are only seemingly similar. Underneath this surface vocabulary similarity there is a significant discrepancy between notions and their meanings. The meanings applied to certain terms are not always equivalent to their meanings in mathematics. Sometimes understanding the meaning of a teacher's statements requires students to know the mental short-cuts or mathematical jargon. Often teachers use different expressions to describe the same activity. Sometimes mathematics teachers and teachers of other subjects use the same expressions to describe different activities or reactions expected of students (Bugajska-Jaszczołt and Czajkowska, 2013).

As a result, the teacher-student communication during mathematics lessons is disturbed. Misunderstanding occurs as a result of different student and teacher experiences, discordant understanding of the situation or context of a task, different interpretation of certain expressions or focus on different pieces of information (Slezakova-Kratochvilova and Swoboda, 2006; Slezakova and Swoboda, 2008; Bugajska-Jaszczołt and Czajkowska, 2013). If, however, teaching takes place in an appropriate emotional context and both parties want to achieve agreement, all these cognitive barriers are quite quickly removed and the temporary lack of communication resulting from these kinds of obstacles

has educational value for both students and teachers. A teacher's well thought out interventions and suggestions (Pardała, 1984) may lead to students' better understanding of mathematical language and their ability to use it, gathering heuristic experiences and, in consequence, developing skills such as mathematical reasoning or designing problem solving strategy. For a teacher, this temporary lack of communication can provide valuable information concerning students' way of thinking and reasons explaining their mistakes.

The situation becomes problematic when a teacher does not make an effort to understand the meaning of students' statements or listen closely to what they are trying to say or just when the teaching process does not progress as hoped or students are afraid to speak or ask questions. The lack of understanding between a teacher and a student who thinks differently from a teacher may result in reluctance to learn and an emotional block. It may also be a cause for low teaching and learning effectiveness and increased difficulty in learning mathematics despite teacher and student effort.

Lesson observation during the *Teaching Mathematics in Lower Secondary School...* study indicated that lesson atmosphere usually created favourable conditions for student activity, teacher-student communication and between students themselves. Despite this, during most lessons communication did not progress well. Perhaps this was caused by excessively frequent direct instruction and lessons organised in a way in which the teacher played the dominant role, only as the source of messages and not the recipient.

Lack of appropriate social and communication competence among teachers and students may be another factor hindering communication. Some teachers did not seem able to communicate positive or negative feedback to students, for example, on their behaviour. They used general or evaluative statements using the "you" formula, such as: "You are impolite. Your behaviour is reprehensible", without indicating what exactly was reprehensible about the student's behaviour.

Communication skills understood as following established rules and using communication tools are, sadly, not very often taught or developed in either teachers or students.

### 7.2.7. Student assessment

It is not surprising that mathematics teachers use a Subject assessment standard, compatible with the School assessment standard. Teachers reported that they presented it to students each year during the first lesson, so that students knew and understood it.

As studies and practical observations indicated, mathematics teachers assessed current student work using marks. Students obtained marks for tests, written assignments, oral presentations, homework, classroom activity and additional work. Teachers regarded marks given for written tests and assignments as their principal source for feedback on their own work and student progress. Most teachers claimed that they made their assessment during lessons not only using marks but also in descriptive form. Usually, they interpreted praising a student or noticing his or her shortcomings as a descriptive evaluation. Often, however, it was limited to an imprecise comment about a student's work or attitude, for example "Great. You are doing well. Good thinking, but I encourage you to make more effort, work systematically and independently in your notebook". Sometimes in cases when the effort of underachieving students is clearly visible, they use incentives such as stickers or overstating marks.

Feedback on student's written assignments given by mathematics teachers was also often imprecise. Students were informed by a lower mark or score that something was wrong, but they did not receive feedback on the type of mistake. A lower mark or score could result from a serious factual mistake; calculation error; simple inattention or written error; misunderstanding of a situation or solving a completely different problem; applying a correct method but not the one preferred by a teacher; or too brief an explanation of the reasoning or solution to the problem. Usually teachers underlined the mistaken part but were not precise about it. Much less frequently they noted a suggestion by the mistake so that a student could figure out the mistake on their own. Sometimes

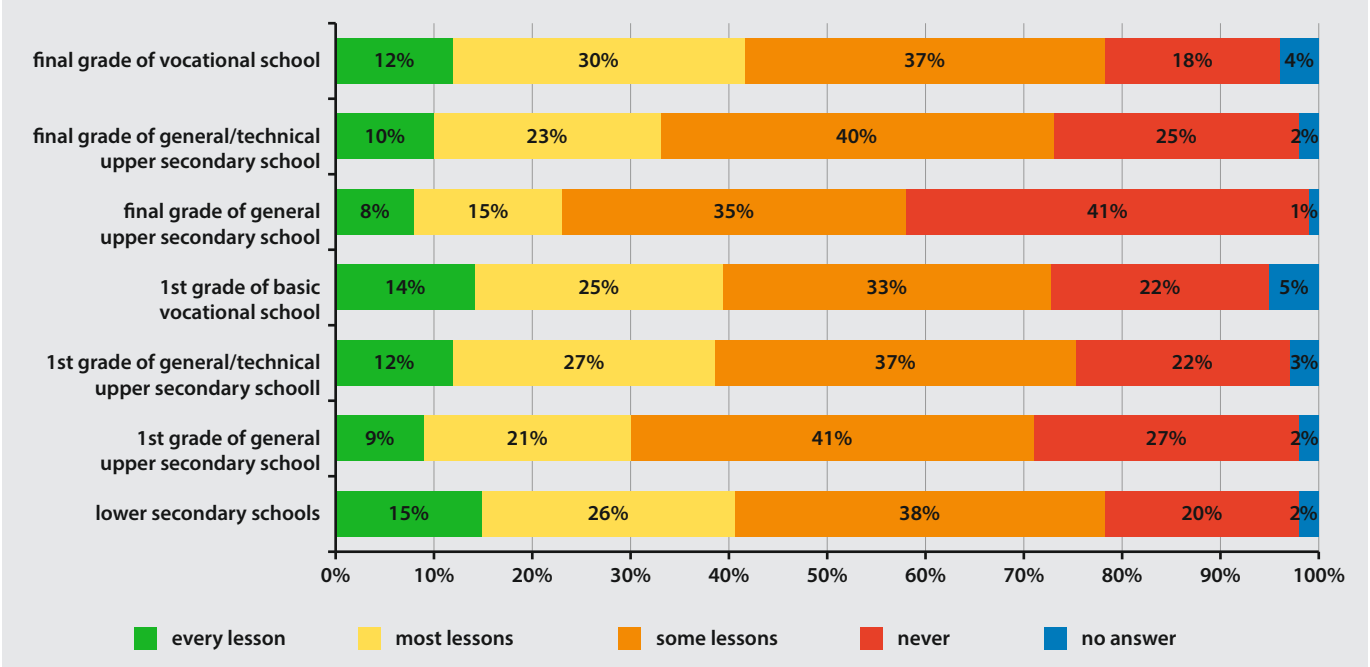
they demonstrated the whole correct solution or filled in the parts of the solution a student had left out, which in their opinion were necessary. It also happened that teachers supplemented a formal mark with a written commentary expressing their attitude to the student and their work, for example: "Mark: 4. I am proud of you", "I was disappointed today. I did not expect that many mistakes from you". Teachers are convinced that spoken praise encourages underachieving students to work harder and negative comments motivate good students to make more effort. It should be noted that mathematics teachers praise students much more frequently than they criticise them.

Discussion of test results is common practice for mathematics teachers. Sometimes they only indicate which items were marked. At other times they demonstrate the correct answers or ask the best scoring students to show the others, so that students can compare their own with model answer. In such cases alternative solutions to a problem often arise, which is a positive phenomenon.

Most mathematics teachers claimed that they did not reduce a mark if a student solved the problem in a different way to the example demonstrated during the lesson. In the *School of Independent Thinking* study as many as 94% of teachers disagreed with the statement that "In homework or test, students should not solve mathematical problems using different methods to those learnt in the classroom". What is more, some teachers claimed that they rewarded students who solve problems using their own methods with better marks, as long as they were correct. However, teachers' declarations were not confirmed by students. To the question: *How many times did your teacher expect you to solve problems only the way he or she recommended?* - as many as 41% of lower secondary school students responded: during every or most lessons. As the studies indicate, upper secondary school students felt less restricted in this respect (graph 7.5).

According to mathematics teachers, a good school mark is the best incentive. Therefore, they are equally willing to reward all desired student activities (such as volunteering to answer questions, solving additional problems) with the best marks and pluses and to punish using minuses or worst marks for unacceptable student behaviour, neglecting or breaking agreed rules (such as lack of homework, lesson disruption) and gaps in knowledge. Teachers believed that negative marks motivated students and influenced their teaching efficiency.

**Graph 7.5. Student responses to the question: "How many times did your teacher expect you to solve problems only the way he or she recommended?"**




*Source: IBE calculations from the School of Independent Thinking study.*

The *School of Independent Thinking* study enlightened us about teachers' perception of their students' abilities. Over half of the respondents (53%) assessed the level of their students' mathematical knowledge and skills as average and almost one-third evaluated them as low. An almost equal proportion of teachers assessed their students' skills as very high (7%) or very low (8%). However, if we take into account assessments of teachers from different types of schools, there are significant discrepancies in their perception of student skills. Three quarters of primary school teachers evaluated their students' skills as average, but teachers in this group most frequently also tended to evaluate their students' skills as high and least frequently as low or very low. Lower and upper secondary school teachers work with more diverse groups of students. Half of the technical and specialised upper secondary school teachers assessed their students' skills as low and 41% as average. Vocational school mathematics teachers held the lowest opinion about their students' skills: almost one-third assessed that they were at the lowest level, half regarded them as low and only one in five assessed them as average.

How do the teachers from different types of schools assess performance of complex skills by their students? Skills connected with mastering computational competence, generating and producing information, mathematical modelling, reasoning and strategy making were assessed the highest by primary school teachers. They were assessed the lowest by teachers from vocational schools. Skills connected with the use and interpretation of representations were assessed highest by general upper secondary school teachers - only 3% of respondents described their students' skills as very low. The worst assessment was from basic vocational school teachers - almost every fifth declared that their students' mastery of these skills was at the lowest level and almost half described their level as low. In terms of skills related to reasoning and argumentation, teacher responses were not as varied as in others. General upper secondary school students were assessed the highest. In comparison to assessment by lower secondary school teachers, the proportion of lowest assessments decreased in favour of higher ones, which may be interpreted as improvement in this area - only 3% of lowers secondary school teachers assessed their students' skills as very high, whereas in general upper secondary schools, the proportion was 9%. Teachers from technical and specialised upper secondary schools assessed their students' skills as worse - in comparison to lower and general upper secondary schools where there were more students whose skills were assessed as low. More than one-third of respondents assessed basic vocational school students' skills as very low and every fifth described them as average.

## 7.3. Everyday difficulties faced by mathematics teachers

The biggest challenges encountered by mathematics teachers are related to implementation of the core curriculum. This results from students' diverse individual abilities and their attitude to mathematics and learning the subject. Teachers believe that not all acquire knowledge at the same pace or are able to acquire and develop complex skills. They also notice that students often learn by rote and are unable to apply their knowledge, for example, they do not know how to apply mathematical formula in practice. According to teachers, the most difficult general requirements of the core curriculum to implement are: III. Mathematical modelling, IV. Use and making of strategies, V. Reasoning and argumentation. Lack of belief in students' abilities results in a low frequency of problems set relating to complex skills. These problems, however, are often offered to a group of so called willing students or assigned for additional homework. Teachers declared that they did not face many challenges related to implementing the detailed requirements of the core curriculum, even though the limited number of mathematics lessons made it difficult. As a result of this limitation, they implemented all detailed objectives of the core curriculum, but took a more cursor approach than they would prefer. Other factors indicated by teachers as hindering implementation of the core curriculum included: insufficient access to teaching aids, especially multimedia related; too many students

in one class (especially those perceived as "underachievers"); presence of dysfunctional students; lack of student cooperation (lack of discipline, neglecting homework, laziness); lack of parental co-operation and their mistakes in bringing up their children.

**Table 7.1. Areas most often indicated by mathematics teachers as needing support.**

| Issue | primary school mathematics | lower secondary school mathematics |
|---|---|---|
| examples of good practice | 82% | 82% |
| lessons developing students' mathematical interests | 82% | 79% |
| preparing students for competitions in mathematics | 74% | 80% |
| working with mathematically gifted students | 76% | 78% |
| working with low achievers | 78% | 74% |
| computer-assisted mathematics teaching | 77% | 73% |
| counselling, psychological counselling for students | 69% | 62% |
| assessment methods for evaluating student achievement in mathematics | 61% | 60% |

*Source: IBE calculations from the Professional Development Needs of Early Education and Mathematics Teachers study.*

Another challenge reported by teachers is related to developing skills to solve mathematical problems. According to teachers, this was a result of students' poor reading comprehension skills. The main difficulty indicated by teachers was that students only understood the simplest tasks: write down, calculate, draw. Teachers' observations were confirmed in student statements. Only problems including these kinds of tasks and those which require first of all the mechanical application of acquired knowledge were understood by the majority.

Mathematics teachers declared a need for support and training in many areas (for details, see table 7.1).

We can, therefore, state that Polish mathematics teachers have registered challenges related to their teaching of the subject and express the need for training to enhance their professional competencies. It is worth noting that the largest proportion of teachers declare a need to learn more about good practice, which suggests that they focus on acquiring practical skills necessary for their work.

## 7.4. Success in teaching mathematics

Mathematics teachers define their professional success in many different ways. For some, professional success comes from students' achievements or enjoying good relations with their students and for others - their own achievements.

Some teachers, for example, see themselves as successful when their students win mathematics competitions, perform well in external standardized tests at the end of grade 6 or at the end of the 3rd year of the lower-secondary school ("I am professionally successful if my students performed well during an external examination, if they got into their desired schools and performed well or very well there") or when underachieving students make progress ("Success? When I see student progress. He could not solve the problem and after several attempts I can see that he can manage"). Teachers whose students participate in competitions, especially organised by education

superintendents, are as much affected by success and failure as the students themselves. Often they find it difficult to accept a low score, they feel unsatisfied, especially when they are aware of their student's intellectual potential.

The second group includes teachers who see success in terms of good teacher-student relations. However, they can be divided into two sub-groups. First, those who want to be seen by their students as specialists helping them to acquire mathematical skills effectively, as shown in the following statements from lower secondary school teachers: "I am successful if my students are satisfied with the way I conduct [a lesson], (...) they will not complain but are rather pleased that the teacher explains well"; "I feel successful when years later I meet one of my former mathematics students and he says: you taught me well and I had no problems at secondary school". This sub-group also includes teachers who see their professional success in their ability to interest students in their subject, to make them curious about mathematics, especially the low achievers. One of the lower secondary school teachers participating in the study claimed that one of his most important successes was the participation of "low achieving" students in extracurricular mathematics activities. The second sub-group includes teachers believing that their success is that students are not afraid of mathematics lessons, their ability to ask questions and even seek advice on family or peer group problems.

Another group feel successful when they obtain professional promotion grades ("It is a success to become a chartered teacher, it is a very important thing for a teacher."), complete post-graduate studies or courses ("I am already a chartered teacher, this is my success. I have also successfully completed a special education course"), obtaining a full-time position in a school (which is socially regarded as a "good" job), believe in their own professionalism or job satisfaction ("My success is my job satisfaction and most of all, without occupational burnout. And that I still want to teach children and young people mathematics"; "I feel successful because I have a socially useful job and not every occupation can be described this way. Society definitely benefits from the teacher's work").

## 7.5. Profile of a good mathematics teacher

The quality of mathematics teaching undoubtedly depends on teachers' knowledge, skills and attitude. Creating the ideal portrait of a mathematics teacher seems impossible, however, some framework conditions are recognisable - qualities an ideal teacher should possess (Ball, Thames, Phelps, 2008; Baumert and others, 2010; Czajkowska, 2013; Davis, 2011; Even, 1990, 1993; Hill, Schilling, Ball, 2004; Kersting, 2008; Krauss and others, 2008; Niss, 2004; Polya, 1975; Siwek, 2005; Sajka, 2006; Shulman, 1986). In the words of Helena Siwek, the mathematics teacher "should be very well prepared in terms of: the subject - know the structure and content of teaching; have social and pedagogical competencies - organise the teaching process according to teaching objectives, understand the basic principles of psychology and know their students' abilities; be constructive - planning and applying professionally mature decisions into teaching practice taking integrated mathematical, psychological and pedagogical factors fully into account" (2005, 13).

A good mathematics teacher is **highly competent** in terms of their knowledge and understanding of mathematics, correct use of mathematical concepts and makes no factual mistakes. They are aware of the meaning of given issues in theoretical mathematics and the teaching programme. They can view school mathematics from a higher perspective and see the links between higher and school mathematics.

A good mathematics teacher **has and applies knowledge and skills in teaching mathematics**. Their main objective is to teach students the mathematics skills to be operational in modern world, especially those which are the essence of mathematical education, i.e., reasoning and argumentation. They try to respond fully to students' educational needs. They are students' guide, diagnostician and tutor whom they trust. They do not manage the class but rather motivate students' learning by organising interesting problem scenarios leading to the discovery of new learning content.

They can meet the challenges of contemporary world. They are fascinated by mathematics and can transfer this passion into the students. They also encourage students to engage in mathematical activities and experiments, to formulate hypotheses and verify them (Polya, 1975). They make sure that the learning process takes place in good emotional conditions. They develop student autonomy, allow them to present their own point of view and listen attentively. They analyse mistakes and look for the underlying reasons.

A good mathematics teacher has **rich psychological and pedagogical knowledge and skills**. They have knowledge of developmental and cognitive psychology and are able to apply this to work with students of different age groups.

Another important area for a good mathematics teaching competencies includes **communication and interpretation**. It is especially important for the teaching of this subject because mathematics lessons involve different types of language: a precise, formally correct mathematical language, a mixed language including elements of mathematical and non-formal, intuitive languages and natural language. This gives rise to the emergence of cognitive barriers in teacher-student communication (Slezakova-Kratochvilova, Swoboda, 2006; Slezakova, Swoboda, 2008). A good mathematics teacher is aware of these potential barriers and attempts to clarify all misunderstandings using their knowledge of mathematics teaching process. A good mathematics teacher listens attentively to their students. It is of great importance since students' statements become the basis of their own self-evaluation, professional development and creation of a new quality of teaching. A good mathematics teacher is an innovator, researcher and reflexive practitioner.

Moreover, a good mathematics teacher of the 21st century properly **applies ICT** to support students' mathematical development. They adopt a critical approach towards computer software appearing on the internet and problems offered on the CDs accompanying textbooks. They can critically assess their didactic usefulness from the point of view of teaching objectives. They use software in a deliberate and planned way. They will exploit such an opportunity when the use of traditional means is, for example, impossible or time consuming. They also know how to use ICT to overcome emotional and cognitive barriers in their students.

The ideal mathematics teacher has an **impeccable moral and ethical attitude**. They are socially responsible. They are an educator shaping the rules and norms of behaviour, treating their students as subjects and respecting their rights. Their attitude and behaviour is a role model for students.

The profile described above is an ideal that every mathematics teacher should strive to achieve. Therefore, it is worth a moment of reflection. Realising one's own strengths and weaknesses is the first step to achieve this goal.

# 8. Foreign language teachers

## 8.1. Introduction

Authors:
*Katarzyna Paczuska*
*Magdalena Szpotowicz*

Teaching foreign languages in Poland has a long tradition, but teaching Western modern foreign languages has only been a compulsory feature of the education system for the last 20 years. Until 1989, the only compulsory foreign language taught in Polish schools at all levels of education from fifth grade of primary school was Russian. Only general secondary school students had the privilege and obligation to learn another foreign language, usually either English or German, which means that only 14% of students aged 15-19 learned Western modern foreign languages, since this was the proportion of general secondary school students in this age group. One of the first educational reforms undertaken by the democratic government in 1990 was to abolish compulsory Russian and grant all foreign languages equal status. Learning two foreign languages at primary school was already encouraged, provided resources and qualified teachers were available (Komorowska, 1991, 2012).

Opening to western modern foreign languages created an immediate and huge demand for foreign language teachers, especially for English. In 1990, the number of Russian teachers in schools was 18 thousand whereas the number of English and German teachers was only 2,4 thousand. There was an urgent need to appropriately train around 20 thousand teachers of these languages. It became obvious that this task was beyond the capacity of the philological faculties of universities. Therefore, by 1990 the decision had already been made to create several tens of foreign language teacher training colleges. These colleges introduced a 3-year vocational programme to qualify for work as foreign language teachers, long before Poland implemented the Bologna system (Komorowska, 2007a, 2012). At the time, many Russian teachers also began courses to cross-qualify to English.

Another step directed at dissemination of language instruction at all stages of education was lowering the entry age to learning a foreign language down to 4th grade of primary school, as part of the 1999 education reform. The last serious challenge for teachers and institutions training foreign language teachers was the further lowering of entry age to foreign language learning to 1st grade of primary school in 2008. This change was authorised by the new 2009 core curriculum, which included requirements for a modern language at the first level of school education. In consequence, every teacher qualifying within the framework of a first-cycle philology programme with a teacher specialisation track is prepared to teach a foreign language to children from the age of six onwards. When provisions of the new core curriculum for pre-school education enter into force in 2015, introducing mandatory foreign language lessons to pre-school (MEN, 2014), there will be an increased demand for teachers with competencies for teaching even younger children.

As we can see from this overview of changes in foreign language teaching over the last 20 years, their presence at all education levels and in all school types have been increasing gradually. Currently, schools for children and youth employ over 70 thousand modern language teachers, the majority of whom teach English and German (table 8.1). Over 90% of students at all types of schools for children and youth learn compulsory English, 40% learn German, whereas the proportion of students learning Russian or French does not exceed several percent and has been declining in recent years (GUS, 2013c).

**Table 8.1. Modern foreign language teachers in schools for children and youth in the school year 2012/2013 (n=70622).**

| | |
|---|---|
| English teachers | 64,7% |
| German teachers | 27,2% |
| Russian teachers | 5,2% |
| French teachers | 3,2% |
| Spanish teachers | 1,3% |
| Italian teachers | 0,4% |

*Source: Data from the Educational Information System.*

While discussing the work of foreign language teachers it should be noted that initial training for foreign language teachers is provided in the language they will be teaching. This is intended to provide the future teacher with maximum exposure to the language, assuming that language skill development is one of the most important goals for teachers themselves. Together with typical language-related subjects, such as linguistics, literature and culture of target language countries, the training programme for future teachers also includes practical learning of the foreign language, foreign language teaching methodology: theory and practice, as well as a range of teaching-related and psychology courses (MNiSW, 2012). For years, the training of foreign language teachers has been conducted in the spirit of the communicative approach (Richards and Rodgers, 2001), which provides the theoretical foundation of current methodology for foreign language teaching. This approach relates to several neighbouring approaches and methods characterised by two common objectives: 1) language education is primarily to develop communicative competence, 2) developing techniques for the teaching of the four basic language skills (listening, reading, speaking and writing) — in recognition of the relationship between language and communication (ibid. 2001, p. 155).

## 8.2. How do foreign language teachers work?

The image of foreign language teachers' work and their lessons outlined in this chapter was drawn mainly from the data obtained in three studies: *the European Survey on Language Competences* 2011 (ESLC), the first stage of the *Learning and Teaching Foreign Languages in Lower Secondary Schools Study* (BUNJO) and the *Study of English Teaching Effectiveness in Primary Schools* (BENJA). Each study contributed a unique perspective on the state of research concerning language education and the work of foreign language teachers (more information on the studies in the Appendix: Details of the Studies).
The first two studies were carried out on representative samples of Polish lower secondary schools. The ESLC 2011 study offers not only insight into the context of Polish teaching and learning of English and German, but also allows comparison between 16 European countries and language communities. BUNJO describes the work of English teachers following introduction of the new core curriculum for modern foreign languages in 2009.
The third study - BENJA - focused on early education and included primary school English teachers of grades 1-3. This study was carried out as part of the longitudinal survey *School Determinants of Teaching Effectiveness* (SUEK). A foreign language at the first level of education is usually taught by a teacher who is not an early education specialist. According to the data obtained from monitoring the implementation of the core curriculum, this applied to 78% of classes (MEN, 2010b). The foreign language is usually taught by teacher trained philologists or early education teachers with adequate language and methodology training. This was also confirmed in the BENJA study.

### 8.2.1. Planning the teaching process - teaching objectives and lesson planning

The fundamental step in planning the teaching process is defining teaching objectives. They are, of course, included in the core curriculum and the school learning programme, however, the way teachers express them in their own words seems pertinent. This reveals teacher interpretation of the essence of teaching in the education system, their definition of their role and that of their students in the teaching-learning process.

The objectives defined by lower secondary school English teachers can be summarised in three complementary statements: education for active use of English, attitude shaping and preparation for the lower secondary school exam. Most teachers participating in in-depth interviews for the BUNJO study considered developing their students' communication skills in English a priority. They primarily have oral communication in mind, without emphasis on full linguistic accuracy. Many teachers stressed that knowing a foreign language was a useful tool for students now and would be in the future and therefore, language use for communication was the most important aspect of their work with lower secondary school students. Even though their formulations slightly vary, both objectives in fact respond to the same issue, i.e., communicative language competence – the ability to use the language appropriately to accomplish communication goals (Rada Europy, 2003). This is defined in the core curriculum as the priority for learning a foreign language (MEN, 2008).

Preparing students for the lower secondary school exam is another objective considered by many English teachers as the most important in teaching lower secondary school students. Many lower secondary school teachers are guided by this objective for the entire three years of teaching at this level. It is worth mentioning that the scope and skills tested by the exam are defined in the core curriculum. Treating exam preparation as a separate objective from implementing the core curriculum may lead to a situation where exam preparation rivals work following the core curriculum. Perhaps this strong teacher orientation towards preparing students for the exam stems from student and parent expectations. It seems, however, that the school should work on shaping these expectations and weakening the backwash effect by clarifying the actual role of the examinations. However, the BUNJO study demonstrated that examination results are used as one of the most common measures of school work effectiveness, both by principals and subject teams (Paczuska et al., 2014).

Attitude change is another priority for work in lower secondary schools, as indicated by a large group of teachers. This means arousing students' curiosity and motivation to learn the language, emphasising the usefulness of knowing the foreign language in their present and future life and shaping cultural openness. Students' emotional comfort is also thought to influence a positive attitude towards learning the language during foreign language lessons, by encouraging students' positive self-assessment and self-confidence about use of a foreign language, despite some skill deficits.

**Lesson preparation**

The most important element of lesson planning is its objective – what students will learn, revise, practise and work on. There are several key principles in the foreign language teaching methodology which underlie teaching effectiveness. The lesson plan should include various types of activities, language skills to be practised, teaching materials and suitable sequence for tasks set: more difficult tasks earlier, easier tasks later, calm before activating tasks, clear and logical connections between phases of a lesson, a beginning and final conclusion to the lesson with references to its topic and objectives (Ur, 1996; Komorowska, 2011). This approach to lesson planning allows, among other things, for a dynamic lesson and its course to be not entirely

predictable to students. Lack of predictability is a way of sustaining student's attention and focus. In order to apply these techniques in a lesson, teachers should mindfully follow students textbooks, adapting reference to them according to the individual needs of groups.

However, the studies show that while planning and preparing lessons, teachers mostly relied on the textbook which appeared to play a crucial role. The textbook dictated what the topic would be, lesson content and how the lesson would flow, in short, the lesson plan The BUNJO study revealed this role of the textbook from interviews with English teachers. It was also confirmed by data from survey studies. Every second English and German teacher participating in the ESLC study assessed their lower secondary school textbook as quite useful for lesson planning and 40% of teachers found it very useful. In the BUNJO study, one English teacher in two indicated that the textbook is the most important factor in deciding about lessons. It seems that a textbook performs as a complete lesson plan, whereas it should rather be treated as a teaching aid to facilitate its implementation. This strong attachment to the textbook can lead to the ignoring of needs and pace of work appropriate for teaching particular groups, resulting in focus on conducting a lesson rather than student learning.

Preparation for the lower secondary school exam also played an important role in lesson planning. This is suggested by the fact that one criterion applied by teachers to textbook assessment was its usefulness in exam preparation. This was also supported by the popularity of lower secondary school compendia for exam revision used by every second English teacher interviewed in the BUNJO study. It should be remembered that many teachers in this study reported that they prepared students for this exam over all three years at this education level. This was confirmed by students: 56% of lower secondary school students in first grade reported that during lessons they were set many exercises preparing them for the English language exam. Working to prepare students for the exam should be well thought out and spread over the three years at lower secondary school, so that the whole learning cycle does not become mechanical practise for exercises simulating the exam, while teaching should be spent developing students' language skills to reach the required level of competence, as set out by the core curriculum.

### 8.2.2. Developing subject skills

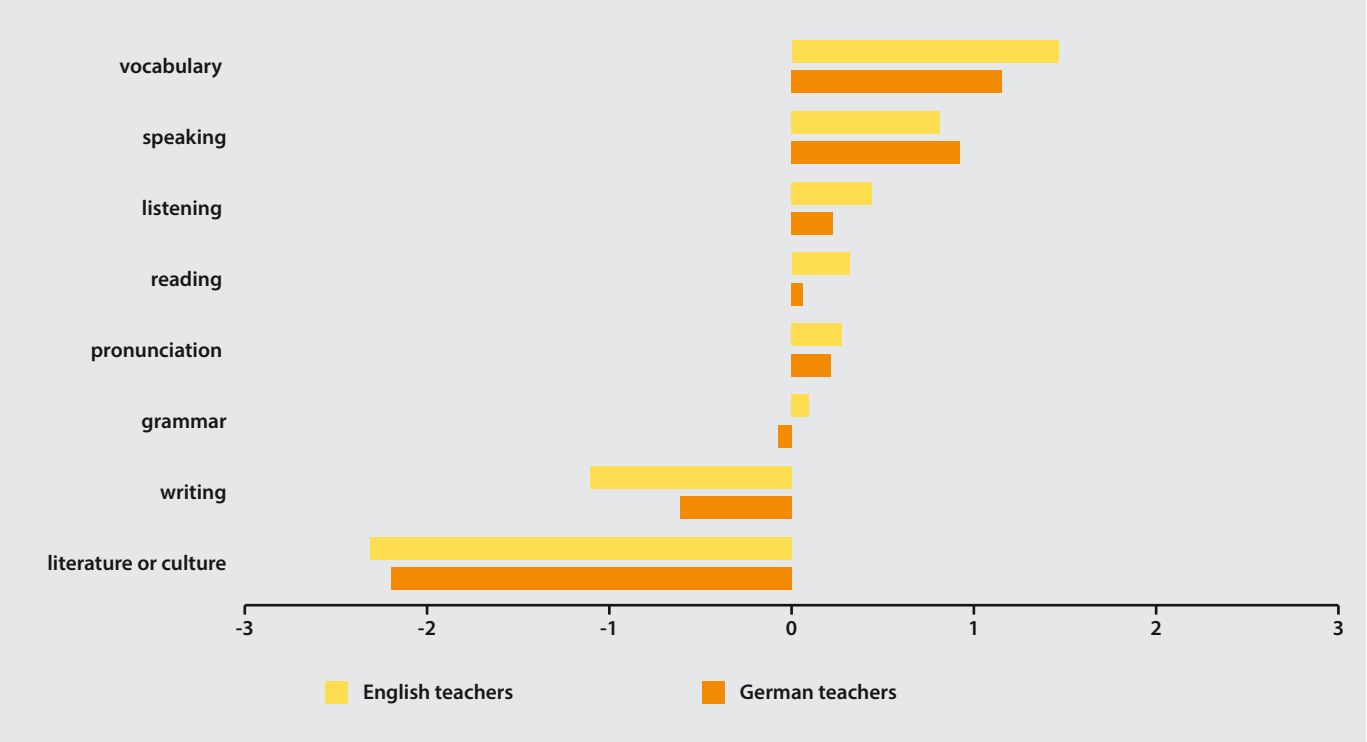
JLinguistic communicative competence, the overriding teaching objective prescribed by the core curriculum, combines the four language skills and knowledge of language subsystems. This means that none of these elements should be omitted in foreign language teaching and the teacher should ensure the harmonious and balanced development of student spoken and written production, reading and listening comprehension, knowledge of vocabulary, grammar and correct pronunciation. All of these language skills should be integrated as required, to achieve the primary language learning objective – effective oral and written communication.

Analysis of 1) the frequency of teaching individual aspects of language during classwork, 2) homework set involving these aspects, 3) their influence on the final grade, 4) the importance teachers attach to developing these in students - as declared by teachers in the ESLC study - allowed creation of an indicator to illustrate emphasis placed by teachers on individual language skills and language subsystems (graph 8.1). It was revealed that they attached the greatest significance to learning vocabulary and speaking. Least attention of all four skills was paid to writing. This suggests that writing is seen as of secondary importance and that teaching vocabulary is insufficiently integrated with the Practising language skills. Such emphasis teachers placed on vocabulary may suggest that it is introduced and practised, in separation from direct use in oral or written communication.

Issues relating to the target language culture(s) strongly connected with sociocultural competence (a component of communicative competence) seemed neglected. Perhaps it is the consequence of weak emphasis in the core curriculum on development in this area. It is also possible that the cultural component in teaching the language is not widely discussed during teachers' training and

therefore their attention is not drawn to the importance of cultural education and they only emphasise it according to their own experience of language education. Weak emphasis on native culture and literature pertaining to a language may explain the low frequency of authentic materials used during language lessons. This matter is significant, since the contact with culture and literature by means of authentic materials offers rich content in a solid context. Such opportunity allows incidental learning and consolidation of vocabulary and language structures.
It should be added that, in practically all 16 countries/language communities participating in the ESLC study, emphasis placed by teachers on teaching cultural aspects of languages was in last place, regardless of target language. This means that development of sociocultural competence is not a feature of the average European language lesson. Polish teachers differed from their colleagues in other countries, placing strong emphasis on teaching vocabulary, with weak emphasis on student writing skills, as already mentioned (Komisja Europejska, 2012, p. 201–204).

**Graph 8.1. Relative emphasis* Polish language teachers put on teaching the four language skills and language subsystems on the basis of teacher responses in the ESLC survey.**




** Equal emphasis on all discussed aspects of foreign language teaching equals zero, greater emphasis on a given language skill or language subsystem with reference to others - greater than zero, and less focus - less than zero.*
*Source: Gajewska-Dyszkiewicz et al., 2013, p. 79.*

### 8.2.3. Communication during lessons

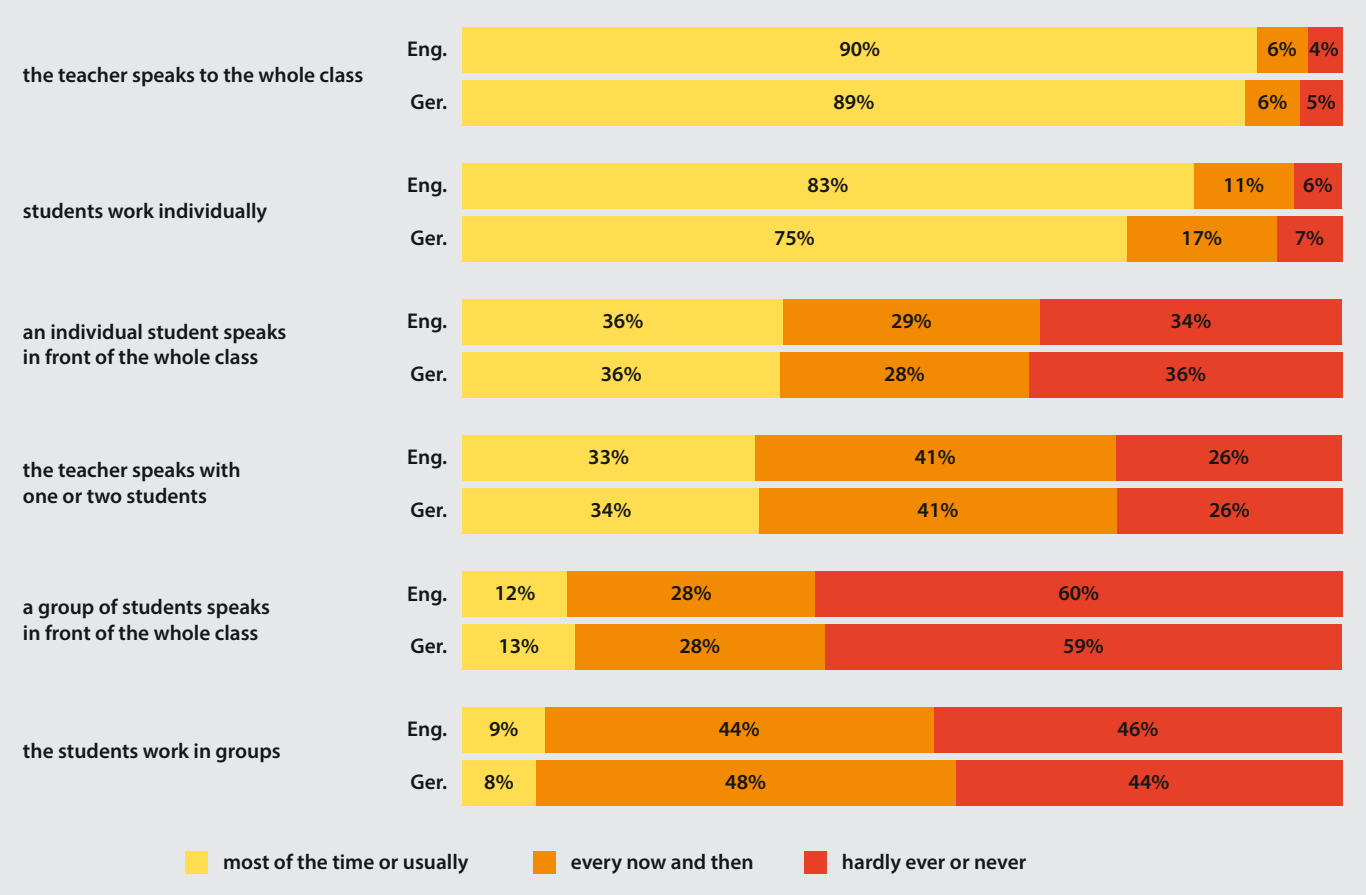
Communication becomes especially important during foreign language lessons, as both the means and an end in itself. Typical characteristics of school discourse, i.e., the inequality of teachers' and students' rights, a teacher's power over communication, proportions of different speakers' time, appointing those who initiate and engage in communication, predictability of classroom discourse and lack of information gaps to open the need for information exchange, all adversely affect foreign language learning (Komorowska, 2011). The foreign language teacher faces a difficult task of changing students' habits and expectations from lessons in other subjects, to overcome the typical

obstacles to classroom communication and creating suitable conditions for student interaction using the target language.

### Types of classroom activities

The general conclusion from data describing interaction in a lower secondary school language classroom is that a lesson is a place for independent, often individual work - it seemed that both students and teachers worked individually. However, students have the best chance to speak during lessons when working in pairs or groups simultaneously while the teacher can listen to their performance of the task and check that communication is actually in the foreign language.

**Graph 8.2. Frequencies of types of classroom activities indicated by Polish students of English (Eng.) and German (Ger.) in the ESLC survey.**




*Source: IBE calculations from the ESLC 2011 survey.*

Almost 90% of lower secondary school students estimated that the teacher spoke to the whole class during lessons most of the time or usually. This means that time that can be potentially used for developing communication skills is monopolised by the teacher. This was also confirmed by a low - about 10% - proportion of answers reporting frequent group work and groups of students speaking in front of the whole class. As many as eight out of ten students held the opinion that they usually worked individually during lessons (graph 8.2). Since teachers, as mentioned earlier, asserted their strong emphasis on development of speaking skills (graph 8.1), this seems contradictory. Perhaps when describing speaking, teachers have language modelling and working on language accuracy in front of the whole class in mind, rather than practice to develop automatic and fluent speech, which is better achieved in pairs or small groups. Teachers may fail to notice that they are the ones who speak most of the time.

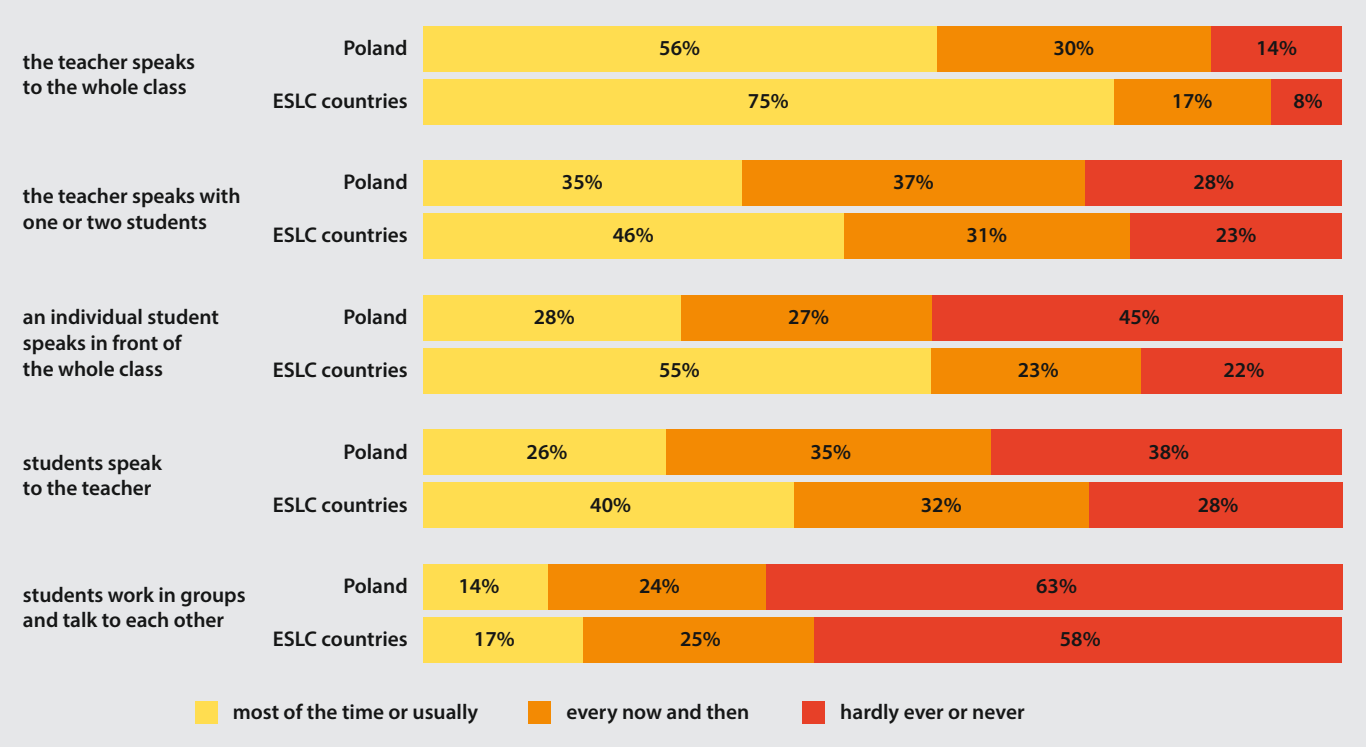
The frequency of using types of classroom activities discussed suggests that communication does not progress in a way which allows for a high intensity of target language use by students and their development of communicative competence. It is worth noting that along with benefits for foreign language learning, group work also develops students' social skills, team work and problem-solving strategies - learning objectives described by the core curriculum. Perhaps it is not part of the language lesson daily routine, because effective group work requires thorough subject matter preparation and organisation or teachers do not believe in its effectiveness. At the same time it appears that the number of students in the classroom does not determine teachers' choice of approach to lessons. The ESLC study did not demonstrate any statistically significant relationship between the number of students and organisation of classroom activities, from which it can be inferred that teachers' choice of lecture-based methods is not explained by difficulty organising pair or group work in large classes.

**Communication in the target language during lessons**

Polish foreign language teachers are the primary and model source of language for their students and the lesson is the main and sometimes exclusive source of contact with the foreign language and opportunity to use it. Students have limited contact with foreign languages in their daily life. Poland is not a tourist destination visited in large numbers by foreign language users, public television does not broadcast foreign programmes in the original language but a voice-over versions. Since learning of Western European languages has only recently been commonly introduced, Poland is still finding its way in this area - parents of today's students generally do not speak Western European languages well or at all, so they cannot set an example for their children. As the ESLC study demonstrated, students have after-school but mainly passive contact with the target language, mostly via new media (the Internet), sometimes during holiday travel abroad, but it is mainly English and only the experience of a small percentage of students (Gajewska-Dyszkiewicz et al., 2013). This means that the teacher has chief responsibility for student exposure to the target language and organisation of lessons in a way suitable to allow students the opportunity to interact using the language.

A teacher's role in shaping student language behaviour and interdependence - the more frequently a teacher uses the target language during lessons, the more frequently their students do the same - was confirmed by the ESLC study (Gajewska-Dyszkiewicz at al., 2013, p. 76). The same study revealed that only half of lower secondary school students reported that English or German teachers usually spoke using the target foreign language to the whole class and according to every seventh student, teachers hardly ever or never attempted to. Therefore student opinions about the frequency of their target language communication are not surprising. Almost half of the lower secondary school students claimed that they hardly ever or never used the target language in front of the whole class. An even higher proportion of lower secondary school students - 63% - claimed that they hardly ever or never used the target language while working in groups or with each other (graph 8.3). It means that during lessons the potential for classroom interaction is not realised, because interaction is in the mother tongue and not the target language. This is considered to be a methodological mistake (Martin, 2009; Pawlak, 2009).

**Graph 8.3. The frequency of target language use in the classroom in specific communication situations on the basis of responses of Polish English language students in the ESLC survey (Poland) and all students of English taught as first foreign language in ESLC participating countries (ESLC countries).**




*Source: IBE calculations from the ESLC 2011 study.*

Communication in the target language during lessons is a challenge both to teachers and students, especially for groups at lower levels of language proficiency. However, it is definitely possible on a greater scale than demonstrated by the ELSC Polish study, as illustrated by the international ESLC results. The average frequency of English use during lessons in Poland is lower than the overall result of the study, both for teachers and for students. The ESLC study also demonstrated the relevance of the call for maximised communication in the target language during lessons, by showing its positive impact during lessons on student achievements (Komisja Europejska, 2012, p. 88).

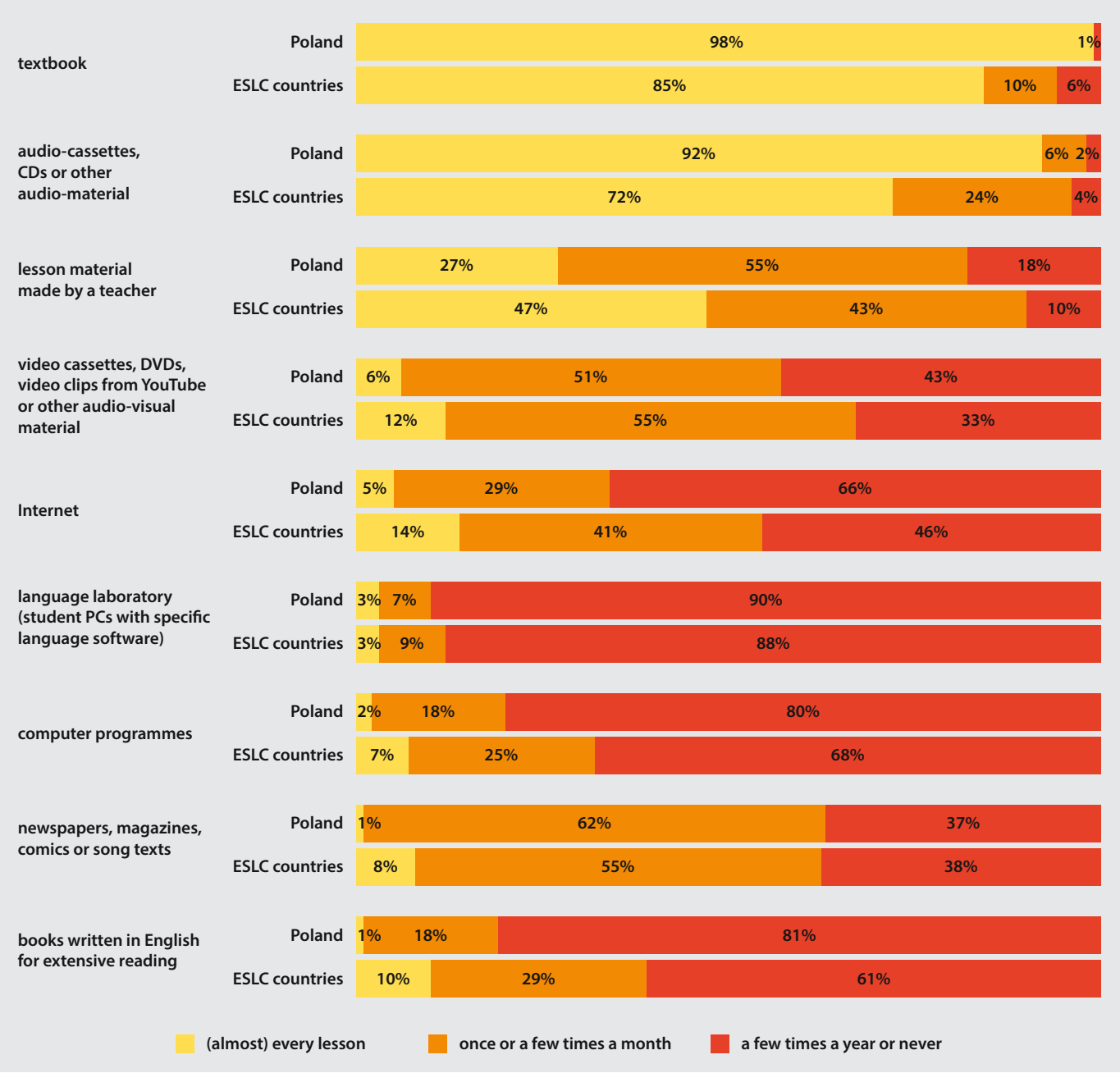
In lower grades of primary school, English is also only moderately used during lessons. Teachers participating in the BENJA study estimated that they spoke the language for about half of the duration of the lesson. As in the case of lower secondary school students' lower language proficiency, age should not provide a reason for limiting use of the target language in favour of the mother tongue. The mother tongue is often helpful or even necessary during foreign language lessons, for example for explanation, disciplining students or confirming understanding, but the guiding principle should be the teacher's conscious choice of strategy to maximise foreign language use (Cameron, 2001, pp. 211–213). The significance of English language quality and quantity relevant to students' age was also revealed by the ELLiE study (Early Language Learning in Europe). Children whose teachers systematically put particular emphasis on addressing their students in English and who often engaged them in short dialogues achieved significantly better results in language tests than students in classes where such activities were not observed (Szpotowicz, 2013).

### 8.2.4. Teaching aids and resources used during foreign language lessons

Typical materials used by foreign language teachers include textbook and audio recordings available as CDs or cassettes (an intergral part of the teacher's set). Over 90% of lower secondary school English and German teachers in the ELSC study declared that their students used

textbooks during every or almost every lesson and audio materials, such as CD or audio-cassettes were used with the same frequency. Analogical results were obtained for English teachers of primary grades 1-3 in the BENJA study. Only 5% of respondents did not use a textbook at all.

**Graph 8.4. Frequency of use of teaching aids and resources according to responses made by Polish teachers of English in the ESLC survey (Poland) and teachers of English taught as first foreign language in ESLC participating countries (ESLC countries).**




*Source: IBE calculations from ESLC 2011 study.*

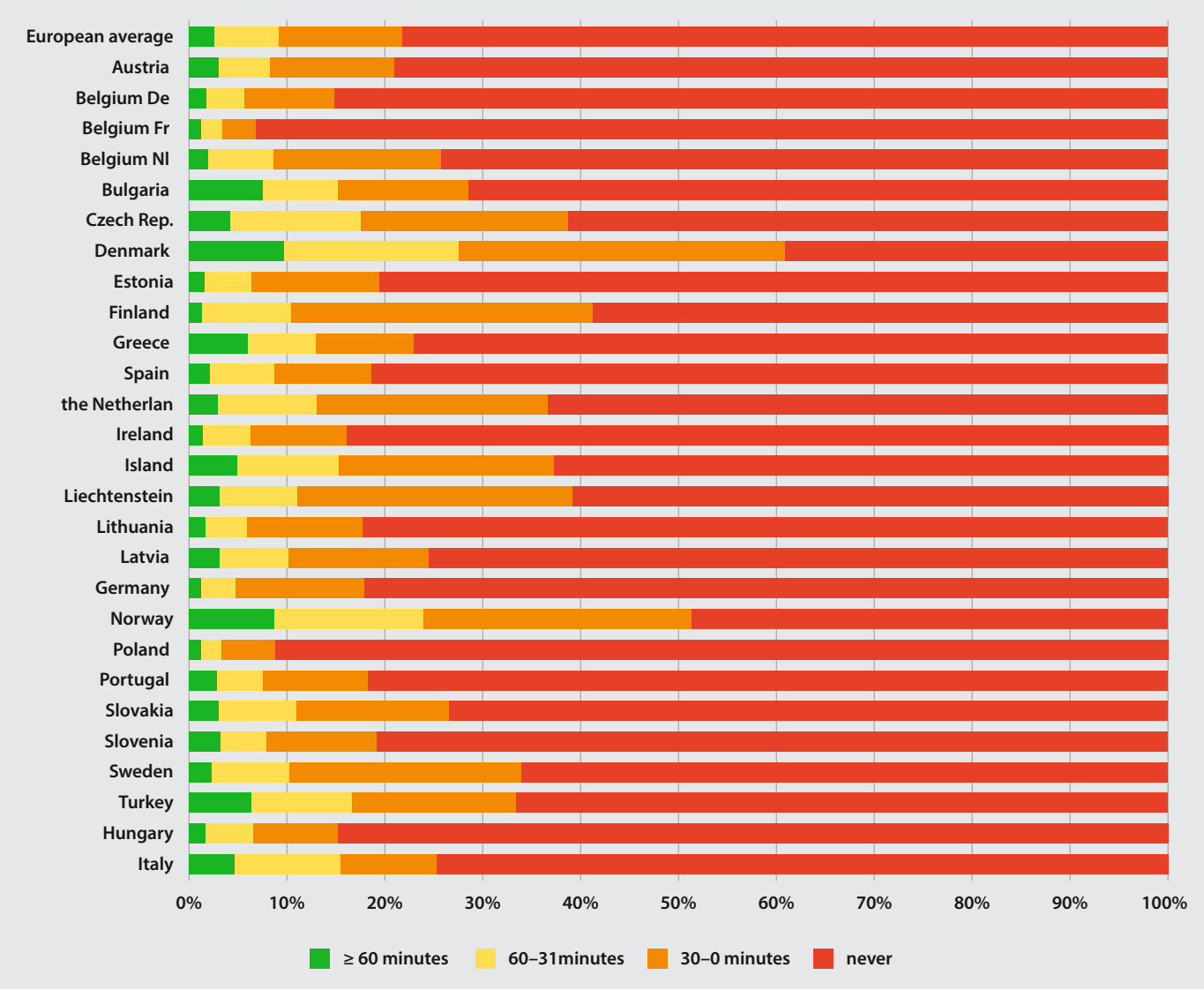
Only a few lower secondary school language teachers regularly supplemented the textbook with original materials or content created by other teachers - every fourth German teacher and every third English teacher used such materials during practically every lesson. Audio-visual materials were used much less frequently. Half of the teachers of both languages only taught using them several times a year or less frequently. These authentic materials included newspapers, magazines,

comics, song texts or series such as Easy Readers (graph 8.4). The least frequently used materials in primary school grades 1-3 were DVDs/video clips - their frequent or very frequent use was declared by 32% of English teachers. 38% of teachers frequently or very frequently used English language children's books for extensive reading.
Foreign language lessons lacked diversity in terms of materials and teaching aids used. Combined with the dominant position of the textbook, this infers that students have limited contact with the living language. The strong attachment to textbooks in foreign language lessons is common in European schools, but teachers in other countries differ from Polish teachers in the intensity of supplementary use of various materials and aids: authentic, audio-visual materials and the Internet (graph 8.4). Lessons in Poland are more monotonous in this respect compared with what is typical in Europe where lessons are more diverse.

**New technologies**

The use of ICT in foreign language education, as in all subject teaching methodologies, is not an aim in itself, but is intended to achieve other goals. Therefore, scope of their application is not in itself a measure of effective teaching and requires analysis in relation to intended objectives. The role of ICT is potentially invaluable in teaching foreign languages. For learners, Internet resources, social media and communicative functionality are an excellent source of language used by native speakers and give them the opportunity to use language to communicate in authentic situations. Information gathered in the PISA 2009 study on 15-year-olds' average weekly computer use during foreign language lessons revealed that this potential was unfortunately not realised - over 90% of Polish lower secondary school students never used computers during foreign language lessons, whereas in most European countries this proportion was lower, at around 60-80%. There are also countries where use was lower than 50% (graph 8.5).
In Polish lower secondary schools this may have been mainly caused by lack of necessary equipment or access in classrooms where foreign language lessons are taught. This is illustrated by the ESLC study results - the vast majority of teachers of both languages reported no access to a multimedia language lab, i.e., to student and teacher computers with or without specific language learning software, or to virtual education platforms supporting foreign language teaching and learning, such as Moodle. Over half of the teachers did not have an interactive whiteboard in the classroom, slightly fewer had no classroom internet connection, around 40% had no projector, teacher's PC or laptop in the classroom (graph 8.6). Access to this equipment was not related to size of the town where schools were located.
However, it should be noted that in the majority of cases where equipment was available, the proportion of teachers regularly taking advantage of it was equal or lower than the proportion of teachers only sometimes using it. This means that access to equipment and software alone is not sufficient to make ICT a regular element of language lessons.

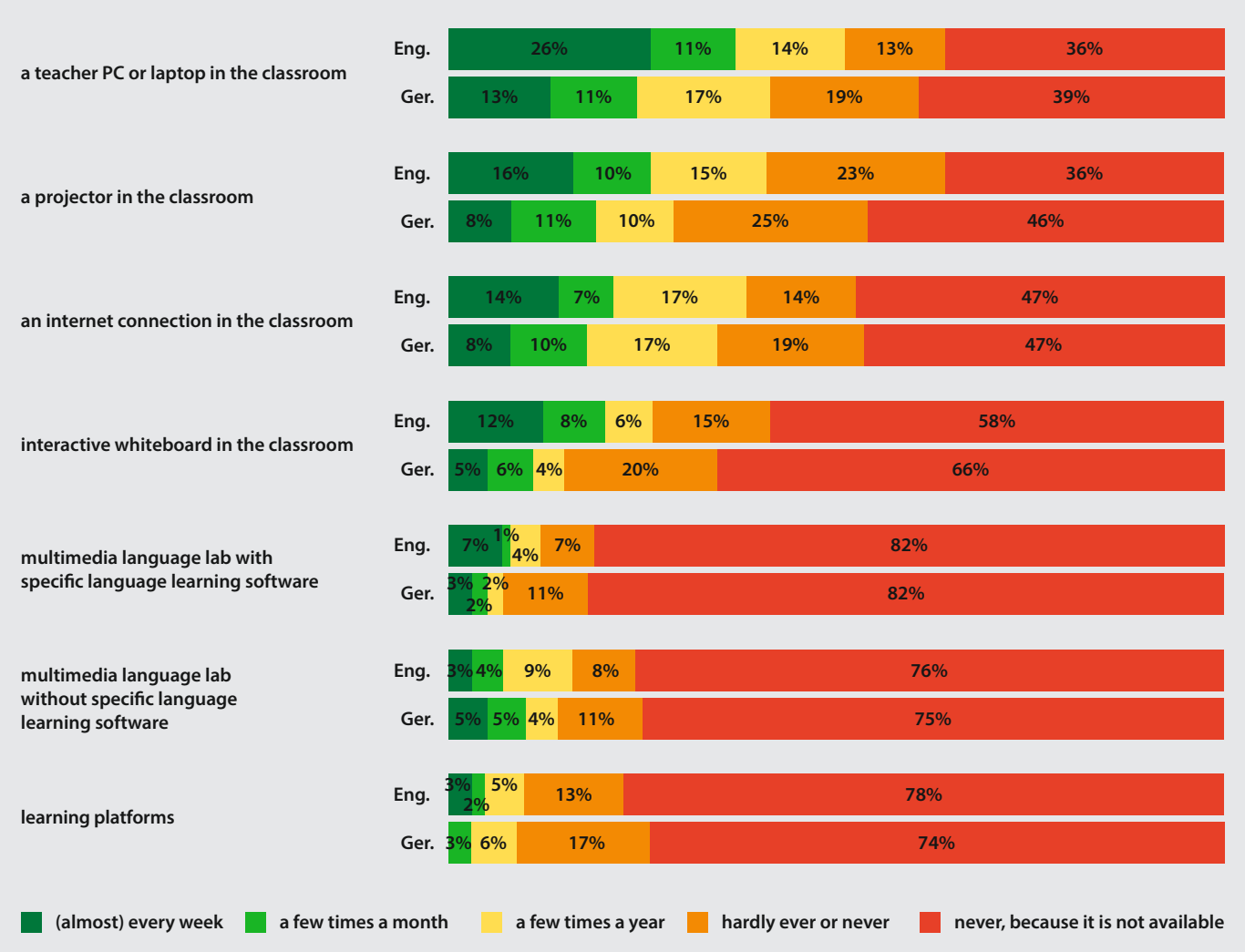
**Graph 8.5. Typical weekly time spent using computers during foreign language lessons by 15-year olds — PISA 2009 student declarations.**




*Source: IBE calculations from Euridice, 2011, pp. 51-52.*

Slightly broader access to equipment and software is enjoyed by teachers at lower grades of primary schools. In the BENJA study almost half of the English teachers had access to a computer in the classroom. An interactive whiteboard was available in every third school. Wider ICT availability can be related to the fact that all lower grade lessons take place in one classroom where equipment is the responsibility of early education teachers and the English teacher is only a visitor. Such a classroom is the responsibility of one teacher who takes care of its modern equipment. According to the study on the time and working conditions of teachers (Federowicz et al., 2013, p. 42) early education teachers are the ones with most frequent access to their own classroom (95% of respondents). Lower secondary school English teachers probably have to deal with the lack of their own language classroom more frequently than 1-3 grade teachers. Their lessons are conducted in various classrooms, which impedes familiarity with equipment and lesson preparation.

**Graph 8.6. The frequency of ICT use by Polish teachers of English (Eng.) and German languages (Ger.) according to teacher responses in the ESLC survey.**




*Source: From the ESLC 2011 study .*

A study of Polish foreign language teachers conducted in 2000-2005 by Gajek (2008) showed a steady improvement in teachers' declared competence for using ICT for teaching and that their proficiency in using new technologies was related to their positive assessment of these technologies for teaching foreign languages. However, in the same study, when assessing barriers to the use of ICT during lessons, apart from lack of available equipment, teachers often indicated their fear that students would damage the equipment, lack of competence with multimedia software or experience with ICT either for teaching or their own learning of the foreign language. This may mean that many teachers still lack preparation in terms of teaching methodology supported by new technologies.

Effective foreign language teaching is clearly possible without ICT. The presence of ICT during lessons alone does not guarantee success and the relevance of new technologies is guided by the goals for which they are selected and used. However, it should not be forgotten that children and young people are digital natives (as opposed to many teachers who are digital immigrants) and new technologies are part of their daily life. Absence of ICT from schools makes teachers rather old fashioned and unable to perform one of their functions: preparing students for the real life situations, characterised, among other things, by the increasing presence and significance of new technologies. Most importantly, the internet and new media are an invaluable source of authentic language. It is a fast and cheap medium for communication, which offers great potential to teaching. Schools

should provide teachers and students with access to ICT. Teachers should make efforts to ensure the development of their own competence in the area, considering the benefits that integration of ICT with daily teaching can bring.

### 8.2.5. Monitoring and assessment of student progress

One problem with monitoring and assessing student progress during language lessons relates to the fact that assessment of selected language elements does not accommodate the skills necessary for communication, which requires the simultaneous use and integration of a variety of skills. Despite this fact, it is widely assumed that systematic monitoring of fluency and proficiency level of language sub-systems (vocabulary, grammar, spelling and pronunciation) and skills (written and oral assignments, including formulation and interaction, reading and listening comprehension) is a valid solution in formative assessment (Komorowska, 2007b; Tomaszewska, 2009). At the same time, it is important to monitor students' progress in all of these areas in order to avoid the backwash effect, i.e., students' only learning and valuing the aspects which are tested and graded.

Different aspects of language are monitored and assessed with varying regularity. According to students (BUNJO), 24% of them were regularly graded for their spoken production and interaction, whereas regular tests in listening and reading comprehension were reported by as many as 42% and regular evaluation of written production and interaction, 55%. Teachers of the largest group of lower secondary school students (58%) regularly tested grammar and vocabulary. It follows that vocabulary and grammar were the most often tested, whereas testing spoken language – the most practical and direct method for testing the main objective of language education – was very rarely used. Such organisation of monitoring student progress might result from the difficulties involved in both teaching and assessment of these aspects of language. It also cannot be ruled out that it results from two clashing perspectives and teaching objectives: development of communication skills (and preparation for the lower secondary school exam, which is a written test not entailing oral assessment. The study on lower secondary students' oral English skills (Gajewska-Dyszkiewicz et al., in preparation) revealed their lack of experience of oral assessment using dialogue, for example. This may also confirm the teachers' low frequency of monitoring student progress in oral communication skills. Decisions about which language areas are assessed and whether they are graded give the learners an important message about the priorities in foreign language learning and teaching.

Work input and individual student potential were important reference points in teacher assessment of student work. A large group of the BUNJO study respondents declared that they reflected student classwork and engagement in marks awarded. Marking effort and activity in lessons, is intended to motivate and encourage lower secondary school students to work. Some teachers emphasised that they used assessment procedures adjusted to students - relative and depending on their effort rather than the objective effects. This way teachers attempt to allow every student the opportunity to enjoy a sense of satisfaction from learning. It was, in their opinion, one method to individualise teaching.

Monitoring and assessment of student progress should follow at least two rules: clear definition of rules and criteria for assessment and feedback - descriptions of assignments and comments on work are critical to the educational nature of assessment (Tomaszewska, 2009). Students declared knowing and understanding the rules of assessment. The interviews with lower secondary school students conducted as part of the BUNJO study indicated that most teachers described the assessment criteria in reference to overall class performance and to test performance. Besides, they declared to provide feedback to students. In the survey part of the BUNJO study, 66% of students indicated that their teachers explained how and what to learn in order to achieve a particular mark. The same proportion of respondents declared that their grades reflected their knowledge of the language. More than three quarters of the lower secondary school students perceived their teachers as fair to all students. The data collected in this study showed that teachers considered the monitoring of

student progress as important. However, it is worth noting that the data does not provide information about the qualitative aspects of assessment or provision of feedback, which would determine their actual educational value.

### 8.2.6. Supporting contact with the foreign language

The role of a foreign language teacher is not only in nurturing development of communication skills during lessons but also in recommending and organising various forms of after-school learning. Effective foreign language learning requires out-of-school contact with the language in circumstances stimulating a natural need for conversation or correspondence with people who do not know our native language (Long, 1981, 1996; Gass, 1997; Lindgren and Muñoz, 2013). Such opportunities are created by international language projects, such as Comenius or eTwinning. Engagement with a project, with teachers and students from two or more countries, creates an invaluable opportunity to add a new dimension to learning a foreign language. This language, often regarded as just another school subject, becomes a tool for sharing information and allows relations to be established with students from partner cooperating schools.

However, participation of grade 1-3 primary school English teachers in international education projects according to the BENJA study was less than 9%. The projects involving participation of foreign schools were mainly within the Comenius (53%) and eTwinning (37%) frameworks. According to teachers whose classes participated in these projects, the most frequent student contact with English was during visits of students from partner schools - 34% and e-mail correspondence in English - 30%. Only in five cases (10%), could students visit the foreign partner school and in six (12%), they had the opportunity to talk to their counterparts using the internet. The latter form of contact is now commonly available, with a lot of potential for various activities with students from partner schools and we should hope that in time it will be more frequently available to students through participation in projects.

In lower secondary schools, teacher support for contact with foreign language in authentic communication situations seems slightly more intensive. In the ESLC study, approximately every second lower secondary school English and German language teacher indicated that they encouraged students to find pen pals using e-mail or instant messenger systems at least once during the last three years. However, fewer teachers of either language were engaged in organising cooperation projects with foreign schools - 42% of German and 37% of English teachers. Participation in organised visits of students from English or German native speaking countries was reported by 14% of English and 35% of German teachers.

### 8.2.7. Shaping attitudes towards learning foreign languages

Creating the conditions for deepening knowledge, developing competencies and skills is not the only school objective. Schools should also shape student attitudes, including positive attitudes towards subjects taught. One approach is to demonstrate application of acquired skills in everyday situations, to emphasise their significance and application in the future, educationally and at work, to build student autonomy and readiness for lifelong learning (MEN, 2008).

It might seem that good knowledge of a foreign language in the modern world is commonly recognised and accepted capital, so schools do not play a key role in shaping such attitudes. However, there is a group of students lacking appropriate support in their immediate environment. Every fifth lower secondary school student in the BUNJO study indicated that nobody cared whether they learnt a foreign language and every sixth - that everyone around them thought that learning foreign languages was a waste of time. Moreover, the level of parents' knowledge of a foreign language, as declared by students in the ESLC study was one of the lowest in Europe: 80% of lower secondary school students indicated that their parents either knew the target language a little or not at all,

which suggests that students' immediate environment might not be the best reference point for shaping their educational aspirations in the area of foreign languages. Therefore, it appears that the role of the school in shaping positive attitudes towards learning foreign languages is crucial to many students and sometimes it is the only source of motivation.

Teachers seemed to recognise this need. As mentioned earlier, one of their most frequently indicated priorities set for teaching lower secondary school students is precisely to shape a positive attitude to learning foreign languages in two dimensions: by showing the usefulness of the language in daily life, encouraging after-school contact with the language and by enhancing the positive student self-image, i.e., creating a good classroom atmosphere, offering learning satisfaction, supporting positive self-assessment and eliminating lack of self-confidence in using the language even if it is not yet mastered fluently. Are teachers successful in achieving this goal? Do students have a positive attitude towards learning a foreign language and themselves as students? Assuming that a measure of effectiveness in this area is in student declarations about the relevance of knowing a foreign language in life and attitudes towards learning a foreign language at school, these questions can be answered positively.

As the ESLC study results show, the vast majority of lower secondary school students had recognised the benefits of knowing foreign languages in their future education, professional lives and some aspects of their private lives, such as travelling or entertainment (Gajewska-Dyszkiewicz, 2012). Students also positively assessed their language lessons as a school subject - most perceived the foreign language as one of the most useful and liked, lower secondary school subjects. Teachers were also liked - the vast majority of students claimed they enjoyed good relations with their teacher and that they made an effort to improve the attractiveness of their lessons. Also the experience of primary school learning of a foreign language was positive. Around two in three lower secondary school students in the BUNJO study declared that they liked their English teachers and lessons at the previous education level and they had no difficulties learning. The positive atmosphere during lessons was confirmed by the fact that a high proportion of lower secondary school students liked their foreign language group, thought there was good cooperation inside the group and that the teacher was friendly and helpful. This was also supported by the low proportion of students declaring that they felt ashamed to speak English in front of others.

These lower secondary school student attitudes towards learning foreign language and their self-image as learners, indicated that in this area teachers operated effectively. This is good news, since a good lesson atmosphere and student motivation are one of the pre-requisites for effective learning and students' affective factors are identified in the literature on the subject as predictors for success (but not the only) with the foreign language (Bielska, 2011; Dörnyei, 2005).

A good example of the significance of attitudes towards learning situation and student self-image was in their relation with foreign language achievement in the ESLC study. The influence of these factors turned out to be one of the strongest and explained from 25 to 31% variance in the English test results among Polish students (depending on the language skill tested (Gajewska-Dyszkiewicz et al., 2013, p. 69). It should also be remarked that these positive phenomena concerned most students, but not all, so activity in this area remains important for teachers. Additionally, it should be noted that in the Polish ESLC study, the indicators for positive attitude towards German were lower than for English. This suggests that teachers of less popular languages than English should make an extra effort to emphasise the value and usefulness of the language they teach.

## 8.3. What helps or interferes with the work of foreign language teachers?

Teachers' voice in the discussion on the barriers to effective language teaching and remedial measures offers a valuable insight into daily school reality. In the BUNJO interviews, English teachers had the opportunity to share their views on conditions and solutions to favour improvements in quality and effectiveness of teachers' and students' common efforts to raise the standard of lower secondary school language teaching and learning. Problems, difficulties and ideas reported, covered a wide range of issues at different levels - relating to students themselves, lesson organisation, school material resources, organisation of language teaching at school and the language education system. This also proves that teachers reflect on their work.

Many lower secondary school teachers regard students' level of interest and engagement during English lessons to be insufficient. Students declared motivation to learn a foreign language, as mentioned earlier, and their lack of motivation, as experienced by teachers, do not contradict. Learning a foreign language is a long-term process requiring effort with deferred effects and for students knowledge of a foreign language is a long-term and distant aim. The observed lack of engagement during lessons may result from students' difficulty in perceiving tasks set for lessons as leading to this general, distant aim or their failure to grasp the pertinence and purpose of these tasks. The teacher should help students by formulating with them the short-term learning goals, the purpose of a given task or lesson and by joint evaluation of their effects. Encouraging students to reflect on their own learning and supporting learner autonomy are equally important. Goal-orientedness is regarded as one of the most important factors in sustaining motivation for language learning (Dörnyei, 2005; Dörnyei and Ushioda, 2011).

A frequent theme appearing in language teachers' declarations was adoption of new information and communications technology into their teaching. In their opinion, it made their lessons more attractive, since new technologies and multimedia form part of students' natural environment. A variety of teaching materials and aids used during lessons also support effective teaching. It seems that, apart from issues with availability outside teachers' control, these are areas in which teachers can exercise their influence. The core curriculum allows freedom of choice with teaching aids, materials and techniques, so teachers can adjust to students' needs and interests.

Another frequently mentioned aspect of foreign language teaching in school, potentially influencing effectiveness, relates to its organisational framework - teaching groups. Teachers believe that groups for which obligatory lessons are conducted should be small and relatively homogeneous in terms of student proficiency, which would permit adjusting pace and types of work to the majority. Many teachers also believe that more hours of language teaching – obligatory and after school, adjusted to individual student needs (including both students with learning difficulties and the gifted) – would positively influence the effects in lower secondary schools. It should be noted that organising foreign language teaching in groups according to student proficiency level is a recommended condition for implementing the core curriculum and conducting after-school lessons is an element of teachers work stemming from the provisions of Article 42 of the Teacher's Charter. Therefore, teachers recognise and confirm the benefits of these statutory obligations (Paczuska et al., 2014).

What obstacles prevent lessons in Polish schools from being more effective? Many system level and organisational efforts have already been made: the age for mandatory foreign language learning was lowered and now students learn the language for the entire duration of their school education. Large classes must be divided into smaller groups during lessons. These conditions are favourable for Polish students in comparison to other European countries. An area requiring more effort is using lesson and after-school time to increase opportunities for students' active use of foreign language. Excessive focus on textbooks and poor use of various teaching aids and resources, as well as types of classroom activities are not conducive to developing communication skills.

## 8.4. A good foreign language teacher for modern times

The quality of education depends on many factors, but the role of the teacher - a person entering direct relations with students and immediately responsible for their teaching and leading in this process - is invaluable. At the same time, there is no single recipe for language teaching that guarantees success. According to Aristotle, the whole is greater than the sum of its parts. Sometimes the element that determines effectiveness and exerts the greatest influence on quality of teaching is the elusive interaction between individual teaching activities, internal and external school conditions and student abilities, etc. A good illustration of the difficulty in replying to the question about the definition of a good language teacher can be found in a qualitative study identifying the qualities of an effective language teacher in the Polish context. It demonstrated that even though it was possible to distinguish a number of qualities common to expert teachers, uch as high proficiency in the foreign language, perfect time management during lessons, interpersonal skills, conscientiousness, fairness, orientation towards general student development, enthusiasm and a passion for teaching their subject and their work - they represent various teaching styles (Werbińska, 2004, 2011).

Taking into account the variety of conditions and contexts teachers face, creating the universal portrait of an ideal teacher seems impossible and baseless. It is possible, however, to identify a framework of conditions - language teacher competencies - which permit effective teaching in the Polish education system, the organisational framework for teaching in schools, the specificity of Polish students' needs and the challenges posed by the 21st century.

A good foreign language teacher has an excellent command of the target language and general linguistic knowledge. They also possess factual knowledge about the target language country or countries, i.e., the history, culture, social and political life (Komorowska, 2011). Apart from supporting development of students' language competencies teachers also should develop their cross-cultural competence, respect and openness towards other cultures and traditions.

Another competence that a good teacher should master relates to subject teaching methodology. Together with its traditional understanding as ability to apply teaching methods and techniques, planning and organisation of the teaching process, selection of teaching materials, operationalising teaching objectives, there are other interesting aspects. These include, to name but a few, preparation to teach various age groups - children, young people, adults, preparation for content and language integrated learning (CLIL), teaching language as a second/another foreign language, teaching language for professional purposes and distance teaching of foreign language (Zawadzka, 2004). A good teacher also knows how to motivate students, develop autonomy, learning strategies and readiness for life-long learning.

A good teacher has and uses a rich knowledge and skills in psychology and pedagogy. Teaching any age group requires knowledge of their specific developmental and cognitive psychology. Understanding the processes for learning foreign language before the age of 10 seems especially important, because young children behave differently to older students. Having lowered the age for mandatory foreign language learning to preschool, understanding the requirements of work with the youngest students seems to be a new, important area for teacher competence, requiring not only knowledge of cognitive processes, but also the ability to apply appropriate teaching techniques based on play.

In the opinions of researchers, teachers and students themselves, learning a foreign language differs from other school subjects (Borg, 2006). The peculiarity lies mostly in the fact that language is a means of self-expression. Learning a new language also infers adoption of a new and different social identity (Pavlenko and Lantolf, 2001; Williams and Burden, 1997). Therefore, appreciating the psychology of individual differences and being aware of the influence of affective factors on student learning is important. A good teacher caters for emotional needs of students. A foreign language teacher is also an educator shaping the norms and rules of behaviour, social and civic responsibility of students, respecting their subjectivity. Interactive skills also belong to indispensable competencies

of a foreign language teacher (Komorowska, 2011). Undoubtedly, a teacher who is teaching communication has to be a skilled moderator of interaction and himself/herself be communicative.

Professional competencies are dynamic and demand ongoing development during a teacher's career. In service teacher development is highly individualised, as it largely depends on the level of openness, and ability to reflect on their own work (Wysocka, 2003). A good language teacher is an innovator, researcher and reflective practitioner. It is the teacher who can interpret and critically evaluate their actions and their conditions, introduce changes, including innovations.

The areas discussed above, concerning competency and skills of a good foreign language teacher, should be supplemented with new areas of competence for a 21st century teacher stemming from widely understood change in contemporary society (Eurydice, 2002, p. 49). Even though they go beyond subject-oriented knowledge and skills for foreign language teaching, they are worthy of attention, as they relate to professional activities and situations also encountered by language teachers. The first of these areas are *information and communications technologies*. Their daily presence makes skilful exploitation of ICT in teaching and for development of students' critical approach to media (for example selecting useful information) indispensable. Together with the trends observed in some countries to broaden the scope for school and teacher autonomy, another area demanding teachers' specific skills and knowledge includes *administration and management*. Other domains residing in the reality of school and which challenge many teachers include *integration of students with special educational needs and work with multicultural groups of students*. The final new areas of competence for 21st century teachers are *managing student behaviour*, maintaining discipline, conflict solving and mediation in various relations: student-student, teacher-student, student-parent and teacher-parent, etc.

However, teachers do not operate in isolation. Effective instruction requires basic tools and teaching materials: visual aids, authentic materials, foreign language literature, dictionaries and various audio/audio-visual aids, CD player. To use these effectively and freely, a teacher needs appropriate working conditions, such as a properly equipped classroom. The ideal language classroom includes trapezoidal-shaped light desks which can be easily moved and set together in groups, rows and squares. Such freedom encourages students to engage in various forms of interaction easily in pairs and in groups. Chairs should also be light, so that during lessons, students can engage with a teacher, rearranging classroom equipment as required for group work, project presentations or in front of the class. Variety, also in terms of types of classroom activities, is necessary for maintaining student motivation and their active engagement in the learning process.

The ideal classroom has interestingly, aesthetically and thematically adapted walls, including maps, information about countries where the target language is spoken and posters illustrating grammar. There is also a place to display student work. A properly equipped language classroom should have access to the internet and at least one computer with a multimedia projector. It allows the teacher to present various audio-visual materials, short films, sketches, music videos and students can present their own work. Such equipment ensures the option of organising teleconferences with partner schools in international projects, provided they also include a web camera.

A small library containing dictionaries adjusted to students' proficiency and age - picture, bilingual and monolingual - are an important element of every language classroom. Students should have free access to these dictionaries during lessons and breaks, especially when they work individually or in groups. This allows them to develop autonomy, without which it would be hard to imagine reaching higher performance levels. This library should also include foreign literature, from richly illustrated children's books in primary school to abridged and original versions of classical and contemporary literature for young adults in lower and upper secondary schools. Contact with a foreign language through interesting text promotes a sense of learning success and also offers learning a practical dimension - a student reads for pleasure, to acquire additional information and the foreign language becomes useful in daily life.

Undoubtedly every good language teacher has rich collections of such materials and aids, is able to organise frequent sessions using computers and can obtain a handful of dictionaries and books from the library. However, work in a fully equipped classroom would be much more effective and less onerous.

Reflection on a good foreign language teacher should include the student perspective. In their opinion, during an ideal lesson, a teacher devotes a lot of time to students and explains patiently. There is a good atmosphere, the teacher introduces elements of humour and the group cooperates well. The teacher organises various forms of work for lessons, especially interaction-oriented activities, such as group work or discussion. Teaching materials and aids are varied and should include authentic materials. The teacher emphasises practical application of the language in daily life and creates opportunities for student contact with the living language. The quoted opinions of lower secondary school students, gathered during interviews as part of the BUNJO study about ideal English lessons, accord with the postulates of contemporary foreign language teaching methodology. Student descriptions of good teachers and lessons were consistent with those given in the subject literature. Surely, many foreign language teachers identify themselves with such a profile.

# 9. History teachers

## 9.1. Introduction

Authors:
*Jolanta Choińska-Mika*
*Jakub Lorenc*
*Krzysztof Mrozowski*
*Aleksandra Oniszczuk*
*Jacek Staniszewski*
*Klaudia Starczynowska*

As a preliminary point it should be stated that despite the growing interest of public opinion in history teaching, in recent years there have been no in-depth studies in Poland dedicated solely to teachers of this subject. Pioneering findings resulted from two qualitative studies conducted by the History Section of the Educational Research Institute: *Implementation of the New History Core Curriculum in Lower Secondary Schools* (2011) and *Good Practice in History Teachin*g (2012) Both studies focused on teaching history in lower secondary schools as a result of radical changes at this education level in terms of curriculum and the introduction of the new exam format for the subject. The decision to begin with qualitative studies stemmed from the conviction that they would provide the most detailed picture and would be helpful in determining areas requiring further analysis. These studies were a stepping stone for further studies: a quantitative study, Historical Skills of Lower Secondary School Leavers and a qualitative study Implementation of the New History Core Curriculum in Upper Secondary Schools. Both studies were still in progress when this report was created.
Therefore, this chapter will be based on the two earlier studies. They both offer the advantages of being up-to-date and have a qualitative, in-depth character. The chapter also refers to other, older studies, but in view of changes introduced to school history education in the core curriculum reform of 2008 they played the auxiliary role and were used only when their findings are still considered current.

## 9.2. History teaching objectives

Description of the work of history teachers should be preceded by a reflection on what might distinguish history teachers from other subject teachers. Here, we have in mind certain social expectations from history teachers which go far beyond knowledge transfer, in Poland, connected with the traditional role associated with history teaching. Knowledge of history in Poland is regarded as a an important part of national identity and a cultural bond.
Every change in the model for history education arouses great social interest or even, as demonstrated by recent experience - heated political debate focused on detailed teaching solutions or particular textbooks. Teaching history is supposed to not only familiarise students with their heritage, but also shape their attitudes - convey models and teach values associated with tradition, especially of the country, enhance attachment to ideas of freedom, introduce the world of universal ideals and aid a better understanding of the world and mechanism of social life. An equally important objective of historical education is preparation of students for participation in public life (see Babiańska et al. 2009; Choińska-Mika, 2012). The studies showed that history teachers were aware of these expectations and regarded fulfilling them as a natural aspect of their work. They are responsible for organising school observance of National days. Sometimes they also engage in similar activities for local communities, participate in creating local history programmes, commemoration of local traditions, for example by conducting lessons about traces of the ancient traditions in their towns or the history contained in local street names.

*The teacher's role lies in preserving and transferring tradition. (...) People should know the country they live in, their roots, traditions and customs. So that they understand where they come from, their connection to other cultures.*

*What do I want? I want [students] to be proud to be Polish. I feel that they are ashamed of being Polish, they deny that when they are abroad. I keep telling them that as Poles we have reasons to be pleased. We should be.*

*I would like [students] to be passionate about history, to be interested in history, to know the history of our town, to be able to defend themselves in some discussions (...), that Poland has a great value, that this history has beautiful and weak moments.*

*I try to transfer my enthusiasm [onto students] and answer questions such as "Why do I need history?", [show them] that history is about our roots, we are history, it is our identity; I treat this subject with pathos, [when] I am organising some school celebrations, I want to do it in such a way that students are impressed by history.*

[*Implementation of the New Core Curriculum,* teacher interviewsi]

Teachers interviewed perceived their role in two ways: they appreciated the educational value of knowing history, they also declared knowledge of new objectives emphasised by contemporary history teaching and the new core curriculum, such as familiarising students with elements of historian's methods, shaping so called historical thinking and skills enabling creative and active participation in the cognitive process (see the Good Practice study; Babiańska at al. 2009; Maternicki, Majorek, Suchoński, 1994).

## 9.3. How do history teachers plan their teaching?

Planning the teaching process, especially differences in the ways teachers prepare history lessons results mainly from their varied professional experience. Teachers with less work experience willingly use ready-made lesson plans published by educational publishers or prepare their own lesson plans describing not only objectives but also teaching aids, especially historical sources. As they reported, especially novice teachers, it gives them, a greater self-confidence during lessons. Teachers with a more experience create lesson plans much less frequently, because - as they emphasise in interviews - they do not feel the need. They usually adjust smoothly to changing teaching situations using previous experience - their own or that of their colleagues. They take advantage of various inspiration skilfully combining it with a new narrative.

Regardless of the solution chosen by interviewed teachers, their declarations concerning their effort and time to prepared lessons were similar. All respondents emphasised that they usually prepared at home and it involved a lot time (*Implementation of the Core Curriculum*, 2013). The duration of lesson preparation depended mainly on the difficulty of the lesson subject and methods planned. The more complex teaching solution that is planned for the lesson, obviously, the more time it takes to prepare. The availability of teaching materials is also an important factor - teachers devote a lot of time finding them, searching through internet resources, available monographs, etc. The look for interesting source materials, iconography and maps other than those in the textbook.

It is worth mentioning that these declarations were confirmed by the *Time and Working Conditions of Teachers* study results (pp. 96, 101). They showed that history teachers, along with Polish language and mathematics teachers, spent the most time on lesson preparation. Respondents in the *Implementation of the Core Curriculum* study indicated that the time necessary for lesson preparation largely depended on teacher experience.

Owing to the necessity for varied teaching materials during lessons, including various historical sources, teachers are inclined to collect them, creating private collections usually kept at home. Respondents in the *Implementation of the Core Curriculum* study rather unanimously declared having their own collections which they used for various purposes - to diversify classwork, broaden contents of textbooks, and organise lessons better. Teachers' resources contained scientific and popular monographs, their own notes (often from their own higher education), materials from the internet or gathered during workshops and ideas borrowed from other history teachers. Lesson plans and scenarios constituted a separate collection. It is obvious that creating a private collection, often including varied materials and keeping it up to date, requires a lot of work from teachers and only pays off after some time.

Respondents emphasised that the proper starting point for lesson planning was the textbook. Contemporary history textbooks are usually richly illustrated and contain source materials and student exercises. They may certainly facilitate teachers' work but their use also has negative consequences - making teachers lazy, limiting their initiative and willingness to search for original solutions. This also infers orientation of teaching towards the programme associated with the textbook rather than the core curriculum, which not only has detailed requirements (in terms of content) but also a general nature. Teachers tried to exploit all aspects of a textbook, but sometimes they rejected solutions which seemed too difficult or did not prove useful during lessons with other groups.

Once prepared, lesson ideas or plans to discuss certain subjects, plans and their methodological solutions were usually used in subsequent years, even if applied in a slightly different way each time. Teachers who taught several parallel classes in principle did not create separate lesson plans but rather modified the basic version of the lesson according to the characteristics of each group (*Implementation of the Core Curriculum*, 2013). All respondents emphasised that they tried to be flexible.

*The primary factors for selecting a particular method were students and their intellectual abilities. Some skills proved difficult to develop in the 1st grade of lower secondary school but were easier in subsequent grades. When I know the group well I choose methods. If they produce expected results I use them more often. But they don't always work out in a parallel class.*

[*the Good Practice* study]

Teachers declared that they modified their teaching ideas in view of the core curriculum requirements and availability of source materials or teaching aids. Participants of the *Good Practice* study indicted adjusting their lesson to the level of skills and needs of their students as the most important factor influencing their daily work (the Good Practice study, 2013). It should be noted here that the Ministry of National Education postulates adjustment of the level for teaching not only to suit the whole class in general (usually understood as majority of students) but also to individual student needs, as stated, in the regulation concerning pedagogical supervision ("Teachers should apply different teaching methods adjusted to the needs of a student, group and unit"; "Students influence the organisation and implementation of the teaching process", Regulation concerning pedagogical supervision, 2013, p. 9).

## 9.4. How do history teachers teach subject skills?

History teachers play an important role in developing subject skills, among which communication in the native language - including both understanding text and creating it – which occupy an important position. Analysis of source materials during lessons is becoming increasingly important - teachers try to develop their students' critical reception and interpretation of potentially diverse types of historical source materials, they teach argumentation, ability to prove their standpoints and

create historical narrative. Developing these competencies supports creation of the foundation for historical thinking.
Interestingly, history teaching objectives were similarly defined in the study conducted by Maria Kujawska in the mid-90s of the 20th century. The study aimed at describing the model preferred by teachers for teaching history (Kujawska, 1996). This qualitative study included active history teachers, students of this subject and academic teachers as participants. Most recognised the shaping of the foundations for historical thinking as the primary aim of teaching history. This was followed by fostering students' historical interests and applying their knowledge of history.
It should be emphasised that changes implemented in 2008 to teaching history fully corresponded with expectations expressed in the quoted study from the mid-90s. The core curriculum stressed shaping historical thinking, identifying three major areas of competencies to be developed throughout the entire course of education:
1) historical chronology,
2) historical analysis and interpretation,
3) developing historical narrative.

Requirements for each education level (in this case: lower secondary school) were quite precisely described and were the reference point for the two studies.

### 9.4.1. Historical chronology skills

Participating teachers agreed that developing chronology skills was an important objective for teaching history. Lesson observations, teacher and student statement confirmed that assignments relating to these skills were quite frequently introduced, during both lessons and tests. The core curriculum for third level education defines two main skill sets related to chronological thinking (see Lorenc et al., 2012). Students should "place historical events and processes in time, sequence and establish relations of precedence, simultaneity and subsequence" and "notice social changes in life and continuity of cultural and civilisational development". These requirements are interpreted by teachers in various ways (*Implementation of the New Core Curriculum*, 2013). Unfortunately, competencies in chronology are still associated with memorizing dates and tested with assignments requiring students to order people or events chronologically or associate dates with centuries. Tasks developing more the complex skills and elements of chronological thinking, such as structuring events based on cause-and-effect analysis, relations of precedent and consequence, synchronising facts or relating events from the distant past are rarely introduced in the classroom environment (*Implementation of the New Core Curriculum*, 2013).

*I assess their knowledge of dates, first of all by writing dates next to important events, then by ordering events without dates in chronological order.*

*[Students] should be able to move in time. They should be able to report what happened earlier and later (...). They should be able to relate events from the same period but in different places, so if this happened here, that happened there.*

[*Implementation of the New Core Curriculum,* teacher interviews]

### 9.4.2. Historical analysis and interpretation skills

The core curriculum requirements describe extensively and in detail the historical analysis and interpretation skills students should develop at each level of historical education. Teachers interviewed stressed the importance of developing these areas of competence (*Implementation of the New Core*

*Curriculum*, 2013). Some also indicated the practical dimension of historical analysis - in their opinion, it helped to explain contemporary phenomena, facilitating
- as knowledge of the past - understanding current events.
Included among the competencies belonging to analytical skills, participants of the study chose the ability to perform a simple search and compare information from different sources, to explain the genesis and consequences of specific events and phenomena as the most fundamental. They also highly ranked the ability to notice and explain causal relationships followed by the ability to point at information, explanation and evaluation layers in a historical narrative, noticing varied difficulty levels of forming and developing these competencies.
In school practice, the quality of development of historical analysis and interpretation skills depends primarily on teachers' activities. Some teachers declared that they systematically and consciously develop the analytical skills of their students using assignments including diverse source materials. They also emphasise the ability to analyse and interpret causal relations, putting in into the context of teaching logical thinking.

*In the 3rd grade of lower secondary school they receive two texts, they find it in one, then in the other, and then they often compare them. Perhaps they don't always succeed, because it's difficult, but they begin to compare. In terms of extracting information from both texts.*

*[I] try to give all of them the source text, so that they not only hear it but also see it, they have different predispositions. So I try to give them at least one text per desk, if not for every student. I give them specific tasks and then tell them, that we can do the exercise individually, in pairs, sometimes in groups, sometimes in from of the class. We perform the tasks, sometimes I grade them and sometimes not, it depends, but each test contains some source text, even the shortest ones.*

[*Implementation of the New Core Curriculum,* teacher interviews]

Not all participants of the study managed to do this consistently.
Lesson observations revealed little variation of the types of sources applied or methods of working with them. Teachers usually resorted to reference texts and historical maps, using iconographic and statistical sources less frequently. Also the manner of using sources and the depth of analysis were varied. During some lessons source materials only illustrated the subject discussed or made the narrative more attractive. Students were only expected to briefly review its contents or search for some simple information. In these cases the analysis in fact ended where it was supposed to begin. Limited development of historical analysis and interpretation skills is partly the consequence of teachers' conviction that exercising these skills is a time-consuming process and as such it obstructs the efficient implementation of the content and teachers were and are evaluated from this point of view, even though the core curriculum does not focus on content but on skills. Therefore, it seems worth further study of the assessment criteria teachers apply in school practice, focusing on those which can demotivate teachers and discourage them from using more varied methods for lessons.

### 9.4.3. Developing historical narrative skills

Creating historical narrative, i.e., formulating oral or written statements about a given subject is obviously connected with history and integrates various student competencies. Teachers participating in the *Implementation of the New Core Curriculum* study stressed the particular usefulness of student ability to infer and argument, as well as to compare information from different sources. Developing these competencies by teachers through appropriate exercises prepares students to create individual written narratives. Observations conducted as part of the study showed that during lessons students are encouraged to present their opinions and arguments. At the same time an important aspect was noticed that could possibly decrease the efficiency of teachers' efforts - even though the

ability to formulate problem questions with open answers is regarded as one of the key teaching competencies. In many observed cases, questions were formulated in such a way that they required a very short answer, sometimes even limited to one sentence (e.g., "When was the Constitution of the Republic enacted?" or "Who was Stanisław August Poniatowski in the hands of Catherine the Great?"). Asking additional questions often changed the character of the exercise and does not lead to development of historical narrative skills. Written statements were slightly more elaborate, but short forms, even single paragraph, still dominate. Tasks involving results from analysing historical sources are similar. Students only elaborate longer statements as part of their homework, requiring more effort and consuming more time than possible during lessons.

The time-consuming nature of exercises developing a narrative is the barrier most frequently declared to including such exercises in lessons. Another justification for some teachers for abandonment or limiting of these activities is the construction of lower secondary school history exam. Some directly stated that the form of the exam (lack of a separate task requiring a longer statement) is the reason for focusing on other competencies rather than narrative creation. These statements are particularly worrying, because they demonstrate that some teachers willingly limit their interests and teaching activities to aspects tested by the exam. Teaching selectively and with a short-term objective (only for a particular exam, without noticing the evolution of the exam form), they do not implement all the teaching objectives.

*Until now, for all these years, I used to give students written assignments at least once per semester, they wrote, I corrected. I admit I don't do that anymore. (...) I should, however, because [student writing skills] are getting worse.*

[*Implementation of the New Core Curriculum,* teacher interviews]

Teaching how to create a historical narrative (especially in a written form) is a great teaching challenge for lower secondary school teachers. Interestingly, teachers are prepared for these activities, since they practice skills with students such as combining and comparing information from different sources and writing elaborate written assignments as part of school societies or preparing selected students for history competitions (*Implementation of the New Core Curriculum*, 2013). The comprehensive explanation of this dissonance requires further research.

## 9.5. What teaching aids are used by history teachers? How?

Observations conducted in schools show that history classrooms are usually well equipped with teaching aids. These are usually wall maps, atlases or collections of source texts. Nevertheless, textbook still remains the most important teaching aid for lessons and organises the entire teaching process (*Good Practice*, 2013; *Implementation of the New Core Curriculum*, 2013).

Some teachers use all textbook content, both author's narrative and elements of the teaching plan, especially source materials and assignments. Sometimes the text is read aloud and commented on by teachers or students. Sometimes lessons take the methodologically inappropriate form of students working individually with their textbooks (Implementation of the New Core Curriculum, 2013). The textbook also remains the basic source of knowledge required for homework. Therefore, the selection of a good textbook becomes even more important. Usually the teacher of the humanities team is responsible, sometimes the decision is left to the principal. Teachers declare that they base their selection on their contents and the usefulness of its teaching plan.

The teacher interviews revealed that they perceived regular use of the teaching plan as significant for development of various competences, especially reading comprehension, inference and critical thinking (*Implementation of the New Core Curriculum*, 2013). However, during some of the observed lessons the potential of source materials was not fully exploited and materials (usually source texts)

were only an illustration for events described by teachers (*Implementation of the New Core Curriculum*, 2013), which corresponds with the earlier conclusions related to shaping historical skills.

*We read together. I usually ask students to read the source text. The textbook already contains questions for each text. We always answer these questions from the textbook and then I try to ask my own questions related to the source text.*

[*Implementation of the New Core Curriculum,* teacher interviews]

Other important teaching aids used during history lessons include maps. These are easily available, in textbooks, as well as in the form historical atlases or wall maps and on the internet. During history lessons maps are usually used for testing location of places or regions. Sometimes students search for information on the map individually, at other times it only serves as an illustration to the lesson. According to some respondents, it allowed for visualisation of discussed content and facilitated memorization of information by students. The material gathered during the study indicated that lessons during which the maps were used for development of more complex skills, such as reconstructing the process of changing borders or migrations, were rare. Lesson observations confirmed the need to encourage teachers to do more advanced work with maps and other formats of cartographic material - using them to shape and develop student analytical skills (*Implementation of the New Core Curriculum*, 2013).

*[I use maps] in different ways, so sometimes students have to find something on the map..., for example show the itinerary.... Anyway, map is a great source of information (...). We start working with maps by reading its legend.*

[*Implementation of the New Core Curriculum,* teacher interviews]

Iconographic materials are quite often used during history lessons. Teachers are willing to use them as illustrations to the discussed content, people, etc. Portraits of rulers, images of battles or pictures of particular places invariably perform this function. However, an in-depth analysis of iconographic sources during which teachers and students try to read their message and ideological agenda, in our school practice was still a very rare phenomenon (*Implementation of the New Core Curriculum*, 2013). There are several possible reasons underlying this situation. Some teachers even suggested that they did not feel well enough prepared to lead a thorough analysis and interpretation of iconography, which implies that their studies (or training) did not sufficiently include this important element of a historian's technique.
Some statistical materials also appeared during observed lessons. They were much less frequently used, a consequence of their specificity and availability. Not every subject in a history lesson requires using such data. During history lessons teachers use compilations (also in the form of graphs) for discussing issues connected with economy, territorial and demographic changes (*Implementation of the New Core Curriculum*, 2013).

## 9.6. What approaches do history teachers take to their work?

Two forms of lesson dominate history lecture discussion (talk) and lecture. Other methodological solutions involving more activity and individual student work are less frequently applied. It may be assumed that this situation results partly from the tradition of teaching history and conviction that lecture and talk are the most effective classwork methods.

*At the beginning of my career, older colleagues taught me how to conduct history lessons encyclopaedically, in a lecture form. Access to modern aids and methods was different then. Now these old methods don't work on students any more.*

[the *Good Practice study, p. 16*]

Despite the explicitly decreasing focus of the new core curriculum on assimilating information in favour of acquiring skills, for teachers, the measure of their methodological efficiency is still primarily the amount of transferred knowledge and information assimilated by students. Therefore, teachers prefer solutions and methods which enable better explanation of events and phenomena which are the subjects of lessons. The teacher plays the role of the lecturer who informs and explains, while students play the role of listeners. Interestingly, students willingly assume this role. For some students interviewed, a good history lesson is one during which "they learned a lot of information". Without disparagement of this student criterion, it should be noted that limiting teacher activities to information transfer (even if it is positively assessed by student-listeners) significantly impedes shaping historical thinking and, therefore, key competencies.

Winners of the *Good History Lesson* competition emphasised the significance of selecting a good method for work with students, indicating the most important factors impacting their decisions and helping them to achieve the expected learning objectives. Firstly, they try to take into account the diversified level of both students' and entire classes' knowledge. Accounting for the widely understood specificity of a particular student group, including psychological aspects and environmental conditions, such as the type of school, is commonly declared by winners from all over Poland. Clearly, these are also qualities characterising a good teacher of any subject.

Teachers also indicated additional factors for selection of methods for the classroom, including assessment of equal engagement of all students, which occupied important position. The respondents preferred solutions which did not require focusing on one student for too long and allowed controlling the activity level of the whole class, even if this activity was limited to taking notes from the lecture.

It is worth remarking here that the problem diagnosed during history lesson observations which, as may be assumed, was not limited to this subject. Group work is a methodological solution relatively rarely attempted by teachers. Usually all students performed the same task individually. One may ask why this well-established solution, regarded as one of the most effective student activation methods (Chorąży, Konieczka-Śliwińska, Roszak, 2009, pp. 122–124; Maternicki, Majorek, Suchoński, 1994), has not earned a permanent place in teaching. Participants of the study indicated the need for a lot of effort to prepare lessons, both in terms of organisation and content (structuring the content according to the method). It was seen as time-consuming and its realisation did not always achieve the expected objectives. Moreover, as already mentioned, respondents declared class size as an important obstacle in implementing group work, despite the fact that according to specialists researching learning processes, that well-prepared group work can yield even better effects for larger classes (see, e.g., Hattie, 2013, sub-section *Within-class grouping*). Some statements included the issue of "fair assessment" for group work, as well as, its individual members - teachers were afraid to "over-grade" their students, they wanted to make sure that all group members "equally" deserved the mark.

Other student activation methods, such as drama, metaplan technique or SWOT analysis, were also regarded as time-consuming and not always effective. Nevertheless, these solutions had their proponents who regarded them as a valuable method to "revive a lesson." According to these teachers, student activation methods not only sustained students' attention, but also - and more importantly - engaged them emotionally, offering them "the experience of history."

To thoroughly determine the extent to which teachers use student activation methods requires further research, but even now it should be remarked that: 1) teachers experience difficulties in preparing materials for group work because of its time-consuming character, 2) teachers cannot relate

lesson objectives with tasks given to students for group work, 3) they do not know how to assess student work in groups. Therefore, perhaps the lack of relevant teacher training in terms of student activation methods (e.g., insufficient training during studies) and only their intuitive application are the main barriers for wider use. Teacher declarations suggest that they regard student activation methods as attractive but not effective (in terms of learning). This is contradictory to findings by researchers studying the effectiveness of learning who emphasise the need for wider use of these methods (see, e.g., Silberman, 2006).

*It is very difficult to find a balance in the method which, on one hand, will stimulate students' senses the most and, on the other hand, will consolidate their knowledge. Regrettably, in my opinion, in teaching history it is impossible to escape memory-based methods and teach exclusively through experience and attractive student activation methods.*

*I admit, students like it when something happens, so I try to include activation methods into the course of a lesson. But I am not a proponent of forcing oneself to look for modern methods and using the maximum variety of sources during lessons. Perhaps I am conservative in that respect, but these traditional methods also work.*

*Students should not always expect fireworks. Sometimes they are tired by the show and we readily go back to lecture and narrative.*

[the *Good Practice study, pp. 20, 31*]

## 9.7. What is classroom communication?

The very idea of "communication" may be understood in various different ways. The *Implementation of the New Core Curriculum* study focused on several aspects of lesson content (clarity of a narrative, precision of questions and formulated tasks) and social competencies of a teacher (creating classroom atmosphere, willingness to answer students' questions, forms of maintaining discipline, etc.).
During lessons observed as part of the *Implementation of the New Core Curriculum* study the predominating atmosphere was one of mutual kindness. Teachers treated students kindly and with respect; students did not abuse their teachers' goodwill. Participants in the study, both teachers and students, behaved naturally and were not especially uncomfortable with the presence of the observer. Forms of interaction depended primarily on a teacher's personality and then on methods chosen for working with students. Talking and lecturing obviously created fewer communicative situations than student activation methods. Irrespective of methodologies, the clarity of a teacher's instructions is fundamental to the effectiveness of communication. Varied communication styles were observed – varying from short, formulaic commands to detailed instructions. Sometimes the teacher had to clarify commands issued earlier, by explaining them or supplementing them with additional instructions to lead back to the right track.
Teachers paid attention to clear instructions and information about the theme of the lesson, but placed less emphasis on detailed information about lesson objectives. The current formal requirement for documentation of teachers' work and the common practice of reviewing teachers' work based on subjects listed in the class register (irrespective of its form) explains this disproportion. It should be added that lesson themes are often parallel to titles of textbook chapters. Themes given in the form of a problem or a question occur much less frequently.

## 9.8. How do history teachers evaluate students?

Student assessment is one of the key elements of the teaching process and well prepared measurement tools provide valuable information for teachers, students and their parents. Historians use instruments typical for most school subjects, such as oral answers and written tests of varying complexity. It should be emphasised that in the process of shaping historical skills, it is not the form of assessment tasks testing the level of student progress that is significant, but rather the content and form of these tasks and expectations of them.

Their analysis leads to the conclusion that teaching history is still oriented towards expanding students' base of knowledge with less emphasis on shaping skills such as development of historical thinking. This conclusion confirms earlier findings related to other elements of teaching during observed history lessons. Oral questions usually concern factual knowledge - a student is expected to recall various facts, sometimes also using a map, indicating places related to relevant events or persons. The observations did not reveal questions testing skills such as analysis of historical sources. There were sometimes problem questions requiring a combination of information about several issues discussed earlier. Teachers assessed student statements as a whole - during the observed lessons, there were no separate criteria to assess individual skill components of student response, such as selection of information, finding connections between events, identifying their mutual dependence. This does not mean that teachers do not take them into account - one would rather suspect that they are taken into account naturally, but they are not subject to individual assessment or comment. In practice, what counts is the final effect in the form of student statement, even though information about concrete deficiencies or mistakes (e.g., in terms of causal relations or textual analysis) would be beneficial to students, since it would help them to consciously develop concrete skills.

In school practice, usually two written forms of knowledge assessment dominate: short tests, usually involving content of the previous or several previous lessons and longer tests, requiring knowledge of the larger part of the material including a wider variety of assignments also allowing assessment of causal thinking and some elements of historical source analysis or map reading. Importantly, not all tasks regarded by teachers as testing skills actually test them. This qualification relates mainly to exercises requiring students to provide causes and effects of an event discussed in class. The student role is reduced to recalling information of either category, delivered during lessons.

It should be noted that teachers avoid assessing their students' knowledge by means of longer written assignments. Only a few teachers include open questions in their tests. Student reports confirm the observation that teachers emphasise memorising facts and preparing for tests is usually reduced to time-consuming rote learning of dates, courses of events, information about historical figures and schematic description of the cause and effect of events.

## 9.9. What are successes and challenges for history teachers?

Successes and challenges of history teachers can be analysed in various ways. It seems vital to establish how teachers themselves define the source of their job satisfaction. It is also worth comparing these data with results obtained by Boba and Michlowicz from the Regional Examination Board in Cracow from the study including statements by lower secondary school principals from powiat krośnieński (Krosno county) concerning the success of history teachers (Boba, Michlowicz, 2006). Many problems related to teachers' work were diagnosed during lesson observation as part of the Implementation of the *New History Core Curriculum in Lower Secondary Schools* study. In the next part of this chapter, this particular catalogue of successes and challenges will be supplemented by a discussion of factors helping and interfering with a history teacher's work.

### 9.9.1. How are successes defined?

In everyday practice, teachers' primary source of satisfaction is to interest students in the subject of a lesson. This is expressed in their active participation, attention during class, engagement with assignments prepared by a teacher and other activities or asking content-related questions (*Good Practice*, 2013; *Implementation of the New Core Curriculum*, 2013).

*[I]f a student likes lessons, doesn't attend reluctantly and is not afraid to ask about certain things, if students engage into the discussion, even at their level - this is a success.*

[*Implementation of the New Core Curriculum, teacher interviews*]

According to teachers, student interest is the first step to effective time management during lessons. If students are not bored they do not disturb lessons, their energy is oriented towards learning, that means that the objective has been achieved. Meeting the lesson objectives, such as discussing planned themes and carrying out planned activities, is also considered by teachers as success in daily work.

Lessons after which students stay after the bell and do not rush to leave the classroom or they voluntary declare their willingness for individual search and development of themes which appeared during the lesson, are a source of special satisfaction. These declarations correspond to the results of earlier studies in which respondents emphasised getting students interested in history as one of the most important objectives of teaching history (Kujawska, 1996).

Teachers consistently claimed that also major and minor student successes, revealing development of their knowledge or skills were the source of their satisfaction. This refers to student performance during both regular tests and final exams. For teachers, results of external examinations were the main measure for long-term effectiveness of their methods and good results from individual students or classes as a whole were identified with teacher success (Good Practice, 2013). Interestingly, contrary to the stereotype, not all principals shared this view. They took more complex account of conditions for student results. In their opinion, along with teachers' work, other important factors include student talent and engagement, as well as parental support, especially in terms of building the motivation to learn (Boba, Michlowicz, 2006).

Teachers also find satisfaction in their individual work with students, both those who are especially interested in the subject and those requiring special support. As a result, teachers perceived not only student performance during subject competitions and contests as their success but also lesser achievements of their weaker students, which result from mutual effort on both sides and encourage work with under-achieving students (*Implementation of the New Core Curriculum*, 2013). At the same time, teachers are aware that in both cases, student attitude and predispositions are particularly important, alongside teacher engagement.

*There is a student who was marked unacceptable in terms of his conduct, a student repeating the grade, who was assigned to my class. He used to fail all the time and now he gets good grades in history. He gets good marks in tests, he is interested in history, he volunteers, so I can see - and it makes me happy - that I can get students with aversion for learning to become interested in my lessons.*

[*Implementation of the New Core Curriculum,* teacher interviews]

For some teachers, meetings with former students are a source of considerable satisfaction, especially if they come to meet specific teachers and not just visit school. Teachers particularly enjoy conversation with former students who were troublesome at the time of their education but after graduation were able to indicate what they learnt and how they benefited from learning history (*Implementation of the New Core Curriculum*, 2013).

Recognition by students is a major criterion for personal success. Therefore, of the commendations and prizes teachers receive they first mentioned those awarded by the student community (e.g.

won in polls), but commendations from principals or local authorities were also a source of satisfaction (*Implementation of the New Core Curriculum*, 2013).

### 9.9.2. How are challenges defined?

Problems working with students reported by history teachers can be divided into two groups. The first includes challenges which mirror their successes, first of all, lack of student interest in the subject, leading to problems with discipline and motivation to learn and the poor marks and low level of student skills and knowledge associated. Teachers treat student boredom during lessons expressed in attitudes as their own failure (*Implementation of the New Core Curriculum*, 2013), especially if it lasts for a longer period of time and does not change despite teacher's efforts to activate the class. Permanent lack of student motivation is also perceived by teachers as their failure (*Implementation of the New Core Curriculum*, 2013), especially if it is accompanied by negative behaviour and problems with discipline management in the classroom. Teachers consistently claim that it significantly reduces their chances of teaching a successful lesson.

*Indifference. Indifference. They sit..., and just sit and look at me, chasing rainbows - that's the end of it. If I am not able to make them interested in any part of the lesson, it's a total failure.*

[*Implementation of the New Core Curriculum,* teacher interviews]

Setbacks in working with underachieving students are another source of frustration for teachers (*Implementation of the New Core Curriculum*, 2013). The respondents interpreted the lack of effects, especially the necessity to fail a student during end-of-year assessment as professional and sometimes personal failure. They treated under-development of full student potential - both over- and underachievers - similarly.

*Obviously, if there is a behavioural problem it automatically translates to learning outcomes, of history or any other subject.*

*But if I have to fail them, it is still my failure.*

[*Implementation of the New Core Curriculum,* teacher interviews]

These challenges faced by history teachers - including the behavioural ones - are not very different from the challenges faced by teachers of other subjects, or the school as a whole (*Implementation of the New Core Curriculum*, 2013). Interviews with teachers revealed, however, some difficulties specific to history teaching. They can be divided into four groups.

The first group includes problems related to the assessment of student competencies in view of the new requirements. In simplified form, they can be reduced to the dilemma of whether the skills can be assessed separately from knowledge or whether they have to be combined. This issue became particularly evident in the study conducted in Autumn 2011 - before the first lower secondary school exam in history and knowledge about society. Information and examples of assignments (sample exam sheets) provided by Central Examination Board did not meet all the concerns (*Implementation of the New Core Curriculum*, 2013). This motive reappeared in teacher declarations after the exam sessions, not only in 2012, but also 2013.

The second category of problems reported by the respondents concerned self-evaluation. History teachers are not in the habit of carrying out regular self-evaluation. The main sources of information about their own efficiency are test and exam results (Boba, Michlowicz, 2006). However, they do not provide information as to which method selected by teachers is really effective. It is quite easy to self-evaluate methods designed to improve memorisation of information by students, but assessing the extent to which a single lesson or assignment supported the development of particular

competencies seems relatively difficult. The problems in the area can, therefore, be reduced to the statement that teachers cannot satisfactorily assess their work from the methodological point of view. They lack experience and analytical tools in this area (*Good Practice*, 2013).

The third group includes problems with organising valuable lessons outside school. It refers particularly to so called museum lessons, but also other field activities, such as sightseeing (*Implementation of the New Core Curriculum*, 2013). During interviews, most respondents emphasised both didactic and educational values of such lessons. At the same time, they indicated various difficulties, from logistics (how to include out-of-school activities into the school's schedule, weekly timetable, etc.) to content-related problems. The curricular connection - incorporating the content of museum lessons or other field activities into the teaching process - is a great challenge for teachers. They also claimed that sometimes they did not receive enough support from people working in the target institutions. Out-of-school activities are treated as a form of making history education more attractive and a way to expand student knowledge.

Another group of problems include professional development of teachers themselves, unrelated to issues connected with promotion (which was were not included in the study quoted). Teacher interviews suggest that they did not receive enough valuable content-related support, despite the wide training offer (*Implementation of the New Core Curriculum*, 2013; *Good Practic*e, 2013). Respondents indicated the lack of training seminars which would help them to verify the relevance of various methods in practice and tools used from developing historical skills in the core curriculum. The dominant forms of teacher training are lectures and presentations designed to pass information to participants. Other training organised by publishers is usually in the context of new textbook promotion. Their form is sometimes attractive and includes practical activities, but their obvious shortcoming is reducing the field of interest to one particular book.

### 9.9.3. What problems were observed?

This catalogue of problems based solely on teacher declarations should be supplemented with findings from lesson observation during the *Implementation of the New Core Curriculum* study, in particular, that it revealed several issues not mentioned by teachers themselves.

Some difficulties suggested by teachers, such as lack of sufficient student engagement, were confirmed by lesson observation. However, it should be noted that in some observed cases the lack of skills related to self-assessment resulted in teacher activities which could be rated as ineffective from the start. Moreover, some observations revealed that declarations concerning development of student historical skills were not implemented in practice; teacher activities were directed at transfer and testing particular information rather than skill development.

Development of complex and narrative skills seemed especially rare. Lessons where students' role was limited to careful listening to a teacher's lecture, sometimes illustrated with some source materials are still the most popular example (*Implementation of the New Core Curriculum*, 2013). Sometimes this reduction of source texts to mere illustration of a lecture is explained by the low level of initial student competency at the outset of their lower secondary education. According to teachers, many students still need to develop basic reading comprehension skills. As a result, expectations related to analysis of source texts are lowered and the interpretation difficulties experienced by students (especially older ones) induce teachers to reduce their role in their teaching.

The way teachers develop lesson concept and objectives also does not favour development of student skills - cases where they build the lesson around a problem which would require active engagement of the whole class are very rare. However, common search for solution to a particular problem, discussion and confrontation of arguments can facilitate building student interest in the subject and has educational value: it teaches respect for other people's opinions and discussion culture as it is broadly understood.

So called time management issues require separate discussion. These refer to both individual lesson organisation and planning material for a school year to effectively implement the core curriculum requirements (*Implementation of the New Core Curriculum*, 2013). This research does not allow generalisation in terms of long-term planning; hypotheses should be restricted to those based on teacher what teachers revealed, but without empirical verification. The observations were conducted in autumn, so relatively early, the first months of a new semester, so teachers did not feel, or at least did not express the fear then of not being able to remain on schedule with the core curriculum until the end of the school year. Limiting the cut off date for material to be covered at lower secondary school level to 1918 (which not all teachers saw as a positive change) permitted respondents to reduce the quantity of material and encouraged a change of emphasis in comparison to previous years.

The issue of time to prepare students for the lower secondary school exam in the new form was a source of more uncertainty because teachers were not able to refer to previous experience, but they were nevertheless convinced that part of the lesson should be devoted solely to this purpose. They were afraid that this could force them to accelerate their implementation of the core curriculum.

It should be emphasised that the majority of observed lessons were conducted in an orderly way and teachers completed their plan within the 45 minutes. However, observers noted cases of lesson prolongation and a hurried finish of the lessons during break or sudden acceleration pace (*Implementation of the New Core Curriculum*, 2013). This observed haste had varied explanations, but the intention to keep within the time limit can be interpreted as indicative of an inappropriate lesson plan or appearance of unforeseen, but perhaps foreseeable difficulties (delays resulting from insufficient student activity, etc.).

The final observed difficulty related to the quality of developing historical skills during lessons concerned student assessment (*Implementation of the New Core Curriculum*, 2013). This problem was mentioned by teachers themselves, but they did not elucidate the reasons behind it. A thorough diagnosis of this issue would require separate study. Only certain aspects of the subject were mentioned in the literature, such as inability to make use of open questions (see Jurek, 2006). They are used mainly as a tool for testing knowledge, whereas open questions test a number of important competencies, development of which is an objective of historical education, from chronology skills, to analysis of source materials, synthesis of information and expression of one's own well-argued opinion (see Finkstein, Jurek, Kozioł, 2009).

The abandonment of elicitation and assessment of longer oral statements is also worrying (*Implementation of the New Core Curriculum*, 2013). Another problem is insufficiently thorough analysis of test results. Teacher interviews, confirmed by student group interviews and observations, indicated that retaking a test was unrelated to students' greater awareness of their mistakes. Teachers discussed the content of assignments with students too rarely and excessively briefly or superficially. They did not tell students about correct answers, mistakes they had made or indicate their strong and weak points. As a result, not only did teachers demonstrate a lack of thorough recognition of their students' needs, but also students were denied information necessary to correct their mistakes (*Implementation of the New Core Curriculum*, 2013). Finally, lack of reflection on assessment summary seems even more worrying, since not a single observed lesson included formative assessment (*Implementation of the New Core Curriculum*, 2013), in spite of its long tradition and proved effectiveness (see Czetwertyńska, 2006). Problems with student assessment are not a new phenomenon and have been indicated in other studies (e.g., Wróżyńska, 2000).

### 9.9.4. What helps or interferes with the work of history teachers?

Teachers identified classroom equipment and materials as one of the main factors helping them in their work. Easy access to teaching aids, such as wall maps, historical atlases or collections of source texts enables effective work and fosters high learning achievement. The availability of audio-visual equipment was also indicated as a condition to implement new technologies during history lessons (*Implementation of the New Core Curriculum*, 2013; see Boba, Michlowicz, 2006).

Another important factor for effective teaching is the exchange of experience between teachers. This is achieved through personal exchange of materials (work sheets, lesson plans, ideas for presenting certain issues, etc.) and in more institutional forms, such as workshops, seminars or books (*Implementation of the New Core Curriculum*, 2013). Educational publications presenting examples of practical solutions are a particular inspiration for lesson planning. Teachers also quite often used educational platforms, electronic databases of materials on CDs or materials published by educational publishers.

The interfering factors reported by teachers interviewed included excessive student numbers in the class which does not allow them to use some teaching methods (*Good Practice*, 2013; *Implementation of the New Core Curriculum*, 2013) and limited the possibility of individualising the learning process effectively. According to many teachers development of skills with over-sized groups can be difficult and rather ineffective (see Boba, Michlowicz, 2006), even though, as already mentioned, research on learning does not confirm this opinion.

A separate difficulty reported by teachers as interfering with their effectiveness is work overload, which results in their reluctance to get involved with additional initiatives (*Implementation of the New Core Curriculum*, 2013) and reported lack of time for such activities. The bureaucratisation of school as also claimed. The need to satisfy many formal requirements made planning and organisation of out-of-school lessons particularly difficult. For history teachers, this means it severely limits opportunities to visit museums, memorials, etc. (*Implementation of the New Core Curriculum*, 2013; see Pawlak, Sanojca, 2008).

Teachers also complained about an ineffective system for informing them about changes in curricula and exams (*Implementation of the New Core Curriculum*, 2013). These declarations are from 2011 and were expressed by lower secondary school teachers at a time when they were facing a new challenge - preparing students for a separate lower secondary school exam, but one might suspect that their feelings are not hugely different from those of general upper secondary school teachers in 2013. This well-defined difficulty can also be reduced to a wider and more universal claim - easily accessible and accurate information strengthens teachers' sense of security, facilitates acceptance of the new requirements and as a result, fosters an improvement in the quality of their work (*Implementation of the New Core Curriculum*, 2013).

## 9.10. The profile of a history teacher - proposed model

Teaching history, together with the universal teaching skills and psychological competency needed by every teacher, requires additional competencies for historians' work. The most important are those related to work with source materials. This refers to both awareness of the variety of sources, often typical only to some historical periods, and the ability to interpret them. The postulated features of the history teacher also belonging to their methodological competencies are: maintaining an interest in history and following subject literature. A desired example of such practice is the introduction of newly acquired source material to work with students. A teacher who feels competent in terms of selecting and analysing source materials is not afraid to engage in a living dialogue with students about credibility and usefulness of these sources or limits of their analysis. The appropriate competence in working with source material allows spontaneous, creative but methodologically correct use of these materials for teaching.

*Sometimes a good book, film, documentary or visit to the museum is enough to stimulate interest in new material introduced during a lesson or to reveal a new perspective on the discussed subject.*

[the *Good Practice study*, s. 26]

To ensure teaching quality, teacher's high methodological competence should be accompanied by teaching competence. The teacher should be aware of many different forms of teaching and methods and be able to apply these methods efficiently to achieve the presumed goals. Theoretical knowledge should be accompanied by its practical application. One of the expected qualities of a good teacher is awareness of the varied intellectual and emotional needs of different student groups. The need for such awareness is based on the idea that modern school has to suit the needs, possibilities and intentions of students. Only then can the school fulfil its educational purpose. Careful observation of their students and the spectrum of their interests allows teachers to adjust the methods applied in response to changes in the world beyond the school. Reference to places and events close to student experience (such as local history), as well as reaching for the new technologies should become regular good practice for teaching. Exploring the possibilities of the internet (in terms of both content and forms of communication), the teacher can make learning a real chance to understand the world and meet its challenges, rather than a being senselessly disconnected from reality. This approach translates into specific actions which depart from traditional knowledge transfer in favour of stimulating critical and independent thinking.

*I believe that a good teacher has to be open to testing new ideas for lessons, also those of which they are not the author. It does require courage, acceptance for potential failure or resistance from students. But without testing some solutions, we would not be able to successfully enrich lessons with new methods and practices. We have to assume that some ideas will fail and keep looking.*

[the *Good Practice study, p. 26*]

Every preparation for a lesson should always be preceded by reflection on its underlying purpose, so that knowledge and source materials might place the student in the role of a professional historian dealing with a research problem. Lessons (or lesson cycles) focusing on one particular research question formulated in the theme of the lesson can serve as an example to put students in the role of researchers. It is important that students have a chance to formulate conclusions on their own and propose their own hypotheses during lessons. The ideal history teacher listens to students, does not impose their own views, encourages students' own inquiries and inspires their curiosity. The teacher's role is to prepare students not only to formulate their own balanced opinions but also well-argued ones. A good teacher requires their students to produce structured and coherent statements.

Written assignments occupy a special place in the history teacher's methodology. Their usefulness is not limited to testing students' knowledge. Students also have a chance to apply almost all the skills they learn as intended from historical education in their written work. This creates the opportunity for linguistically correct and well-argued formulation of their opinions and they are a particularly useful tool for learning how to select and synthesise information. In a written statement students can fully demonstrate their ability to think in terms of cause and effect. They can also demonstrate their reasoning and methods of source analysis. Discussing written work with students is an important part of the assignments. A good teacher uses it as a unique opportunity to develop all the skills mentioned above and students receive valuable information concerning their weak and strong points.

A teacher's openness to external institutions supporting history education (such as museums) is an important additional aspect of an ideal teacher. An ideal teacher is aware of how lessons in such places benefit students. Therefore, the teacher does not treat them as time lost but tries to use the possibilities they offer to the best advantage of their students' knowledge and skills. Many

examples of good lessons with students submitted for the Lesson of Good History competition described working with students outside a the classroom or school.
Expectations reduced solely to methodological and didactic competencies do not exhaust the image of ideal history teacher. Another key element is social skills, including the most important communication skills, both in terms of teacher-student and teacher-parent relationships, as well as communication with other teachers. The ideal teacher clearly communicates to students not only their requirements and lesson objectives, but promises feedback about progress. It is especially important that the feedback is communicated in the atmosphere of mutual respect and trust (Boba, Michlowicz, 2006).
The desired quality of an ideal teacher confirmed by research is their openness to constant learning and new challenges. This openness is expressed not only in their willingness to participate in generally available training, but most of all in the constant search for new methodological solutions and development of the current ones. This approach to lessons allows maintenance of high quality of teaching by adjusting them to cultural changes taking place in the world. Ideal teachers, as described here, should be willing to share their experience with their professional environment. The qualities of an ideal teacher described here for their most part stem from their openness to the needs of their daily professional environment. This approach can be supported by multiple factors, among which two stand out in the research material gathered. A significant feature of ideal teachers supporting their openness appears as active contact with subjects other than history. All the laureates of the Lesson of Good History competition teach not only history, but also at least one other subject (not only knowledge about society but perhaps a foreign language or the Polish language). Such experience enriches their teaching methods with ideas from other disciplines, protecting them from being closed within the limits of history as a school subject. Moreover, most of the prize-winning teachers do not only work in one school. Many also teach in other schools, not only lower secondary, but also primary or general upper secondary schools. This permits them to have a better orientation about working with students at different levels of education. They are more aware of what can be expected from a student starting a given level and the level they are intending to reach.

*I value different forms of exchange of thoughts and experience, when I can discuss and consult my ideas with my colleagues' ideas on the wider stage. It is highly valuable and sometimes enables effective modification of one's own methods.*

[the *Good Practice study*]

As was mentioned at the beginning of the chapter, these findings constitute only a first step in studying history teachers' methods and work organisation and, therefore, this description is far from comprehensive. We tried to take the fullest possible advantage of interviews with teachers, students and lesson observations gathered during out research. These qualitative studies allowed in-depth analysis and contributed significantly to identifying areas needing further attention. However, they are only a starting point and direction for further research now in progress. Only after these studies are completed will we be able to create a fuller picture of the history teacher.

# 10. Science teachers

## 10.1. Introduction

Authors:
*Małgorzata Musialik*
*Barbara Ostrowska*
*Urszula Poziomek*

*Who should the teacher be? The teacher should fire students with enthusiasm, willingness to explore. (...) (...) He or she should be a guide pointing towards and developing some interest. (...) (...) All they need is pointing the direction and they can fly..*

[Science teacher's statement]

The image presented of a Polish science teacher is based on both qualitative and quantitative findings from research and analyses conducted in various national and international research centres. The participants in these studies were teachers and students of science subjects: from science in primary schools to biology, chemistry, physics and geography in lower and upper secondary schools.
The picture of science teachers is not uniform since it represents a highly varied group covering teachers of five science subject fields[66]. The report adopted an informal name for this group - science teachers - even though it is imprecise. Not every physicist or geographer deals with nature and there are also science teachers who are not biologists or chemists. It was, however, assumed that a scientists is first of all someone who studies nature and this should point the direction which one should follow working in this profession.
It was also assumed, in accordance with established practice, that all science subjects include an experimental aspect and are, therefore, connected by scientific method based on experiments, observations and measurements. It should, however, be remembered that some areas of natural science teaching, biology, chemistry, physics or geography differ from each other. Field exercises and measurements, which are important elements of natural science, biology and geography teaching, are one source of these differences. Experiments and observations are the foundation for natural science, biology, chemistry and physics lessons.
The main source of data used in this part of the Report are studies conducted by the Science Section of IBE, as well as studies conducted by the Centre for Education Development (ORE), the National Foundation for Computer Literacy in collaboration with Adam Mickiewicz University in Poznań within the framework of Śniadecki College, the Faculty of Physics (Jagiellonian University, Cracow, within the framework of SECURE project) and the Institute of Philosophy and Sociology, Polish Academy of Science, Warsaw. The authors are aware that this selection of studies is incomplete, but it would be impossible to refer to all research on Polish science teachers in this short presentation. This chapter should, therefore, be treated as an invitation to a discussion on work styles, the condition and future of science teachers. This invitation is directed especially towards science teachers and the academic community - educationalists in biology, chemistry, physics and geography. A detailed description of the studies quoted, including their objectives, sample, scope and methodology can be found in the Annex: *Information on the studies*.

[66] In fact, there are six science subjects in general education, because the IV education level includes an additional subject - natural science. It had not been included in the report because it can be taught by biology, chemistry, physics and geography teachers

## 10.2. How do science teachers work?

*Everything beyond dictating and writing down in the notebook is good.*

[teacher statement in the FGI67 study[67]]

Science subjects are empirical and experimental. One cannot teach about nature without observing it or the experience. Therefore, the key objective of teaching these subjects is to develop the skill of using this method, the ability to recognise problems which can be solved by its use. The ability to apply scientific method is derivative of the key competence in science, i.e. scientific reasoning. The way to develop these two basic skills - scientific reasoning and application of scientific method - is through practical exercises: performing experiments, observations and measurements. Application of scientific method cannot only be learnt theoretically.

Teaching and learning science is not only development of subject skills. It is equally important to develop social skills, such as communication, teamwork or presentation of work results or personal achievements. Such "soft" skills will be very useful in students' future life, regardless the career path they choose.

While teaching science, it should not be forgotten that arousing students' interest in science, their engagement in various aspects of nature and sensitivity to the surrounding natural environment may in the future determine their choice of a profession connected with science and specialising in a chosen field.

The extent, to which science teachers are aware of these teaching objectives is an interesting question. Do they use teaching aids and methods to foster the development of a scientific attitude? Do science lessons develop social skills and, if so, to what extent?

### 10.2.1. Teaching objectives

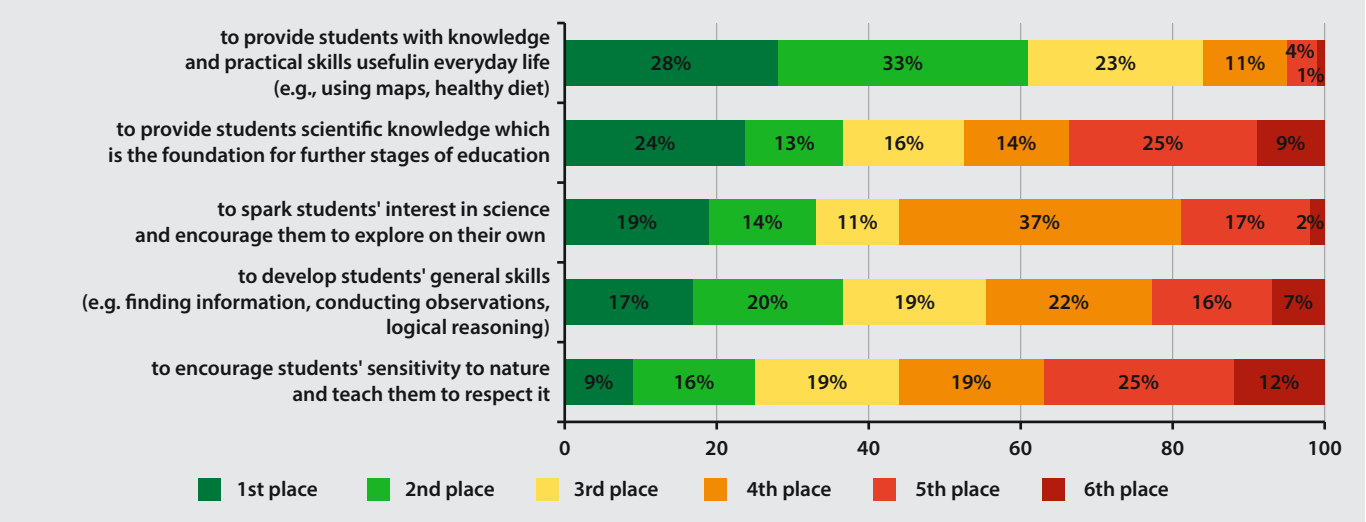
Primary school science teachers who participated in the study investigating the need for support in conducting lessons using scientific method (DPNP ) declared that for them the most important skills to develop in teaching science were the subject and general practical skills useful also in daily life (graph 10.1). According to this group of teachers, transfer of knowledge which would be a necessary foundation for learning at higher levels of education was equally important. If we assume that general skills include using scientific method in daily life, the declared picture of science education seems optimistic.

Arousing student interest in nature and encouraging their individual search for relevant knowledge is also important to teachers. However, according to them, interest in nature is not necessarily combined with students' sensitivity and respect for it - teachers interviewed recognised this objective as less important.

Study results showed that science teachers tended to value objectives the inculcation of which is assessed or for which they are made accountable by the school principal, the school governing body or parents. On the one hand it is good, because these objectives coincide with the current core curriculum requirements. It is regrettable, however, that students' sensitivity to the surrounding environment and respect for it are insufficiently appreciated and not widely developed in young people.

[67] A brief description of the *Core Curriculum and Subject Teaching Methods Development in the Opinions of Teachers, Head Teachers and Students* study (FGI) can be found in the Annex: Information on the studies. Abbreviations are given in brackets within the text.

**Graph 10.1. The ranking of objectives for primary school biology teachers attempt to achieve in their work with students, from the most (1) to the least important one (6) (DPNP, 2013).**




*Source: DPNP, PPP IBE.*

Objectives of science teaching described as important during interviews with active, engaged lower secondary school teachers of biology, chemistry, physics and geography[68] as part of the *Core Curriculum and Subject Teaching Methods Development in the Opinions of Teachers, Head Teachers and Students study* (FGI) provide a valuable supplement (IBE, 2013a). Lower secondary school teachers pointed to their important role played in science teaching towards shaping scientific attitude, a holistic and interdisciplinary view of nature and supporting gifted and interested students in their development. They also described ways to reach these objectives.

According to active teachers, scientific attitude should be shaped by teaching students the stages of planning research, conducting experiments and observations (e.g., under the microscope) and the proper documentation of these activities, as well as by student participation in field work and educational trips.

Developing a holistic attitude to nature was fostered by applying the project method, especially using cross-curricular projects implemented by a student team under the supervision of two or three science teachers of different subjects. Teachers also emphasised that realisation of this objective was facilitated by sensitivity to students' own ideas, since they often introduced unconventional propositions the realisation of which was only possible by an interdisciplinary approach (such as presentation of the most significant inventions in science or Nobel laureates). It should be added that, according to the Regulation of the Minister of National Education (MEN, 2010a), each lower secondary school student has to complete at least one project during this education cycle in order to graduate. Perhaps this requirement would be worth spreading on other levels of education, since it has a valuable effect in the form of seeking connections between different science subjects and fostering teachers' cooperation?

According to teachers interviewed, supporting students who are gifted and interested in science subjects should take the form of encouraging them to seek information and broaden their knowledge by watching documentaries, reading scientific journals, conducting field research or experiments in school or university laboratories. It is worth adding, that in student opinion, science teachers accomplish this objective in their daily work. Results of interviews with lower secondary school graduates - first grade students of upper secondary schools - conducted as part of the *Laboratory*

[68] The level of activeness and engagement of these teachers was demonstrated by conducting interesting extra-curricular classes and preparing students for subject competitions.

*of Thinking* study (LM)[69] diagnosing the state of teaching science in Poland showed that teachers were the main promoters of using reliable sources of information other than textbooks and workbooks. Students asked about who or what contributed to their reading of books on science, scientific papers, using the internet to search for reliable scientific information and participating in scientific events such as science fairs, placed teachers second to their own interests (IBE, 2012a, unpublished).

### 10.2.2. Lesson preparation

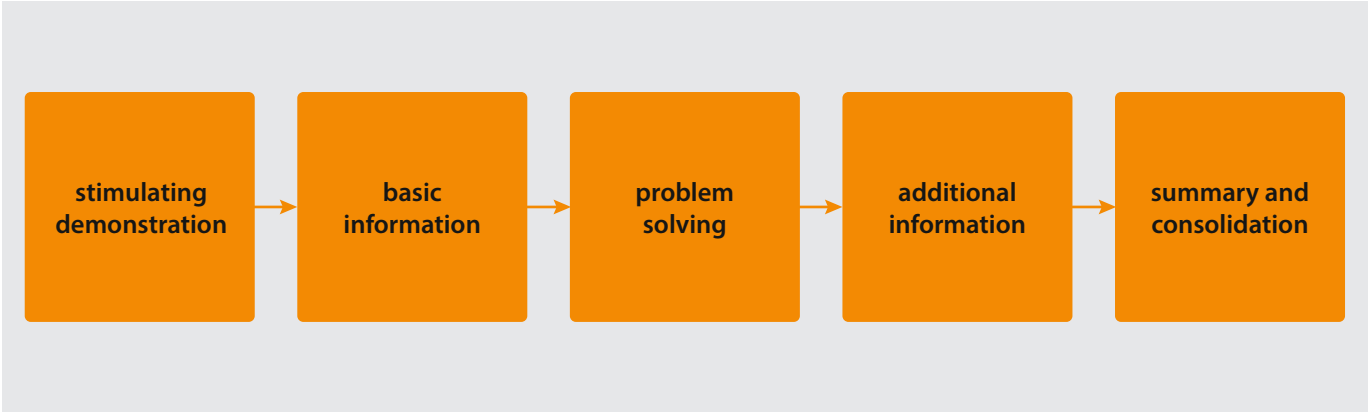
While preparing lessons, a science teacher should formulate objectives and topic of a lesson according to the core curriculum and select relevant content. Moreover, they should select methods adjusted to the specific nature of a particular class, which would enable them to achieve intended lesson objectives, plan the use of relevant teaching aids and ways of consolidating knowledge or testing the effects of particular activities. Educational publishers often do a lot of work related to lesson planning for teachers. Sources such as textbooks and workbooks usually impose a certain order to a lesson. While in conformity with the teaching programme, it can limit teachers' creative freedom, even though only to the extend permitted by the teacher. In lesson planning, most teachers use ready-made examples suggested by the textbook together with the accompanying workbooks. Research findings demonstrate that for most teachers the textbook is the main teaching aid used during lessons (Grajkowski, 2014; SECURE, 2013). We can, therefore, assume that for the majority of teachers, the textbook's order of content and exercises for students provides the basis for planning and conducting lessons. Accepting such a mode of work, teachers assume that the textbook approved by the Ministry of National Education guarantees implementation of all objectives and content of the core curriculum. It certainly does, but most textbooks available are overloaded with content. If teachers used them uncritically, this would cause problems with introducing all content of the core curriculum in the number of hours planned for a given educational cycle with neglect of objectives, such as shaping important student skills. Lesson planning by creative teachers, who prepare lessons according to their own ideas, looks different. An active and engaged group of science teachers participating in the FGI study exhibited such a creative attitude to planning a science lesson. In group interviews teachers described elements which contributed to the course of a well organised lesson. Interestingly, they used their own terms not entirely consistent with the language of formal teaching theory. However, they were still correct in their description of a lesson structure.

In the opinion of teachers in the study, a well-planned lesson should start from a stimulating demonstration to students. Such a demonstration could be a short film or presentation, interesting pictures or physical object. The demonstration should be linked with formulating a research question. A small quantity of basic information should assist in the building of the basic subject knowledge constituting the topic for the lesson. Respondents emphasised that these basic information should be presented synthetically, as a diagram or graph, using computer and multimedia projector, foliograms or information boards, to facilitate the course of this part of the lesson. An equally effective method is the earlier preparation of chosen students who can demonstrate basic information on the topic to the rest of the class. The next stage of the lesson should be student space activity based on finding answers to relevant research questions. Teachers proposed using proposed using methods like discussion or brainstorming. The main goal of this stage of the lesson is stimulation of thought. At this stage it is possible to achieve the maximum effectiveness of teaching by group work. Teachers rarely take an individual approach because then the weaker students can't manage the tasks or are reluctant to complete them. It is important to encourage students to try their best by introducing elements of competition or assessment. After students

[69] The full name of the study: *Laboratory of Thinking. Diagnosis of Science Education in Poland* (LM). A description of the study can be found in the Annex: Information on the studies.

have attempted the tasks the teacher should offer the next part of the lesson covering the topic in greater detail. In this part of the lesson it is important to refer to what students said during the earlier part. The lesson summary should be organised – best together with a part played by students and the teacher - from the material covered in the lesson. It should be pointed out what was the most important and what requires more thorough learning later. And important element is also concerns opinion about exercises or tests - examples done in exercise books. Teachers recognised that the best methodological solution in this part of the lesson are workshops and multimedia presentations. According to teachers, consolidating or testing exercises, for example in a workbook, were an important part of the lesson summary. Teachers surveyed underlined the significance of the practical part of the lesson as either experiment, observation or creation of a model for example to illustrate chemical bonding.

**Figure 10.1. The structure of a science lesson according to active teachers (based on unpublished FGI Report 2011).**




It should be added that the sequence of a science lesson as outlined by teachers, whilst described without specialised terminology, was consistent with assumptions of science teaching theorists, including the use of various methods adjusted to the topic and occurrence of such elements as presenting students with motivating tasks, introducing facts, developing skills and habits, consolidation and monitoring of knowledge and assessment of outcomes (Kupisiewicz, 1973; Okoń, 1987 after Stawiński, 2006).

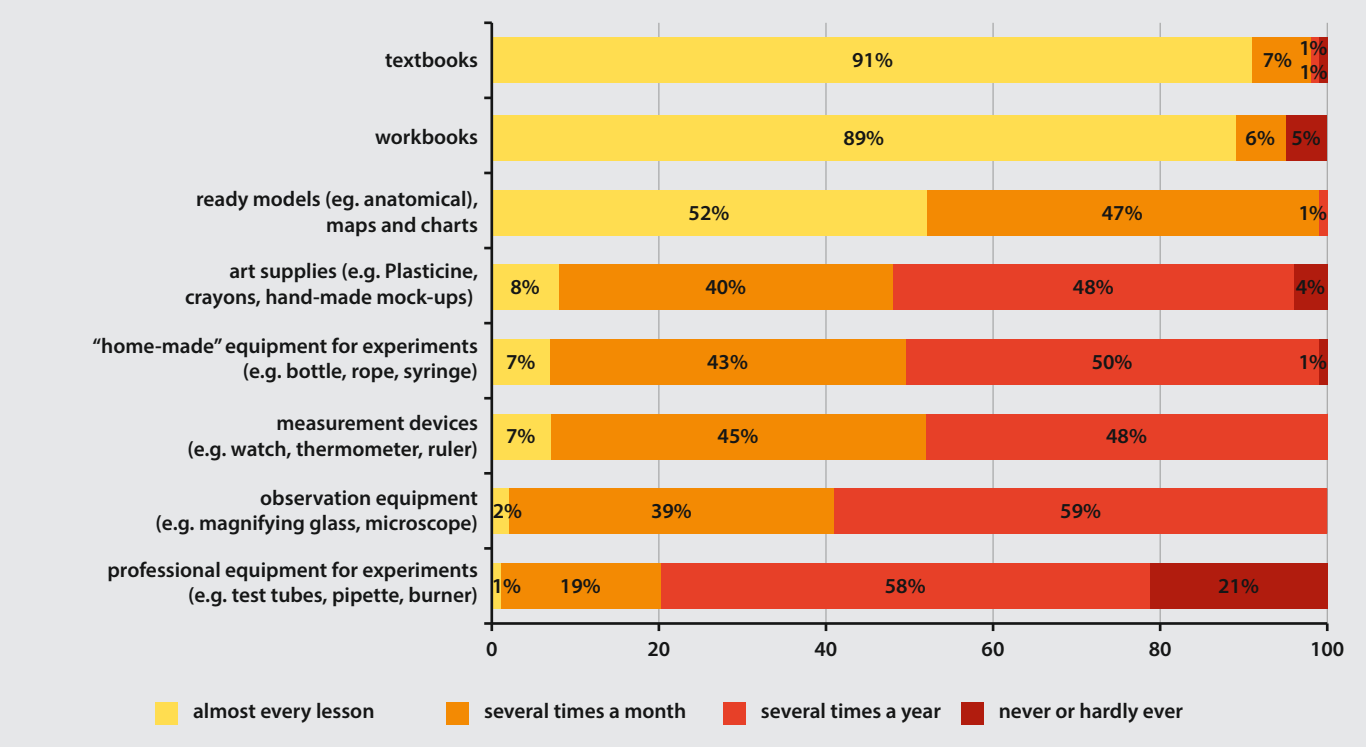
### 10.2.3. Teaching aids

As a rule, a teaching aid should contribute to accomplishing objectives of a lesson conducted with selected methods and forms of work. Its efficiency increases when it is adjusted to the specific nature of the subject, teaching content and methods (Stawiński, 2006), as well as to student needs, their learning styles and class profile.

Science teacher should mainly use teaching aids adjusted to scientific method, laboratory or problem-solving. It is a consequence of the empirical nature of these subjects, deriving from natural sciences, developed and expanded by scientific research in institutions of higher education. It can, therefore, be assumed, that the teaching aids most frequently used by science teachers would include laboratory or observation equipment, such as test tubes, beakers, microscopes, binoculars. The accomplishment of teaching objectives can be supported by properly used ICT, such as multimedia (presentations, films), programmes animating natural objects, simulating experiments, modelling processes or phenomena and suitable computer hardware which would enable their use. Specialised software can also perform an important function of monitoring and documenting the course of experiments or measurements. However, the results of studies presented here show a different reality. Textbooks and workbooks are the most frequently used teaching aids during science

lessons. These preferences are clearly present in declarations of primary school science teachers nationwide (DPNP) and in opinions of lower secondary school students in małopolskie province and Cracow participating in the SECURE project[70].

**Graph 10.2. The frequency* of using various teaching aids by science teachers in grades 4-6 of primary schools (DPNP, 2013).**




** The frequency relates to the number of classes delivered by teachers.*

*Source: DPNP, PPP IBE.*

It may suggest that the majority of science teachers in primary schools use verbal methods including working with textbook and exercises. This method has its advantages - it develops reading comprehension and involves various forms of information communication (text, diagram, image, graph, etc.) or creation (such as completing a task in a workbook). It cannot, however, replace the scientific method fundamental for teaching and learning science subjects.

Opinions of lower secondary school students from Małopolska and Cracow in SECURE confirmed that the main teaching aid used by science teachers was a textbooks - over half the students used them during all biology, geography and chemistry lessons (60%, 60% and 58%, respectively), and a slightly lower percentage during physics lessons (42%).

The second most popular teaching aid was, according to lower secondary school students, a workbook. Nearly half of them used workbooks during all chemistry and geography lessons, 45% during all biology lessons.

Didactic displays, maps and models were further down the list, according to declarations of primary school teachers (DPNP). Frequent use of such aids indicates teachers' preference for lecture-based methods - lecture or talk illustrated with such substitutes. The use of lecture-based methods makes little contribution to developing competencies essential in modern times - creative problem solving or communication. Additionally, development of teamwork skills becomes impossible. The majority of respondents in the DPNP study used equipment for laboratory tests and observations several

[70] The full name of the study is: *The Study of Mathematics, Science and Technical Curricula in Eurpopean Countries within the Framework of the European SECURE Project*. Its description can be found in the Annex: Information on the studies.

times a year, but more than 20 % never used it. Such responses may suggest that science teachers just as rarely apply the research methods which coverings experiments, observations or student-made measurements.

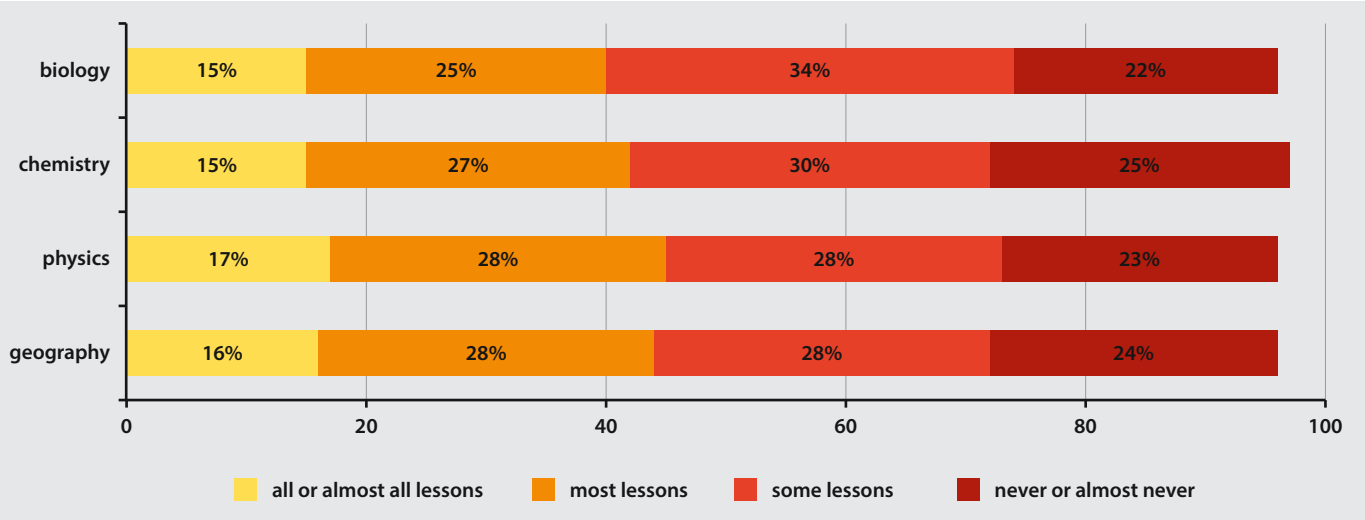
The subject of teaching aids cannot omit the issue of using ICT during lessons. The core curriculum for science subjects includes regulations emphasising the role of multimedia presentations during lessons (such as demonstrations of chemical experiments), as well as acquiring information using ICT. It should be stressed that ICT is only a tool for developing subject skills and social competencies. Technology cannot replace shaping student skills, developing structures of thought, intellectual and communicative habits by teachers. If ICT is used too soon or without relevant reflection, it may create a barrier for intellectual and emotional development of students (Róziewicz, 2011). It is relevant for school education as a whole, including science education. On the other hand, ICT can become a wonderful tool for modelling and animating natural processes and phenomena enabling precise monitoring of observations and experiments (Meritum, 2007), as well as support classroom communication. The role of technology in the learning process depends on the teacher.

Teacher declarations suggest their increasing interest in using ICT during lessons. This trend was confirmed in the *Laboratory of Thinking* (LM) results.

Films and multimedia presentations were used during all, almost all or most lessons by approximately 40% of teachers interviewed in 2012. Comparison of these data with 2011 results demonstrate increased interest in using these teaching aid during science lessons.

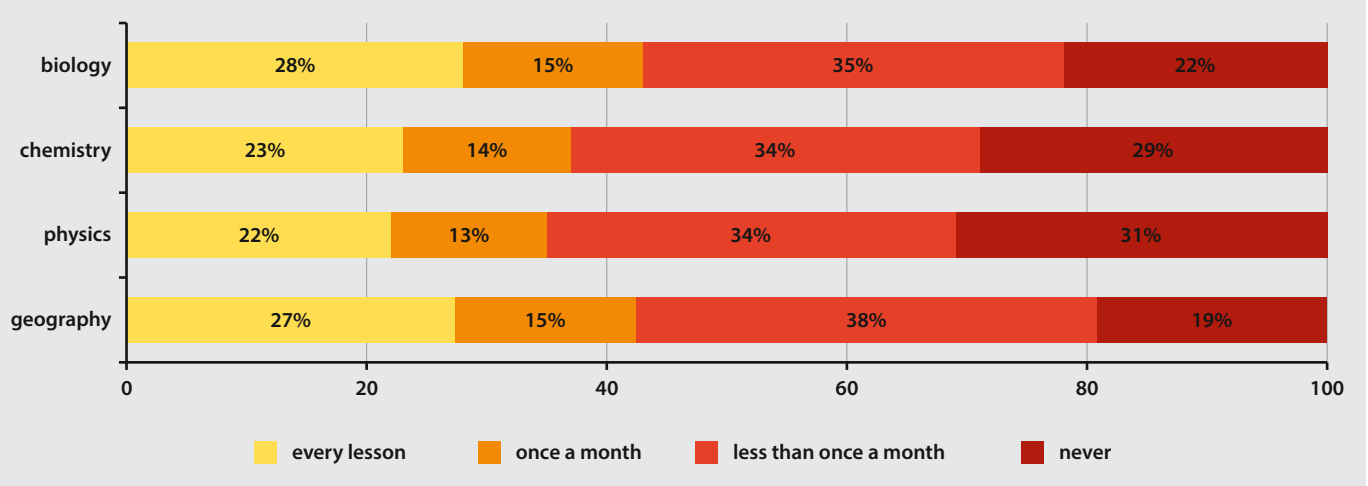
Declarations of science teachers in the diagnosis of core curriculum implementation in first grades of lower secondary schools conducted by the Centre of Education Development (ORE, 2011a) also confirmed the use of ICT during lessons, particularly biology and geofraphy.

**Graph 10.3. The frequency of using videos and multimedia presentations by lower secondary school teachers as declared by students in the second round of the Laboratory of Thinking survey (LM, 2012, unpublished report).**




*Source: LM, PPPIBE.*

**Graph 10.4. Student participation in lower secondary school first grade science lessons involving ICT since the beginning of the school year 2010/2011 (ORE, 2011a).**



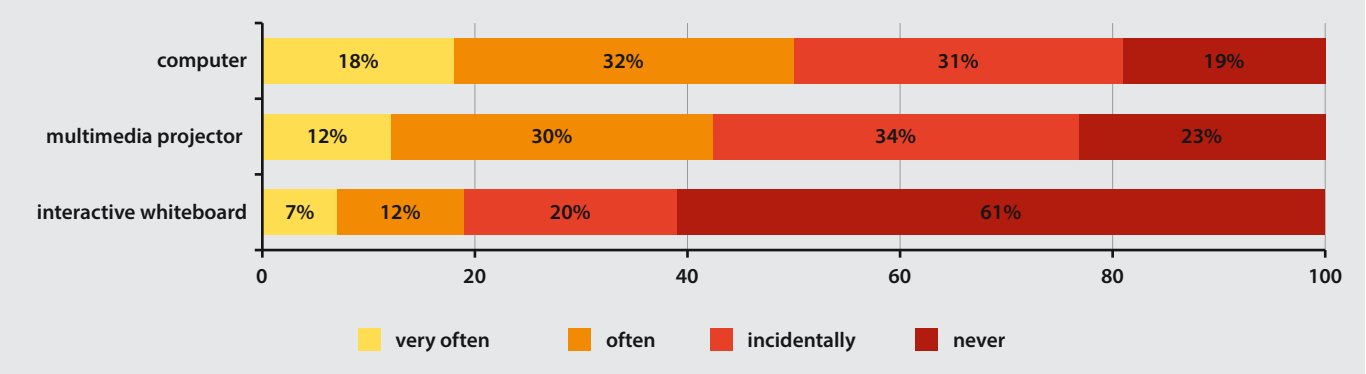

*Source: IBE calculation from the ORE study.*

Increased frequency of using multimedia such as educational films and presentation by teachers is certainly a positive consequence of the curriculum reform, but their application reduced to transferring knowledge assisted by the teacher-centred method may give a reason for concern. In view of potential impact of ICT on the teaching process, the way teachers use such means is worth further reflection. If information is too often presented through multimedia, even in the most attractive form, would impede the development of working with scientific method or teamwork. It can effectively discourage students from learning. Often multimedia replace students' own experiments, observations and measurements. Educational publishers prepared a full set of short educational films and animations presenting student activities recommended by the core curriculum. A chemistry teacher contending the lack of equipment or reagents will use such teaching substitutes and students, instead of familiarising themselves with using laboratory equipment, will watch a film. It is difficult to assess such activity. They enable implementation of the core curriculum, even if the in the imperfect form, but they also impede the real scientific activity of students.

Not every presentation is tantamount to using a lecture-based method. A presentation may be used as an inspiration for solving a scientific problem, for example, during teamwork. The same applies to educational films. A teacher can conduct a lesson by showing a 40-minute film, as well as by by showing a 5-minute fragment based on which he will develop a lesson devoted to, for example, solving an important ethical problem in science or a particular research problem. Unfortunately, the detailed data concerning the uses of multimedia during science lessons are not available. The results of the national study on the effectiveness of science and mathematics teachers (KŚ, 2011)[71] carried out as part of the "*Śniadecki College*: innovative curriculum for teaching science" project involving teachers of first grades in general upper secondary schools (graph 10.5) demonstrated that the increased use of multimedia by teachers is followed by more frequent use of equipment, such as computers, multimedia projectors and whiteboards. Similarly to multimedia, there is no information on what use teachers make of this equipment. We can only assume that it is available mainly (if not only) for teachers and favours the use of lecture-based methods.

[71] The description of the study can be found in the Annex: Information on the studies.

**Graph 10.5. Teacher declarations about the use of electronic equipment during lessons by science and mathematics teachers in first grades of general upper secondary schools (KŚ, 2011).**




*Source: IBE calculation from KŚ.*

Restricted access to electronic equipment may also create a barrier in shaping student skills of finding and processing information from different sources using ICT and project-based methods. Giving students homework requiring the use of the internet, using computers in the school computer lab or library and working with students on project during extra-curricular activities may provide some solutions.

Regarding the internet, the KŚ study showed that almost 50% of respondents had access to the internet. Fewer teachers declared the possibility to make it accessible for students - 32%. Unfortunately there are no available data on the possibility of using personal laptops or smartphones with internet access during lessons by students. Moreover, on some schools the use of cell phones by students is forbidden and may lead to administrative penalty defined in the school's Statute. After all, a smartphone provides an access point to the internet, but thanks to GPS, gyroscope, accelerometer, camera (microscopic photographs) and other free applications for measurements it can also become a portable laboratory It should be emphasised that this is only a tool and adequate understanding its purpose is important for its deliberate use.

Again, it is fair to conclude that teachers benefit from IT equipment, multimedia and the Internet used for demonstrations during many (but not all) science lessons in Polish schools, but students are only passive recipients of information conveyed by image and sound.

Another important role of the internet (apart from its function as a teaching aid) is social communication. Students skilfully use social networks, but mainly for private communication. In the KŚ study, communicating with students was ranked at the bottom of activities for which teachers use the internet. Nearly 60% of general upper secondary school teachers never use internet communication in relations with students or use it only occasionally. Hopefully, this will change. Pressured by parents and school governing authorities, as well as by many teachers' activities, many schools shift to documenting their teaching and upbringing activities in the form of an electronic register. The system solutions applied in these registers foster or even impose electronic form of communication between students, parents and teachers. However, face-to-face relations between teachers and parents remain very important.

### 10.2.4. Outdoor activities

Science education at every level of education should include various teaching aids, not only maps, pictures, photographs, films or textbooks, but primarily in the form of live or dissected organisms and inanimate objects of nature. This is particularly relevant to natural science at the second level of education, biology and geography. Live specimens can be studied in their natural (forest, meadow) or artificial (husbandry, zoo, botanical garden) environments. The objects of inanimate nature can be encountered only during lessons outside of school.

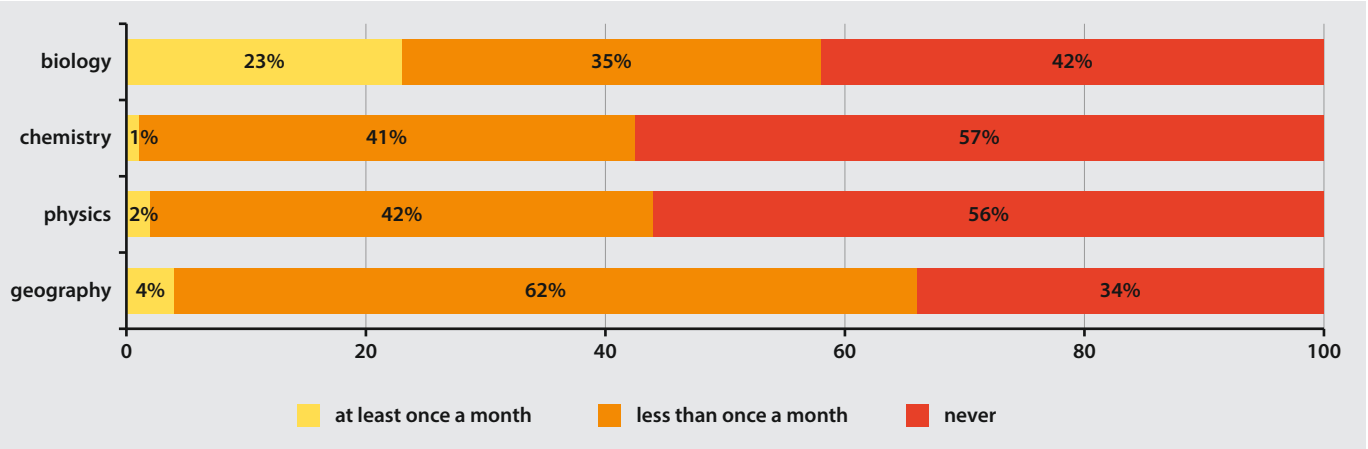
The core curriculum recommends field activities allowing students to learn in natural environments such as parks, zoos, botanic gardens or even farms. It is particularly important for learning geography. In this case, "field activities should be a compulsory, permanent and systematically undertaken form of acquiring geographical knowledge and shaping skills during implementation of requirements related to skills of reading, interpretation and use of maps and plans, recognising the lie of the land (...), types of natural resources, land use structure, changes in Polish services, agriculture and industry, environmental issues"[72]. Knowing your own region is an indispensable element of shaping pro-environmental awareness and attitudes, as well as understanding of contemporary environmental and economic problems. Therefore, science teacher - of biology or geography - conducting some lessons outside school is necessary. It can take the form of educational visits to institutions of non-formal science education - research institutes, zoos, botanic gardens or science centres. Such field trips can be undertaken also by physics and chemistry teachers, enabling students to participate in, for example, professional lab classes. Field activities can take the form of exercises completed under the teacher's supervision around school, in the nearby park or farm. Such activities are recommended by the core curriculum for natural science, biology and geography, but there are no such recommendations for physics or chemistry, so teachers of these subjects rarely undertake them.

Despite clearly defined recommendations in the core curriculum, science teachers conduct an insufficient number of field activities.

Lower secondary school students participating in the SECURE study were asked about lesson outside school or in the form of field trips. Approximately 85% strongly disagreed with statements that they leave school or go for an excursion during science classes (biology, chemistry, physics and geography) . In this case there were not significant differences between results for particular subjects. Most lessons are delivered in subject classrooms or classrooms assigned to a given lesson.

The results of monitoring the core curriculum implementation conducted by the Centre for Education Development[73] in 2012 confirm that science teachers rarely undertake field activities.

**Graph 10.6. Teacher declarations concerning participation in educational field trips during biology, chemistry, physics and geography lessons from the beginning of the school year 2011/2012 in the first grades of lower secondary schools (ORE 2012a).**




*Source: IBE calculation from the ORE study.*

[72] Podstawa programowa z komentarzami, T.5. Edukacja przyrodnicza w szkole podstawowej, gimnazjum i liceum; przyroda, geografia, biologia, chemia, fizyka, MEN, 2009.

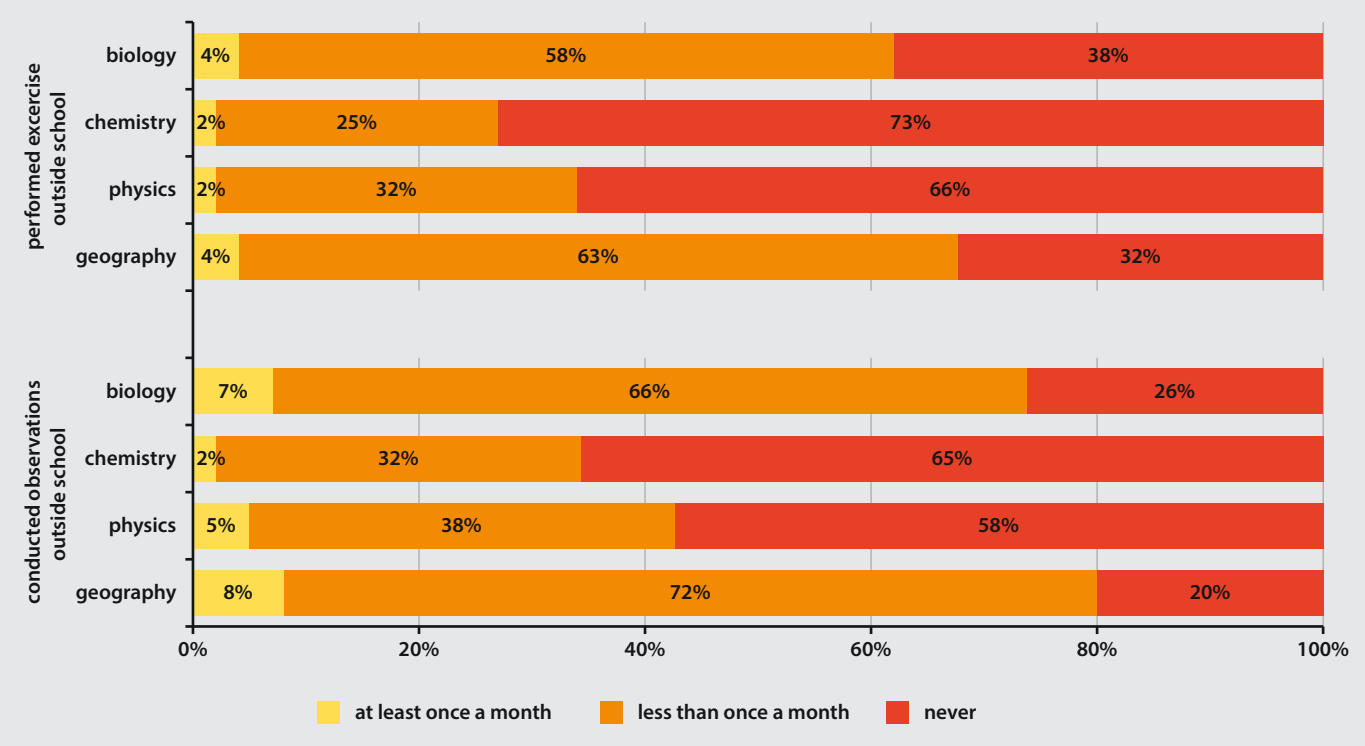
[73] The full name of the study: *Monitoring of Implementation of the Pre-school and General Education Core Curriculum in the School Year 2011/2012, Centre for Education Development* (ORE 2012). More information about the study can be found in the Annex: Information on the studies.

Teachers of all four subjects were reluctant to conduct lessons under field conditions, even though biology teachers stood out to some extent - over 20% of them declared conducting such lessons at least once a month.

There are several possible reasons for this. Taking students out of school to visit a scientific centre or professional laboratory disturbs work for other subjects, which in view of a precise limit of hours for each subject may become an organisational problem. Obviously, such a problem could by solved by planning such field activities before the school year starts. A principal can accept such teacher proposals by including them into the school schedule in the form of blocked hours for one subject or varied lesson schedule for a particular period. It is a difficult task for a principal, because despite the regulations on the educational law[74] schedules provided by school governing authorities do not anticipate such modifications. A principal can still make such effort, but it requires preparing two schedules, one for school and the other for administration.

Another reason often mentioned by teachers may be connected with lack of financial resources to cover field trips. Unfortunately, often system barriers become a justification for passive attitude of teachers and principals. If students are unable to contribute financially to such lessons, teachers can still look for cost-free activities, for example funded by a European project, or ask governing authorities for funding. Biology and geography lesson are even less frequently conducted in the form of field exercises and observations.

**Graph 10.7. Teacher declarations concerning conducting science lessons in the field since the beginning of the school year 2011/2012 in the first grade of lower secondary schools (ORE 2012a).**




*Source: Opracowanie własne na podstawie danych z badania ORE.*

Similarly to the situation described above, the reasons would include difficulties related to going out of school, disturbing lesson plan or need for additional supervision assuring student safety. It seems, however, that the most common cause is the need for a perfect preparation of such classes by a teacher. For example, if teachers want to conduct field observations or exercises, they should

[74] Regulation of the Minister of National Education of 7 February 2012 on educational framework programmes in public schools (Journal of Laws from 2012, item 204) (MEN, 2012c).

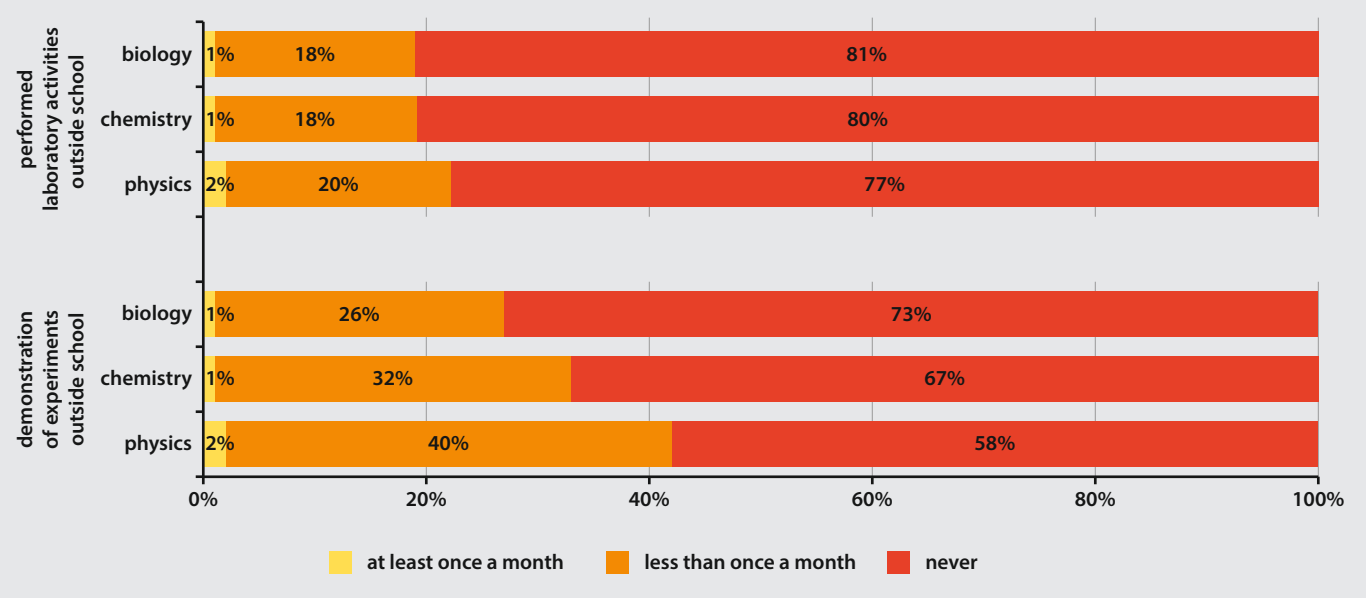
familiarise themselves with the place in advance and identify natural objects to be observed by students. They should also prepare the relevant number of worksheets, guidebooks and maps, since students in the field usually work individually or in teams, so they need to have a set of necessary material to accomplish their tasks. Preparation of such lessons requires a lot of teachers' efforts, even if they use ready-made teaching materials prepared by publishers or teaching consultants. Teachers may also fear lack of adequate discipline among students working individually in the field.

It seems that each science teacher who conducted such lesson at least once would want to include them into their work on a regular basis, since students' joy and interest in the topic and their effort engaged into accomplishing tasks would become an incentive to continue such activities.

The ORE findings demonstrated that geography and biology teachers surveyed in the study mainly used the school premises or natural environment around school. They rarely took students for field trips to places far from school and even less frequently to zoos or botanic gardens (which is recommended by the core curriculum for biology). It may confirm the problem with funding such trips, especially in poorer regions. There is also an alternative explanation. Field trips organised with the help of EU projects or parents' councils are not adequately prepared, the programme is random, often determined by a tourism company and teachers make no effort to modify in to comply with recommendations of the core curriculum.

Similar result were obtained in relation to demonstrating experiments and lab activities outside school: approximately 80% of science teachers declared in the ORE study that their students had never participated in lab activities since the beginning of the school year 2011/2012. A slightly smaller group declared lack of student participation in demonstrations of experiments outside school (approximately 65%).

**Graph 10.8. Declarations of teachers concerning demonstration of experiments and lab activities in biology, chemistry and physics staged outside school since the beginning of the school year 2011/2013 in the third grade of lower secondary school (ORE 2012a).**




*Source: IBE calculation from the ORE study.*

In summary, science teachers try to conduct field trips with students, but the level of implementing recommendations of the core curriculum is rather low, especially in natural science, biology and geography. Teachers rarely capitalise on opportunities to organise lab activities at a non-formal education centre for their students. If they do arrange field activities, they are usually staged at locations which may be reached by foot and are cost-free.

### 10.2.5. Teaching methods

The pivotal role in teaching and learning science subjects is played by research methods, including natural and laboratory experiments, modelling and measurements and observation methods, such as observations of ecosystems, living specimens of plants and animals (Stawiński, 2006).
In this report, we introduced a simplified notion of scientific method which includes also observations. We wanted to avoid complex classifications and nomenclature related to vast and often inconsistent theory of science teaching in Poland. Scientific method is understood as planning and conducting experiments, observations and measurements, analysis of their results and reasoning. Planning involves formulating research problems, constructing and testing hypotheses.
The ability to discuss obtained results and presenting one's opinion based on relevant argumentation. Verbal methods based on analysis of source texts (scientific and popular), including the results of empirical research, are equally valuable for developing scientific reasoning.
The PISA results[75] (MEN, PISA, 2006) became the starting point for the reform of school curricula and changes in structure and form of the core curriculum, including science subjects. Polish lower secondary school students scored much lower than the OECD average in performing experiments during science lessons (IFiS PAN, 2008), which influence the direction of changes in science education. The main objective was to limit the encyclopaedic approach and restore the importance of scientific method in teaching these subjects. The new core curriculum requirements related to experiments and observations introduced in 2008 recommended that the students should perform experiments, observations and measurements themselves, which would foster development and improve their ability to apply scientific method to problem solving and scientific reasoning.
Did science teachers use this opportunity to modify their methods? Do they develop skills related to application of scientific method, problem solving, formulating research problems and producing hypotheses or using equipment for experiments and observations during lessons? Based on the facts discussed above (such as  Let us take a closer look at teacher declarations concerning various methods the use during lessons.
One of the aspects included in the LM study diagnosing lower secondary school graduates was the ability to use the scientific method. Students were asked how often during biology, chemistry and physics lessons they had an opportunity to practice skills related to planing research and reasoning based on the results.

**Table 10.1. Student declarations concerning the frequency of situations related to research planning during lower secondary school biology, chemistry and physics lessons in the *Laboratory of Thinking* study (LM 2012).**

| activity | frequency | during biology lessons [%] | during chemistry lessons [%] | during physics lessons [%] |
|---|---|---|---|---|
| students were asked to draw conclusions from the conducted experiment | often | 30 | 39 | 35 |
| | never | 21 | 14 | 17 |
| students could plan experiments themselves | often | 13 | 14 | 16 |
| | never | 42 | 39 | 39 |
| students decided whether a problem could be solved empirically | often | 14 | 21 | 20 |
| | never | 31 | 23 | 26 |

*Source: LM, PPP IBE.*

[75] The full name of the study is: Programme for International Student Assessment. Polish Results from PISA 2006. More information about the study can be found in the Annex: Information on the studies.

Students rarely had the opportunity to plan experiments, even though it is not difficult to organise by a teacher. Such task can be given as a homework and a teacher could receive students' experiment plans via e-mail or in a printed form.
The most frequently used exercised seemed to be reasoning based on data analysis, although the correctness of drawing conclusions is open to doubt. Sometimes even at the upper secondary level students confuse inference with data analysis or even reading data from tables or graphs.
The student survey of the LM study included many questions related to experiments during science lessons.

**Table 10.2. Student declarations concerning the frequency of situations related to performing experiments during lower secondary school biology, chemistry and physics lessons in the Laboratory of Thinking study (LM 2012).**

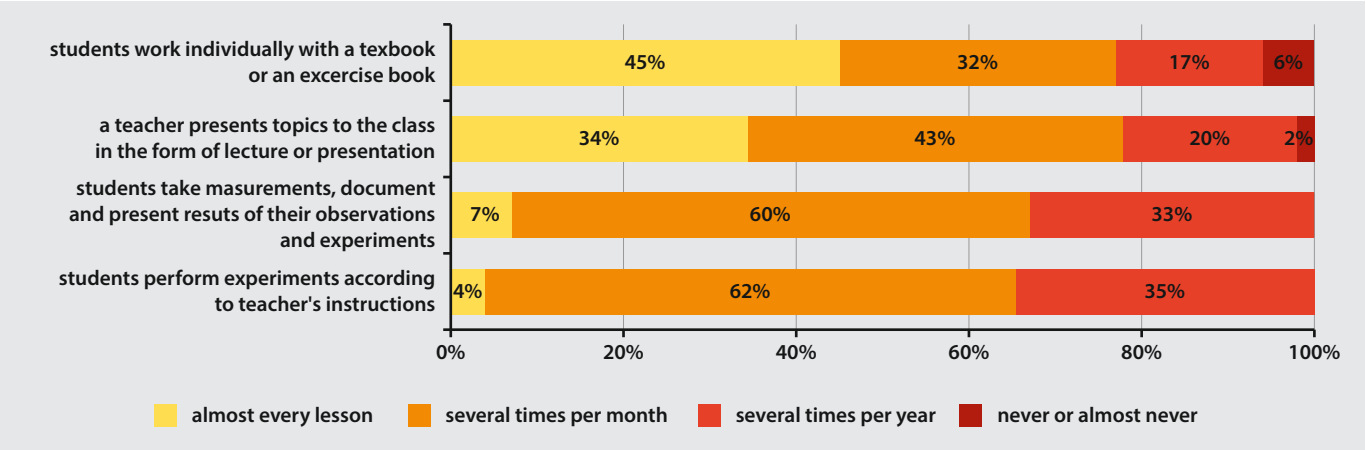
| activity | frequency | during biology lessons [%] | during chemistry lessons [%] | during physics lessons [%] |
|---|---|---|---|---|
| students performed experiments themselves in the school lab | often | 10 | 15 | 18 |
| | never | 49 | 41 | 33 |
| students performed experiments according to teacher's instructions | often | 22 | 27 | 29 |
| | never | 33 | 26 | 24 |
| the teacher demonstrated experiments to students | often | 26 | 42 | 39 |
| | never | 27 | 12 | 13 |

*Source: LM, PPPIBE.*

Students rarely performed experiments, individually or in groups. They were mere observers of experiments demonstrated by the teacher much more frequently. The comparison of results from 2011 and 2012 reveals a slight improvement (statistically significant differences) in the frequency of experiments performed by students and demonstrated by teachers. It may be the result of the core curriculum reform.
A similar area of activities related to methods and forms of work applied by teachers was research in student surveys in the SECURE project. The obtained data showed that science teachers preferred direct instruction methods - every second surveyed student declared that they listened to their teacher's explanations during every lesson. The second most preferred teaching method was student's individual work (approximately 40%). Gathered data illustrating most frequently used teaching aids suggest that students mainly worked on their own with their the textbook and the workbook. Students rarely had the opportunity to solve problems in small groups or present their findings to the whole class (over half declared that they never participated in such lesson).
Declarations of teachers surveyed in the SECURE project concerning the development of students' ability to employ the scientific methods and perform experiments did not exactly match the feedback of students. Only 14% of interviewed teachers stated that they never applied teamwork or work in small groups during experiments, whereas over 50% of surveyed students stated that they never solved problems in small groups. Similarly disproportional results were obtained for planning and implementing experiments/practical activities. This divergence between student and teacher declarations concerning the frequency of using methods and forms of work may result from different understanding of questions in the survey or from a different classification and names for teaching activities during lessons. It may also result from teachers' attempts at improving the results for science education in areas emphasised by the 2008 core curriculum reform.

Declarations obtained from teachers surveyed in the study on teaching science in primary schools were similar to those in the SECURE study.

**Graph 10.9. Science teacher declarations concerning the frequency of using particular methods. "During lessons you conduct, how often do the following situations take place?"**




*Source: DPNP, PPP IBE.*

It is clear that verbal methods in the form of working with a textbook and lecture or lecture illustrated by a presentation dominated. The fact that this is related to children aged 10-12, for whom activity, especially locomotory activity, is very important is a source for concern. In most science lessons, students in grades 4 to 6 during work individually with a textbook during almost every lesson. Later they probably report prepared topics assigned earlier by the teacher to the rest of the class. Only few teachers created conditions in which students could perform experiments or take measurements. Only some of them developed student ability to document and present the results of their observations and experiments. Such approach towards students still interested in science subjects (Osborne, 2003) may drastically reduce their motivation for learning, especially for subjects commonly perceived as difficult, i.e., chemistry and physics.
Finally students' opinions. The qualitative FGI study covering students showed that students rarely had the opportunity to perform experiments themselves during lessons. If there was an experiment during class, it was usually demonstrated by the teacher.

*We are only given information that such and such experiment exists, but we would never conduct it, since there is no equipment or adequate conditions (...) or the teacher is unwilling, because we misbehaved"*

[general upper secondary school students, Warsaw]

However, it should be remembered that there were also science teachers who encouraged students and created adequate conditions for conducting experiments.

*In our class, for example, during chemistry it was obvious that a teacher had to perform the experiment, but during physics lesson we do them, the teacher only tells us how. There are different examples in the textbook and everyone can choose which to do during lessons.*

[lower secondary school students, Warsaw]

In the same study science teachers also discussed different methods which, in their opinion, contributed to effective development of complex scientific skills, especially working with experimental method and using scientific methods for problem solving. As was mentioned earlier, the terminology used by teachers was not always consistent with theory of teaching science. Teachers talked

about creating in students' minds complex mental constructs understood as shaping independent thinking (for example, by the ability to draw conclusions) and action (by performing and understanding experiments). These complex constructs could also be shaped by developing scientific attitude, scientific reasoning skills and using it for problem solving. Methods useful for building these complex constructs were, according to teachers, discussion, source text analysis, brainstorming directed at finding solutions, solving problems and completing tasks requiring associating facts, synthesis or data analysis.

Teachers participating in the FGI study also noted the fundamental principle of teaching - using various methods adjusted to objectives and content of a particular lesson, but also to its recipients. Teachers also emphasised the need for flexibility in selecting methods. In their opinions, a method productive for one class may not work for another class. Also, overuse of one method may lead to boredom and limit its stimulating effect. The same applies to the use of some attractive method (such as working with an educational film as source material, discussion) - it may loose its appeal if it is based on uninteresting or outdated issues (for example, an outdated film or discussion on a topic too abstract for students).

Science teachers develop student ability to use scientific method insufficiently. They prefer lecture-based and verbal methods - working with a source text, usually an excerpt from the textbook. Experiments, observations and measurements, as well as related activities developing the ability to work with scientific method are not used enough during lessons.

Science teachers try to implement the objectives and content of the current core curriculum to the best of their ability. They use various teaching aids, with a strong preference for textbooks and workbooks. The laboratory and observation equipment is used sporadically.

Teachers rarely conduct lessons based on individual or group work under their supervision. They probably fear loosing control over students' work and disturbing classroom discipline. Teachers usually fear loosing control because they do not trust students, their motivation to learn, interest in the subject and their internal discipline which is underdeveloped in Polish schools. If teachers use mainly lecture-based and verbal methods enabling observation of the whole class and control over the discipline of each student, they are not always fully aware that moving from these methods towards individual or group problem solving based on student experiments, observations and measurements in class of in the field may contribute to their increased interest in the subject and motivation to learn. Frequent use of such methods results in development of students' good habits, which contribute to the development of their research discipline and scientific reasoning skills and this increases the quality of lessons. Such correlation was observed during study trips of IBE's Science Section to Great Britain and Finland. During science lessons students enjoyed conducting chemical or physical experiments, biological observations - they new where to look for necessary equipment and proceeded with due caution while dealing with reagents or fire. Asked about the frequency of conducting experiments or observations during lessons, British students confirmed the researchers' assumption that their ease resulted from scientific routine in the positive sense of the word. Finnish schools were similar.

It should be noted that these opinions about the style of work and most frequently used methods are relevant for so called average science teacher. Many engaged, creative teachers teach science at the highest level, aware of both scientific and social objectives of their subjects. Similarly to other professions, we can find among teachers, including science teachers, engaged individuals driven by passion, enthusiastic about their work, and less engaged teachers who would only do what is necessary. These are two extremes and most teachers probably fit somewhere in between. This

varied approach towards the profession was confirmed in the *Good Practice in Non-Formal Science Education* study (PEP)[76]. In individual interviews respondents working in institutions of non-formal science education reported that teachers who visited such institutions with their students displayed two main attitudes: engagement (acceptance) and withdrawal (rejection). Interestingly, both attitudes were displayed by teachers who followed the core curriculum recommendations concerning lessons outside schools. Engaged teachers participated actively in classes as members of a group or offered support for the instructor, usually intentionally selected elements of the institution's offer for their students and encouraged participation of students engaged in extra-curricular activities in the subject. They were usually passionate teachers born for this profession, who cared about motivating their students and expanding their knowledge. Withdrawn teachers who brought students to the centre took the role of observers, a passive attitude - they did not interfere or participate in classes, they did not support the instructor even in maintaining discipline. The same variations of attitudes may be observed in schools.

### 10.2.6. Communication in the classroom

The ability to communicate effectively in the real world and via electronic communicators are the most valued so called soft skills. For several years Polish entrepreneurs have been sounding a warning that graduates from schools and higher education did not demonstrate a sufficient level of social skills. It seems, therefore, that school and teachers, including science teachers, should pay special attention to shaping these skills.

Communication between teachers and students, as well as between students themselves is essential for school social life, as well as for teaching. Good communication is a prerequisite for effective learning, shaping cooperation skills or active participation in debates and discussions, as well as exchange of opinions and beliefs. Science subjects are perceived by students as difficult, so any interference in the flow of information will additionally disrupt the process of learning them. Science teachers should encourage students to ask questions and openly talk about what they do not understand, clearly inform students about their expectations and encourage students to solve problems together, as a team.

Is that what happens?

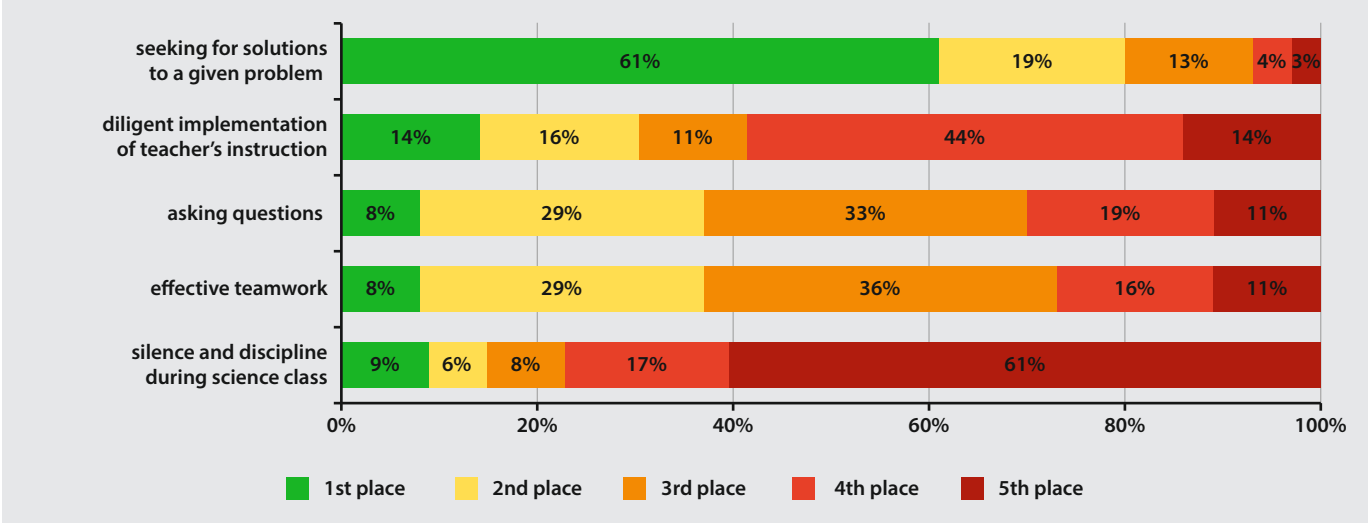
Science teachers covered by the DPNP survey appreciate their students' ability to seek for solutions of a given problem, whereas few of them gave the priority to asking questions and effective teamwork. It seems that not all teachers are aware of the significance of teamwork and skills that can be developed through working in a group. Why? It may be assumed that teachers are afraid of teamwork because they feel they may lose control over the classroom and disturb the one-way information flow, to which most teachers are simply accustomed.

Teachers are also afraid that poor students working in a group would rely on knowledge and skills of more talented class members. It might create a difficult situation while assessing work of individual students. Moreover, teachers can be convinced that only knowledge they transfer to students from the blackboard is correct. Sometimes they do not trust students or believe that students, especially poor ones, would be able to compete the task assigned to the team. Worse still, they may solve it incorrectly and retain this false and unverified information. Teachers do not take into account the obvious benefits, including not only the development of communication skills and responsibility, but also individual search for information and sharing it, critical assessment of data and inference, i.e., formulating general statements. Teachers afraid of using teamwork in their classrooms deprive their students of all these benefits. Perhaps there is also an external organisational barrier - it is difficult to introduce the topic, formulate a problem, give students source materials for

[76] The full name of the study: *Good Practice in Non-Formal Science Classes Survey*. More information about the study can be found in the Annex: Information on the studies.

teamwork, gather teamwork results and discuss them in front of the class during the 45 minutes of a typical lesson. Without discussing results, such an approach loses its teaching value.

**Graph 10.10. The ranking of student behaviours appreciated by primary school science teachers from the most to the least appreciated one (DPNP, 2013).**




*Source: DPNP, PPP IBE.*

Another problem may result from the fact that teachers attach low importance to students' questions. Such assessment combined with a high degree of diligent compliance with teacher's instructions may suggest a preference for the directive teaching style. Students are expected to solve problems formulated by teachers, ask few questions and listen to teachers' instructions. Such an atmosphere does not foster communication skills and leaves room for students' creativity and active participation. The fact that teachers do not relate problem solving to ability to ask questions is a source for concern, since asking questions is a sign of scientific attitude towards the world and is indispensable to scientific method. It is also possible that teachers underestimate these skills because they do not understand that a student who cannot formulate questions also will not be able to recognise problems worth solving.

Results of the student survey in the *Laboratory of Thinking* study (LM) were more optimistic. Students were asked how often their lower secondary school teacher encouraged them to ask questions and openly admit that they did not understand something. The answers showed that over 60% of science teachers encouraged students to ask questions during all or most of lessons. In the same study they were asked whether they had had the opportunity to participate in debates and discussions during science lessons. The results show that such methods were rarely used during science lessons. This does not mean that science teachers neglect the development of skills such as public presentation of opinions and valid argument - the proportion of cases where students did not participate in discussions at all was around 22-26%. Communication during science lessons was usually reduced to students expressing their opinions on a subject or explaining their ideas. Debates and discussions are not frequent during science lessons, thee is, however, a group of teachers who creates conditions for such forms of student engagement.

### 10.2.7. Student assessment

The rules for assessment, classification and promoting students of public primary, lower and upper secondary schools are regulated by Regulations of the Ministry of National Education[77] and In-School Assessment Systems. According to provisions of educational law, a student can be assessed based on a written work (tests covering larger or smaller parts of the material, written homework assignments), oral tasks (oral answers, participation in discussions or talks) and the quality of practical tasks or projects carries out individually or in a group. Activity and engagement during lessons and accomplishing additional tasks may also be taken into account. The quality of experiments and observations, including their documentation, is another aspect of student assessment. It should be added that diagnosis of student knowledge and skills is an integral part of assessment. The function of assessment is complex and not solely directed at ranking students, but rather at giving feedback about heir current level of knowledge and skills, as well as motivating them to make further efforts and continue learning.

The form of student assessment usually stems from teacher's personal hierarchy of teaching objectives. If teachers believe that student knowledge is the most important, they will monitor its level using traditional methods, such as tests or oral answers "by the blackboard" and attach less significance to students' practical skills. If teachers give priority to student practical skills, they will value such activities as participation in projects, constructing models, solving problems during lessons or correct realisation and documentation of experiments and observations. Educational requirements formulated by teachers, presented to students at the beginning of each academic year and successively referred to during implementation of teaching objectives and content are the basis for diagnosis and assessment. These requirements should be consistent with objectives and content of the current core curriculum.

In the *Laboratory of Thinking* study (LM) students were asked whether the teacher informed them what they should know and understand after the lesson. The proportion of students declaring that the teacher gave them such information was over 60% on average.

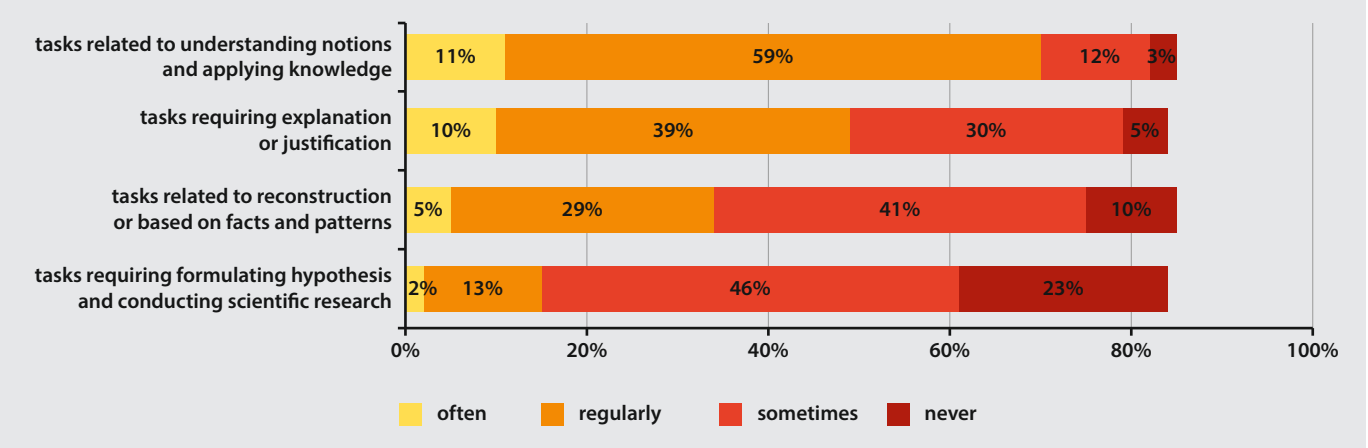
Do science teacher use different forms of assessment? Which form of diagnosis and assessment they prefer? Is their diagnosis consistent with educational requirements and core curriculum?

The lower secondary school graduates in the LM study asked about requirements of their science teachers put knowledge of facts, rules and definitions at the first place (IBE, 2012a). In the study conducted by the Institute of Philosophy and Sociology (Polish Academy of Sciences)[78], lower secondary school science teachers asked about the elements of student assessment indicated basic knowledge and skills determined by the requirements of the core curriculum and external exams, the level of cross-sectional knowledge with focus on interdisciplinary approach and individual reasoning. The list of assessed elements lacked scientific skills, ability to use different sources of information, teamwork or communication skills. In the SECURE questionnaire teachers were also asked about the frequency of giving students test assignments requiring the use of scientific method and reasoning involving reconstruction of information or understanding notions.

[77] Regulation of the Minister of Education of 20 August 2010 changing the regulation on the conditions and method of assessing, classifying and promoting students and conducting tests and examinations in public schools (Journal of Laws 2010 No. 156, item. 1046).

[78] The full name of the study was: *Good Practice in Non-Formal Science Education Based on Interviews with Lower Secondary and Primary School Teachers.* More information about the study can be found in the Annex: Information on the studies.

**Graph 10.11. Teacher declarations in the SECURE study about the types of tasks during science/technology tests (SECURE)*.**




** Resulting percentages do not total 100% because of lack of responses.*

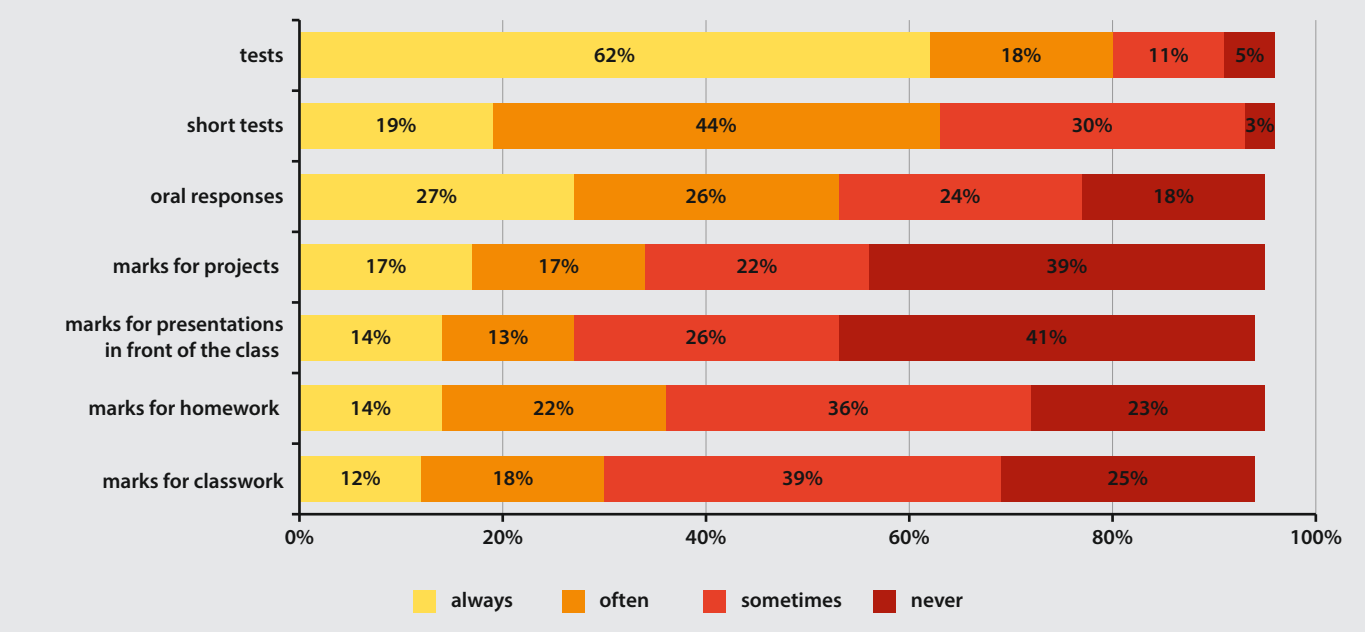
*Source: IBE calculation from SECURE.*

It is clear that teachers preferred assessing understanding of notions and applying knowledge, explanation and justification. They attached less significance to the ability to use scientific method in the form of formulating hypothesis and knowledge of procedures of scientific research. These results are not entirely consistent with the findings of the *Laboratory of Thinking* study, in which students were asked how often teachers of science subjects required knowledge of facts, rules and definitions. In both LM cycles every fourth student declared that such knowledge was required from them only during some lessons, whereas 64-70% of students reported that knowledge of facts and rules was required regularly (i.e., *during all or almost all lessons*). Differences between teacher declarations and information acquired from students may stem from the fact that students not always distinguish tasks requiring simple reference to some informations from tasks requiring more complex skills or because students were gave more direct responses than teachers.

Therefore, in most cases it is still more important how much students have learnt and less important what they can do. Perhaps science teachers do not see skills which are less frequently assessed during external exams as worth attention. Perhaps it is the pragmatist attitude developed in the process of adaptation to working conditions of science teachers and what they are accounted for.

Written tests are the most popular form of student assessment. This preference is not surprising in view of the fact that each student is expected to take at least one written test and external exam. Although form and content of these tests are increasingly favourable to diagnosing student reasoning skills, it still remains a written exam. By preferring this assessment form, teachers strive to meet expectations of parents, school principal, the governing authority and often students themselves who wish to achieve the highest score, both at individual and all-school level Science teachers participating in the FGI study group interviews emphasised that the most important marks received by students during the school year were from tests. This was a similar hierarchy of assessment forms to student declarations in SECURE.

**Graph 10.12. Declarations of 1st grade lower secondary school students related to assessment forms in chemistry, biology, physics and geography lessons in the SECURE* project.**




*Resulting percentages do not total 100% because of lack of responses.*

*Source: IBE calculation from SECURE.*

Teacher responses showed that science teachers used mainly short and long tests to assess student knowledge and skills, as well as their progress. Teachers were less willing to use oral responses as diagnostic means, probably because of their time-consuming nature. Students were also asked about the frequency of assessing homework, classroom work, presentations delivered in front of the class and student projects. Their responses indicated the predominance of traditional assessment methods over the ones which would evaluate their skills. The fact that homework and classroom work was so rarely assessed is also worrying. It may be suspected that in some cases homework was not assessed at all, only its absence was noted.

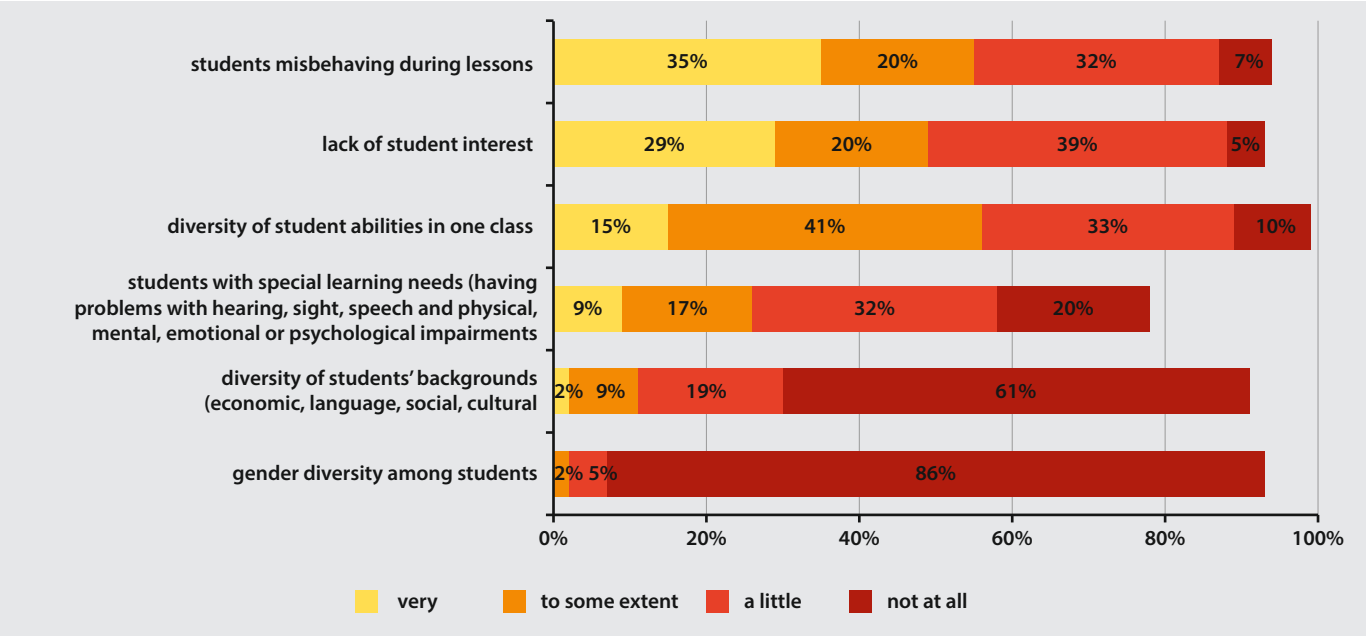
Active and engaged science teachers participating in the FGI study were aware of the significance of motivational assessment, the need for varying marks and adjusting assessment criteria to observed student capabilities, effort and progress. Unfortunately, there is lack of data concerning the use of formative assessment - including the vital role of the feedback - by science teachers.

## 10.3. What are the obstacles to science teaching?

The obstacles to science teaching can be divided into two basic groups: external and internal. Some external obstacles have been commonly known for years - not only science teachers complain about the excessive number of students in the class and insufficient number of hours for a given subject. The fact that Poland has one of the smallest class sizes in Europe or that as a result of curriculum reform the number of hours did not decrease, only their distribution among subjects changed, does not change teachers' perception of the problem.

In the SECURE study teachers were asked to evaluate student features and behaviour as obstacles to effective teaching.

**Graph 10.13. Teacher declarations concerning student features of behaviour disturbing science/technology teaching (SECURE)*.**




** Resulting percentages do not total 100% because of lack of responses.*

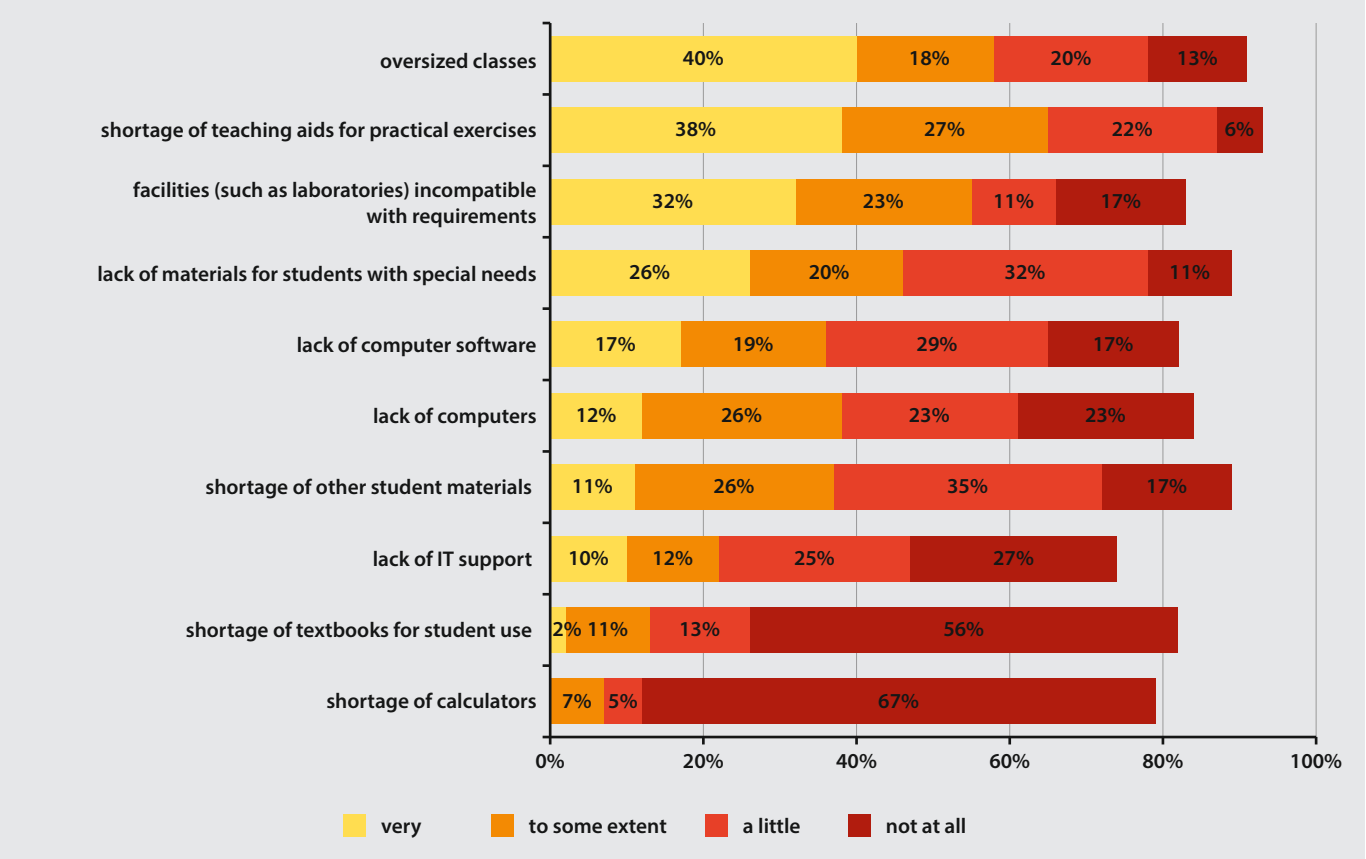
*Source: IBE calculation from SECURE.*

Students misbehaving in the classroom were the biggest problem for teachers. It is especially interesting in view of findings quoted earlier, according to which teachers ranked managing discipline at the bottom of their important activities. Another negative element was lack of student interest in science subjects. Over half the teachers indicated diversification of student abilities as a source of problems for science teaching.

The SECURE questionnaire also included a question concerning elements interfering with conducting science lessons.

Teacher responses indicated oversized classes and shortage of teaching aids for practical exercises, including modestly equipped science classrooms. A big problem was the absence of materials for students, including those with special learning needs. Teachers also experienced problems with lack of computer equipment, software and IT support.

**Graph 10.14. Teacher declarations concerning elements interfering with conducting science/technology lessons (SECURE)*.**




** Resulting percentages do not total 100% because of lack of responses.*

*Source: IBE calculation from SECURE.*

The FGI results showed that the activity of most teachers seeking funding for their science classrooms is limited to providing the principal with the list of demands. After refusal motivated by lack of financial resources they rarely undertook any other measures to find financial support elsewhere. There were also more resourceful teachers who looked for support among student parents, for example, to renovate the science classroom or provide necessary equipment and materials. They applied for grants from European Social Fund (within the framework of particular projects) or submitted their own projects for competitions organised by local governments, universities or scientific institutions. Sometimes school principals even required teachers to look for funding outside their schools.

*We do submit, even though it is a problem for me, because the principal wants me to arrange sponsors and prizes. So if I want to do something, unfortunately I become a sponsor, someone who arranges these prizes.*

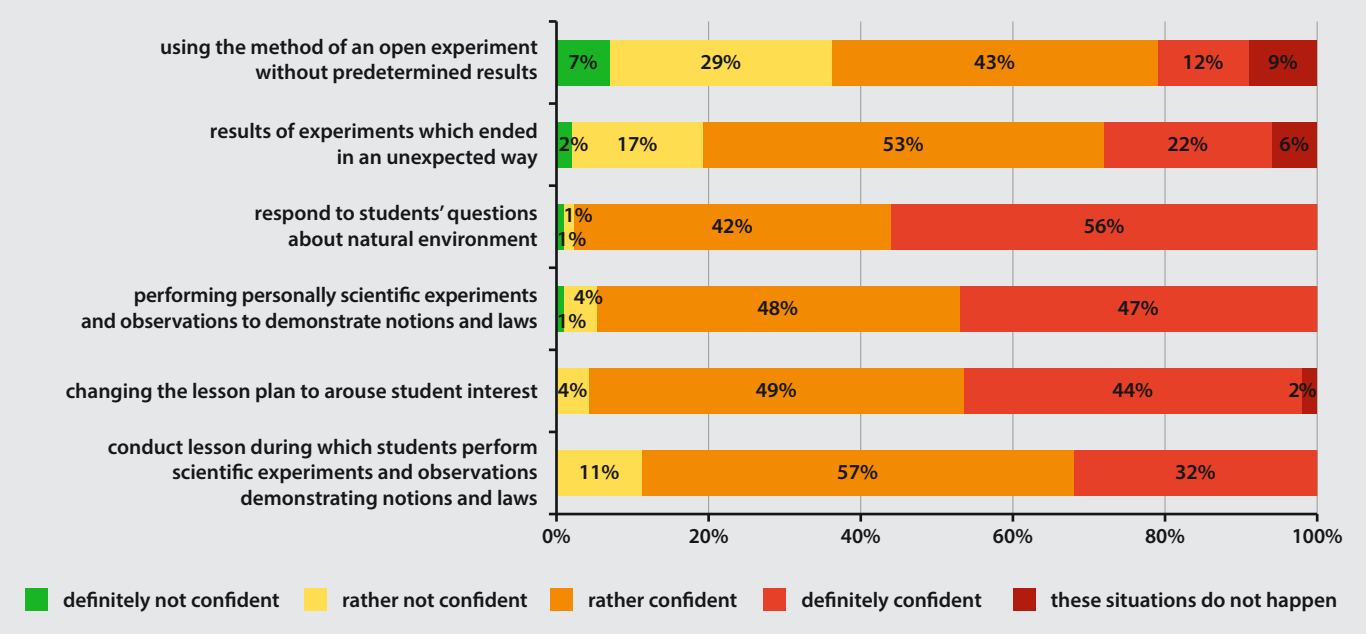
[geography teacher, Włocławek]

There is no information whether teachers undertook any activities to decrease the number of students in their classes or whether they made any requests the their schools' governing authorities to have lab classes in smaller groups.

There are some situations during lessons which may make science teacher feel diffidence and discomfort as well as freedom and sense of control over the situation. In the study in the needs of primary school science teachers (DPNP) these internal barriers faced by science teachers were

diagnosed, such as difficulties they may experience in performing certain activities related to scientific method during lessons.

**Graph 10.15. Difficulties experienced by science teachers related to activities during lessons in 4-6 grades of primary school, diagnosed with the following question: "During science lessons, how confident are you while..." (DPNP, 2013).**




*Source: DPNP, PPP IBE.*

Teachers did not feel confident while discussing results of experiments which ended in an unexpected way and using the method of an open experiment without predetermined results. This may reveal that science teachers lack full understanding of the essence of experimenting, which is by its nature an open activity. Perhaps it is further confirmed by the fact that only every tenth teacher indicated lessons during which students perform experiments and observations as problematic. Therefore, if a student performs an experiment which "will fail" it will not be a problem for a teacher. Teacher declarations show that they conducted such lessons with confidence, so internal problems cannot explain the low frequency of using experiments during science lessons. The discussed research suggests teachers find the excessive number of students in the class, problems with discipline and no interest in the subject most disturbing in their teaching practice. Constraints of a science teacher also include shortage of teaching aids, modestly equipped classrooms, absence of materials for students, including those with special learning needs and lack of computer equipment. A relatively large group of science teachers feel challenged by open experiments in the classroom and experiments which failed to meet their expectations.

## 10.4. What counts as success for science teachers?

Science teachers understand their success as successes of their students - talented and low academic achievers who fail to cope with the subject. In the group interviews (FGI) active teachers described success in their professional life.

Many teachers interviewed mentioned improvement of their poor or uninterested students' performance as examples of their success. They recognised as successes situations when underperforming students began to understand issues which had been problematic for them earlier, when their progress was noticeable, when a student uninterested in science and disrespectful towards learning

began to show interest, engaged in lessons and learning. Teachers emphasised satisfaction from leading especially troublesome students to graduation and passing exams.
Gifted students interested in science were an obvious source of teachers' professional satisfaction. They were proud of students wining prizes and receiving commendations, ranking highly in competitions.

*Laureates are the balm to our hearts.*

[physics teachers, Cracow]

Teachers were especially pleased by gifted students who developed their interest in science and continued their education in the science subject or related areas (for example, a student chose biology and chemistry at the extended level and later studied medicine). Teachers felt that their work contributed to their students' choice carrier connected with science and development of their interests in this area.

*I am happy when I hear that thanks to my efforts they were accepted to their desired school, to biological and chemical profile and perform well in my subject.*

[chemistry teacher, Poznań]

Science teachers valued the signs of gratitude from students who appreciated their efforts and teaching methods and stated that thanks to a high level of teaching in lower secondary school they had not problem at higher levels of education or even found these subjects easy.
Science teachers described as success arising student interest in science and changing their attitudes towards learning. They were aware that their subjects are often perceived by students as difficult and not widely liked, so they were all the more pleased by any signs of student interest and their initiative to develop their scientific knowledge. Teachers indicated various signs of interest, such as attempts to improve marks by individual students, good results of the whole class in a given area, willingness of a student or a group of students to participate in extra-curricula activities related to the subject, good end-of-term, end-of-year or exam results.

*He performed better in the exam than regular learning. His end-of-year mark is good and the test result was very good. Perhaps he was no systematic, but he knows something My methods worked.*

[chemistry teacher, Poznań]

Teachers also interpreted success as good relations with students or school alumni, which, in their opinion, was manifested by effortless classroom discipline, students' perception of their teacher as a serious partner or openly expressed emotions triggered by the subject of a lesson.
In their view, achievements also included overcoming one's challenges relating to their teaching practice or even the decision to carry on working in this difficult line of work. They derived authentic satisfaction from working with young people and that despite repeating the same or similar topics and many years of teaching the subject, each lesson was a challenge and they managed to avoid routine and fatigue.

*It is a success that I still want to continue as a teacher. It is an achievement.*

[general science and geography teacher, Katowice]

Opinions of active science teachers revealed that they perceived as success helping underachieving students, developing interest in their subject and good relations with students rather that spectacular or measurable professional achievements, such as high number of prizewinning students or high average score in their subjects.

## 10.5. A good science teacher

What is a good science teacher? Students participating in the FGI study tried to answer this question. It was a purposive sample of lower and general upper secondary school students who were interested in science, so it can be assumed that their ideal of a good science teacher was at least partially based on observing science teachers in their own schools.

According to students interviewed in the FGI study, a good science teacher was focused on students' interests in their subjects, patiently explained the topic again if there was such need, they could activate students (encourage asking questions and discussions) and used various techniques to interest students in the topic (such as conducting experiments, using specimens or relevant items or creating them, preparing interesting multimedia presentations). Their knowledge of the discipline and ability to transfer it to young people in an accessible and clear language, ability and willingness to answer student questions and to solve even the most difficult problems in the subject field, as well as orientation about the most recent advancements in the field, were important.

A good teacher should not frighten students, but they should not be their "pals" either. They should be respected due to firm and consistent behaviour, broad knowledge and fair assessment.

Students also described the specific qualities of a good science teacher. One such quality expected particularly from science teachers was creativity. Students participating in the study defined creativity as the ability to transfer knowledge in an interesting way, including experiments, exhibits, multimedia aids, pictures, photos, and engaging students in lessons (for example, by collectively building a cell from paper during a biology lesson); organising student competitions (for example, identifying the bones in the human skull or creating crossword puzzle clues linked to the lesson topic).

In the focus group interviews conducted as part of the same study, lower secondary school science teachers confirmed student opinions, describing a good teacher as someone who could deliver lessons in an interesting, engaging and effective way. In their opinions, a good teacher was passionate and creative, they should demonstrate an authentic interest in their subject and willingness to transfer this passion to their students, they should conduct extra-curricular classes and initiate student projects, have a talent for telling interesting anecdotes, latest fan facts, non-standard explanation, etc. Teachers also emphasised the importance of an individual approach to students and appreciation of their efforts. Another important quality indicated by science teachers was the need for constant development in their subject field and teaching methodology, as well as ability to adapt quickly to changes.

There is no doubt that science subjects constitute a field developing particularly dynamically, which forces science teachers to continuously update and supplement their knowledge. Teachers who do not develop their knowledge and skills are in danger of routine and decline of the necessary competencies, whereas students are at risk of learning outdated and useless information.

Teachers understand the need for continuing education in teaching science subjects. For example, in the questionnaire from the SECURE project, nearly 90% of participants agreed with the necessity of professional development. At the same time, over half the respondents stated that they did not have enough time to develop their qualifications. Primary school science teachers (DPNP), asked about their willingness to participate in training related to application of scientific method gave a positive answer in 96% of cases. The majority of teachers developed their knowledge and skills mostly influenced by system and curriculum changes which impose their learning of additional skills. In the study conducted by the Institute of Philosophy and Sociology of the Polish Academy of Sciences (IFiS PAN), almost half respondents declared that they improved their competencies in a conscious and planned way. Every fourth respondent participated in training organised by teacher training centres or publishers. They were often motivated by the school principal's instruction and the influence of training on their promotion. The fact that teachers constitute a professional group keenly interested in professional development is supported by the fact that some of these teachers were qualified to teach as many as 4 or 5 subjects at lower secondary school level and developed

their competencies even after becoming chartered teachers. There were only a few teachers who did not participate in any form of professional development. It is worth noting, however, that good science teachers are more interested in practical, laboratory training, related, for example, to scientific method, rather than theoretical knowledge. Teachers who wanted to explain some issues to their students should first learn and understand them themselves. In the study of fourth to sixth grade primary school teachers (DPNP) almost half the teachers declared the need for learning some simple and easy experiments that would be interesting for students. Every fifth respondent wanted to learn about issues related to scientific method, such as correct planing of an experiment or how to teach students to formulate hypotheses. Teachers were also interested in issues such as motivating students to use scientific method, selecting experiments according to students' age or methods of conducting experiments in unfavourable conditions, such as large classes or students with special needs. Teachers genuinely interested in developing their skill of teaching with the use of experiments tried to participate in various workshops organised within the framework of projects propagating innovative methods of teaching science. During such workshops they could learn the most state-of-the-art techniques of conducting lessons and motivating students to conduct experiments developed by centres of teacher professional development as part of European and American projects[79].

A good science teacher should also develop their ICT skills, so that they would not feel uncomfortable while using computers during lessons and would be able to use such tools consciously and purposefully. The study of general upper secondary school science teachers (KŚ, 2011) suggested that teachers rarely used the Internet for verification and deepening their knowledge because of doubts concerning the reliability and quality of information obtained from the web compared to printed sources. Such scepticism, however, seems unfounded. Teachers should not verify their knowledge solely in textbooks or from information obtained during their university courses. Moreover, core curriculum requirements oblige teachers to work with such sources of information. Wisely used, web sources can become an invaluable help in lesson preparation and a source for interesting teaching aids. It also creates opportunities for exchange of ideas and sharing experiences with other teachers, as in the case of a European project eTwinning[80]. It should be remembered, however, that ICT are only tools supposed to support implementation of teaching objectives and should not dominate the teaching process.

Creativity is the key quality of a good science teacher according to both students and teachers. This convergence of opinions is not coincidental. Conducting experiments, planning and realising lessons using experiments, openness to unexpected results and original ideas of students, proper reactions to unexpected situations in the science classroom or during field activities, unconventional ideas for motivating students to learn subjects perceived as difficult - all this requires teachers to activate deep layers of creativity. The science teachers often confronts situations which require the use of non-standard forms and methods of work. In order to solve atypical problems, a good science teacher has to be ready for both creating new strategies and the risk of failure. Often an attempt at solving a problem, testing various possibilities is more important in working with students than finding a correct answer. A teacher able to deviate from a pattern towards creative and speculative thinking is better at developing such qualities in their students, so perhaps the most valuable feature of a science teacher would be independence of thought and action. This picture of a good science teacher is subjective and incomplete, but it seems to reflect the specific nature of this group of teachers. Is it possible to determine the direction in which the Polish science teacher will evolve to meet the challenges of teaching in the 21st century? Answering this question would require

[79] For example, teachers interested in IBSE method (Inquiry Based Science Education )- could learn it during workshops organised by the Jagiellonian University within the frameworks of Fibonacci, ESTABLISH, SAILS and IBSE for Life Science Teacher Training prepared by Amgen Foundation and European Schoolnet.

[80] http://www.etwinning.net/pl/pub/index.htm

reflection on the role of the science teacher in the 21st century, since the functions in the teaching process to a large extent impose a set of qualities and the competencies necessary to fulfil them.
The image of the future teaching staff has to be discussed from a European or even global perspective, bearing in mind that the modern science teacher will work in a socio-economic reality where "all students, regardless of their plans after graduation, have to develop flexibility and versatility unknown to earlier generations. They will increasingly have to use critical and creative thinking to solve problems and make decisions, familiarise themselves with technology, educated in the traditional sense of the word and highly communicative. They will be expected to have good interpersonal and cooperation skills. And finally, they will have to learn their whole life" (Day, 2004, p. 274). Key competences necessary for building human capital were defined in *The Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning (2006/962/WE)* as combination of knowledge, skills and attitudes which all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment. The recommendation listed eight key competences: communication in the mother tongue; communication in foreign languages; mathematical competence and basic competences in science and technology; digital competence; learning to learn; social and civic competences; sense of initiative and entrepreneurship; and cultural awareness and expression. Science teachers should focus on forms and methods enabling them and their students to acquire and develop competences in science and technology which refer to "the ability and willingness to use the body of knowledge and methodology employed to explain the natural world, in order to identify questions and to draw evidence-based conclusions. (...) the application of that knowledge and methodology in response to perceived human wants or needs. (...) understanding of the changes caused by human activity and responsibility as an individual citizen". These, however, are not the only competences which teachers should foster to work efficiently. Communication in foreign languages is equally important, because continuing education often requires reading literature written in foreign languages, workshops and travel to foreign educational centres, exchange of experiences via on-line forums or participation in international projects directed at teachers. Competence in foreign languages also creates the opportunity to work as a science teacher abroad. Digital competence, i.e., the confident use of ICT, will simply become indispensable, because even now students are expected to seek, gather and critically process information, as well as to use it critically and systematically to support scientific reasoning, creativity and innovation. Perhaps the future science teacher will be expected to have a much more advanced knowledge of ICT than today. ICT skills quickly become obsolete, so teachers will be forced to develop throughout their careers. Learning to learn, understood as "the ability to pursue and persist in learning, to organise one's own learning, including through effective management of time and information, both individually and in groups(...) awareness of one's learning process and needs, identifying available opportunities, and the ability to overcome obstacles in order to learn successfully" should be discussed from the point of view of two aspects: continuing professional development of teachers (Continuing Professional Development - CPD) and developing the same skills in students. The science teacher of the 21st century should be highly motivated for continuing improvement of their qualifications and acquiring knowledge, mastering skills individually or during selected training sessions, willingly and without top-down pressure. Communication skills are equally important - a teacher cannot work properly without them. A good knowledge of various forms of communication (such as giving in-depth feedback, paraphrasing) and a good command of the mother tongue are the competences which enable teachers to explain complicated notions and ideas in a comprehensible and clear way to students, as well as communicate with them and their parents without problems. We should remember that a teacher should also guide students' search and selection of information and, more importantly, critical assessment of available sources. Highly developed social skills are equally important, because they enable successful cooperation with students, parents, other teachers and principals, as well as solving difficult problems at the social level. Sense of initiative and entrepreneurship refers to "an individual's ability to turn ideas

into action. It includes creativity, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives" (2006/962/EC). More than ever before, the 21st century teacher will be burdened with the need to manage projects, implement new teaching ideas, solve problems without ready solutions, inventing lesson plans which would interest their students and inspire them to think. Perhaps teachers will also have to exhibit a more entrepreneurial attitude, for example looking for funding of their ideas outside school.

Which teaching methods would science teachers of the 21st century use? Experts agree that the focus of teaching should be shifted from the teacher (teacher-centred learning) towards students (student-centred learning). Therefore, the model of teaching where a teacher conducts the lesson standing by the blackboard and using lecture-based methods, should be replaced by the model in which a teacher is a mentor, assisting and supporting students on their individual paths to knowledge offering different methods of investigation(inquiry-based learning) (EC, 2007; NRC, 2000; Bernard et al., 2012). The teacher's role would be to interest students, motivate them to work, to provide them with the knowledge and skills necessary for exploring the world and explaining phenomena based on empirical data, to teach them the critical analysis of reality, distinguishing facts from opinions, effective search and analysis of information, as well as constructive and creative problem solving, rather than "knowledge transfer" and preparing students for external tests. The teacher's efforts would focus on engaging students with research in order to enhance teaching effectiveness. The modern science teacher will understand that the purpose of science education does not lie in transferring encyclopaedic knowledge, facts, notions and definitions, but in shaping students' capability of scientific reasoning, directing students towards acquiring scientific knowledge and skills, shaping their ability to recognize problems, ask important questions and find correct answers (Ellermeijer, Kędzierska, Odrowąż, Maciejowska, 2013).

This optimistic vision of science teachers is slightly disturbed by demographics, since the data show that a "modern science teacher" will not be young. The number of teachers below 40 is decreasing, whereas the number of teachers over 40 years old is rising (Eurydice, 2013). This has its advantage, since experienced teachers open to professional development can become a foundation for these changes. However, the shortage of young teachers qualified according to the standards of the lifelong learning system will definitely have to be compensated by constant professional development of ageing teaching staff, which will become the best example for a "lifelong learning society". It should be emphasised that the problem of ageing teaching staff concerns the whole of Europe (Eurydice, 2013). The EU member states can and should support each other in search for effective solutions to this problem and share their experiences at a regional level and through expert reports of the European Commission or OECD.

The research on science teachers presented here indicate that the 19th century textbook based model of teaching, using blackboard and chalk is being slowly but effectively supplanted by more contemporary teaching models. Many teachers appreciate the need for change and are trying to adapt to the new patterns. As a result, model 21st century science teachers or teachers who try to conform with this ideal can be found in the Polish system of education.

# Annex 1: Information on the studies

## PART II
## Polish teachers

**STUDY TITLE: Time and Working Conditions of Teachers**

**Why was it conducted?**

The main purpose of the study was to determine the time dedicated, in terms of a typical week of a school year, to performance by teachers of professional duties and identification of the factors that determine its variation.

**When was it conducted?**

The study was conducted between November 2011 and 1 December 2012

**Who was the subject?**

The study covered 2167 teachers from 477 schools (CAPI) and 4762 teachers from 921 schools (CAWI).

The sample was created by means of a two-tier, stratified random sampling and is representative for teachers of primary schools, lower secondary schools, upper secondary schools and basic vocational schools who teach general subjects. Working time was not measured for teachers of vocational subjects, teachers of arts schools or special schools.

**How was it conducted?**

The qualitative study was carried out by means of 24 group interviews, during which a catalogue of teachers' professional activities and a glossary of terms were developed, so that the tools in the major quantitative studies would refer to concepts and terms corresponding to the reality of teachers' work and be adjusted to the way in which they are described by teachers themselves.

The quantitative study was carried out with the use of two techniques.

The first technique, implemented by means of Computer Assisted Personal Interviewing (CAPI), was the DAT (Day After Recall). Surveyors asked about the time dedicated by the respondent to the professional activities in the day preceding the interview.

The second technique were the Computer Assisted Web Interviews (CAWI), which mostly focused on the time dedicated to carrying out specific professional activities during a respondent's typical week as well as the frequency of performing different activities from the catalogue of professional activities and the time dedicated to them at a time.

**Who is responsible for the study?**

The study was implemented by the Educational Research Institute under the project "Education Enthusiasts," co-financed by the ESF.

**Source:**

Federowicz, M., Haman, J., Herczyński, J., Hernik, K., Krawczyk-Radwan, M., Malinowska, K., Pawłowski, M., Strawiński, P., Walczak, D., Wichrowski, A. (2013). *Czas pracy i warunki pracy w relacjach nauczycieli. Raport tematyczny z badania*. Warszawa: Instytut Badań Edukacyjnych.

## STUDY TITLE: TALIS 2013 – Teaching and Learning International Survey

**Why was it conducted?**

TALIS is aimed at providing information on teachers, teaching and the impact which teachers have on students' learning, including information for international comparisons of educational systems.

What is more, it enables teachers and school principals to contribute to analysis of the situation in education and development of the educational policy through expressing their opinions on issues such as: professional development opportunities, beliefs and practices related to teaching, assessment of teachers' performance, and feedback from principals and teachers, as well as other issues connected to leadership and school management, school climate.

Finally, it enables particular countries to identify other countries which are facing similar challenges, and enables drawing conclusions from examples of educational policies implemented in other countries.

**When was it conducted?**

Badanie było realizowane od lutego do kwietnia 2013 roku.

**Who was the subject?**

The study covered teachers and school principals.

In 2013, primary, lower and upper secondary school teachers were surveyed in Poland.

Data come from 3863 teachers and 188 principals working in 195 schools.

The sample was drawn by means of a two-tier procedure, stratified and is representative for lower secondary school teachers in Poland.

**How was it conducted?**

The study subjects were to fill in an Internet questionnaire (CAWI) or a paper questionnaire (Paper and Pencil Interview, PAPI).

**Who is responsible for the study?**

This is a joint undertaking of governments, an international consortium, OECD and teachers' unions of associated countries.

On the Polish side, the Educational Research Institute is responsible for the substantive aspect of the study. It is financed by the Ministry of National Education and the European Social Fund under the project "Education Enthusiasts."

**Source:**

Hernik, K., Malinowska, K., Piwowarski, R., Przewłocka, J., Smak, M. i Wichrowski, A. (2014). Polscy nauczyciele i dyrektorzy na tle międzynarodowym. Główne wyniki badania TALIS 2013. Warszawa: Instytut Badań Edukacyjnych.

## STUDY TITLE: TEDS-M 2008 Teacher Education and Development Study in Mathematics

**Why was it conducted?**

The aim of the study was to find an answer to the question concerning the path to the teaching profession, motivations, self-assessment of the professional preparation, time dedicated to professional duties, advancement paths, ways of conducting classes and working conditions (including: salaries, the atmosphere in the workplace, school equipment in teaching aids or the condition of classrooms).

**When was it conducted?**

The study was conducted in the field in November 2008.

**Who was the subject?**

Within the TEDS-M 2008 project, besides the survey among students of the final year of studies preparing for working as mathematics teachers in a primary or secondary school, an additional study was conducted, which covered 1076 mathematics teachers working in randomly sampled primary and lower secondary schools.

**How was it conducted?**

Interviewers conducted a questionnaire using the PAPI technique with the teachers.

**Who is responsible for the study?**

The study of Polish mathematics teachers was carried out by the Institute of Philosophy and Sociology of the Polish Academy of Sciences within the international project Teacher Education and Development Study in Mathematics (TEDS-M), implemented in 17 countries by the international Association for the Evaluation of Educational Achievement (IEA). The study was financed by the MNE.

**Source:**

Grzęda, M. (2010). *Nauczyciele matematyki w Polsce – raport z badania TEDS-M*. Warszawa: Instytut Filozofii i Socjologii.
Czajkowska, M., Jasińska, A., Sitek, M. (2010). *Kształcenie nauczycieli w Polsce. Wyniki międzynarodowego badania TEDS-M 2008*. Warszawa: Instytut Filozofii i Socjologii.

**STUDY TITLE: TIMSS/PIRLS – Trends in International Mathematics and Science Study (TIMSS) / Progress in International Reading Literacy Study (PIRLS)**

**Why was it conducted?**

The aim of the study was to provide comparable international data about children's school achievements, their conditions and dynamics of changes.

**When was it conducted?**

The study was carried out between March and June 2011.

**Who was the subject?**

In both studies, primary school third grade students and their teachers were the respondents.
5027 students and 527 teachers participated in the TIMSS.
5005 students and 527 teachers participated in the PIRLS.

**How was it conducted?**

On the first day, students solved problems related to writing and reading skills and answered questions concerning their teachers and teaching of writing and reading, whereas on the second day, they faced problems from the fields of mathematics and science, supplemented with an analogous questionnaire concerning the teacher and teaching.
In addition, the teachers (a vast majority of whom were early education teachers) responded to questions concerning their schools, being a teacher, the class taught, substantive preparation, scope of material, and teaching styles..

**Who is responsible for the study?**

The PIRLS and the TIMSS are twin, international, cyclical studies organised by the International Association for the Evaluation of Educational Achievement, IEA). The Central Examination Board was responsible for implementation of the study in Poland. The study was financed by the MNE.

**Source:**

International Association for the Evaluation of Educational Achievement (2011a). *TIMSS 2011 Assessment*. TIMSS & PIRLS International Study Center, Lynch School of Education, Boston College, Chestnut Hill, MA and International Association for the Evaluation of Educational Achievement (IEA), IEA Secretariat: Amsterdam.
International Association for the Evaluation of Educational Achievement (2011b). *PIRLS 2011 Assessment*. TIMSS & PIRLS International Study Center, Lynch School of Education, Boston College, Chestnut Hill, MA and International Association for the Evaluation of Educational Achievement (IEA), IEA Secretariat: Amsterdam.

## STUDY TITLE: School without Violence

**Why was it conducted?**

The social programme "School without Violence" is intended to increase the awareness of the problem, changing the attitude to violence and aggression and to provide schools with support and tools, which efficiently and systemically prevent the phenomenon of violence.
The aim of the study was to determine the scale of the problem of school violence, an analysis of the dynamics of the phenomenon – comparison: Polish school in the years 2006 and 2011, analysis of systemic factors in the context of violence and an attempt at determining the effects of the programme "School without Violence."

**When was it conducted?**

Data were collected in February and March 2009.

**Who was the subject?**

The study involved participation of 3169 students, 883 teachers and 2301 parents, including 428 parents of school children.

**How was it conducted?**

A questionnaire was carried out.
The study was conducted on a representative sample of 150 schools. In addition, the sample included 30 schools participating in the programme..

**Who is responsible for the study?**

The study was carried out on commission from publisher groups: Plsapresse, Media Regionalne, Fundacja Orange and Wydawnictwo Pedagogiczne Operon, the organisers and partner of the programme "School without Violence."

The design of the study and data analysis: the study team from the University of Warsaw's Institute of Sociology: Prof. Anna Giza-Poleszczuk, Agata Komendant-Brodowska, Anna Baczko-Dombi. The study was implemented by the Public Opinion Research Center.

**Source:**

Giza-Poleszczuk, A., Komendant-Brodowska, A., Baczko-Dombi, A. (2011). *Przemoc w szkole. Raport z badań*. Strona internetowa: http://www.szkolabezprzemocy.pl/pliki/318-sbp2011-raport-glowny-calosc.pdf (accessed on 1 December 2013).

**STUDY TITLE: Youth 2010 and Youth 2013**

**Why was it conducted?**

The study incorporated the vast scope of issues: the family home and school, financial situation and paid work, life aspirations and leisure activities, attitudes to democracy and politics, as well as declared values and moral norms. A lot of space was dedicated to the experiences of the subjects with psychoactive substances. For the first time, the issue of youth participation in games of chance was addressed.

**When was it conducted?**

Youth 2010: The study was carried out on 2-19 November 2013.
Youth 2013: The study was carried out on 22 November – 12 December 2013.

**Who was the subject?**

Youth 2010: The study covered 1246 students. It covered teenagers attending the final grades of secondary schools and upper secondary schools, day schools for teenagers (excluding special schools) based on the prior educational background of primary school or lower secondary school curriculum.
Youth 2013: The study covered 1360 students - teenagers from the final grades of day upper secondary schools, excluding special schools.

**How was it conducted?**

Youth 2010: Interviews with students were conducted as auditorium survey (many participants independently filled in questionnaires at the same time).
The study was carried out with the use of the quantitative method on a national random sample of 65 schools (one class per school) – general and technical upper secondary schools, basic vocational schools.
In each class, the study covered all students present at school on the day of the survey.
The schools were sampled from the database of the Ministry of National Education, available on the website www.cie.men.gov.pl.

**Who is responsible for the study?**

The study was carried out by the Public Opinion Research Center on commission from the National Bureau for Drug Prevention.

**Source:**

Kalka, J. (2011). Młodzież a szkoła. *Opinie i diagnozy, 19*, 24–42. Warszawa: CBOS.
Kalka, J. i Feliksiak, M. (2014). *Młodzież a szkoła*. W: CBOS i KBPN, *Młodzież 2013* (s. 22–43).

**STUDY TITLE: The Image of Teachers**

**Why was it conducted?**

The aim of the study was to find out what opinion was held by adult Poles about the teachers' image and work, as well as their reactions to the idea that the respondent's child would become a teacher.

**When was it conducted?**

The study was carried out in November 2012.

**Who was the subject?**

The study was carried out on a representative group of 952 adult Poles.

**How was it conducted?**

Sampling for the study was random.
Surveys were conducted with the use of the CAPI technology.

**Who is responsible for the study?**

The study was carried out by the Public Opinion Research Center within the omnibus (covering many subjects) study "Current problems and affairs".

**Source:**

CBOS (2012a). *Wizerunek nauczycieli. Komunikat z badań nr BS/173/2012*. Warszawa: CBOS.

**STUDY TITLE: Occupational Prestige**

**Why was it conducted?**

The study asked how particular professions were regarded by the respondents.

**When was it conducted?**

The study was carried out in August 2013.

**Who was the subject?**

The study was carried out on a representative group of 904 adult Poles.

**How was it conducted?**

Sampling for the study was random.
Surveys were conducted with the use of the CAPI technology.

**Who is responsible for the study?**

The study was carried out by the Public Opinion Research Center within the omnibus (covering many subjects) study "Current problems and affairs".

**Source:**

CBOS (2012b). *Prestiż zawodów. Komunikat z badań nr BS/164/2013*. Warszawa: CBOS.

## STUDY TITLE: Psycho-Social Working Conditions of Polish Teachers

**Why was it conducted?**

The study focused on the teachers' perception of positive (salutogenic) and negative (stress, pathogenic) factors characterising their workplace and the connections between these factors and the teacher-student relation and professional burnout.
The following factors were examined: social support, physical conditions, work organisation, relations with colleagues, students and their parents, aggression from superiors, social support, etc.

**When was it conducted?**

The studies were carried out within the project "Improvement of the safety and working conditions, stage I" financed by the NCN, implemented in the years 2008-2010.

**Who was the subject?**

The study covered 1214 teachers from primary schools, lower secondary schools, basic vocational schools and specialised, general and technical upper secondary schools.

**How was it conducted?**

The teachers were selected by means of two-tier, stratified sampling.

**Who is responsible for the study?**

The study was financed by the National Centre for Research and Development, implemented by the Institute of Occupational Medicine in Łódź and coordinated by the Central Institute for Labour Protection.

**Source:**

Pyżalski, J., Merecz, D. (red.) (2010). *Psychospołeczne warunki pracy polskich nauczycieli*. Kraków: Impuls.

## STUDY TITLE: School Determinants of Teaching Effectiveness (SUEK)

**Why was it conducted?**

SUEK is a longitudinal study, whose aim it is to identify the key school factors that determine teaching effectiveness in primary schools.

**When was it conducted?**

Stage 1 of the study started in the second half of 2010 and the last stage 7 was completed in October 2014.

**Who was the subject?**

The main studied population was identified as students who attended third grade of primary schools in 2010/2011. The sampled group of students was surveyed at the subsequent stages of the study. At stage 1, the participants were students, their parents, as well as teachers and school principals from 180 primary schools.

**How was it conducted?**

During the study, at various stages, numerous research tools were used, targeted at all groups of respondents. Students solved tests of school achievement, psychological tests, including an IQ test, as well as surveys concerning learning at school. The parents were asked to fill in a series of questionnaires concerning the situation of their households and various aspects of education of their children. The teachers, both early education teachers and those teaching grades 4-6, completed surveys concerning working in the profession and various practices and beliefs related to teaching. Principals constituted a source of information about various structural characteristics of the schools. One of the stages consisted in observing a series of lessons of Polish and mathematics in the studied classes at the level of fifth grade.

**Who is responsible for the study?**

The study of school determinants of teaching effectiveness is a research project implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed by the ESF.

**Source:**

Instytut Badań Edukacyjnych (2012). *Szkolne, psychologiczne i społeczne uwarunkowania wyników nauczania na I etapie edukacyjnym. Raport na podstawie fazy wstępnej ogólnopolskiego badania podłużnego Szkolnych Uwarunkowań Efektywności Kształcenia*. Warszawa: IBE. Unpublished report.

**STUDY TITLE: Six and Seven-Year Olds Entering School**

**Why was it conducted?**

The aim of the study was to estimate the differences in knowledge and cognitive competences of 6 and 7 year old children, depending on the educational paths selected for them, as well as estimation of the dynamics of development of knowledge and cognitive, social and emotional competences among 6 and 7-year-olds, depending on the educational paths selected for them. The performed analyses will be conducted taking into account contextual variables, such as the child's family situation, the socio-economic status of the child's family, equipment in the child's home, the child's early education, the causes of the decision made concerning sending the child to grade one/zero at school/grade zero at preschool, the child's health status.

**When was it conducted?**

The study six and seven-year olds entering school was a year-long, longitudinal study, carried out in 2011-2012.

**Who was the subject?**

2861 children and guardians participated in the study.

**How was it conducted?**

Questionnaires for parents and/or guardians of the children were carried out by surveyors with the CAPI technique.

**Who is responsible for the study?**

BThe study was implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed by the ESF.

**Source:**

IBE (2014). *Badanie 6- i 7-latków na starcie szkolnym. Raport z badań*. Warszawa: Instytut Badań Edukacyjnych.

## STUDY TITLE: The Study of Novice Teachers

**Why was it conducted?**

The study concerned novice teachers and was implemented at the Educational Research Institute in 2010. In particular, it focused on the degree of adaptation and professional preparation of the teachers for working at school and their strengths and weaknesses at the point of entry into the profession.

**When was it conducted?**

Individual in-depth interviews were carried out in May and June 2011.

**Who was the subject?**

76 individual interviews were conducted with novice teachers and 45 – with school principals, in order to supplement data: 15 – with teachers with greater seniority and 15 – with students.

**How was it conducted?**

The study was of qualitative nature and was performed with the use of individual in-depth interviews (IDI).

**Who is responsible for the study?**

The study was carried out at the Educational Research Institute under the project "Education Enthusiasts", co-financed from the ESF.

**Source:**

Walczak, D. (2012). *Początkujący nauczyciele. Raport z badania jakościowego.* Warszawa: IBE

## OTHER DATA SOURCES

Besides the aforementioned studies, data from the Central Statistical Office (especially Rocznik Statystyczny Edukacji Oświata i Wychowanie 2012/2013) were used when preparing this part of the report.

When writing the report, there were also used data coming from Superintendents of Schools Offices, offices responsible mostly for supervision over education and implementation of the state educational policy subordinate to the voivodes, whose functioning is regulated by the acts of the educational system (Journal of Laws of 2004, no. 356, item 2572 as amended), the Teacher's Charter (Journal of Laws of 2006 no. 97, item 674 as amended).

Another data source used was the Educational Information System[81]. The Educational Information System (SIO) is a database, whose existence is regulated by the act on SIO (Journal of Laws of 2011, no. 139, item 814 as amended) and Regulation of the Minister of National Education (Journal of Laws of 2012, item 957).

At the SIO, there is gathered, among other things, information about schools and care and educational institutions, their equipment, areas and forms of operation (vocational training, teaching mode, distributed meals), students (psychological and social assistance, accidents), and finally teachers (education, forms of advancement, salaries).

[81] The authors would like to thank Jacek Szejda, Piotr Zielonka and Mateusz Pawłowski for their assistance in processing the SIO data..

# PART III
# Portraits of teachers of selected subjects

## Polish language teachers

**STUDY TITLE: Teaching Polish Literature and Language under the New Core Curriculum**

### Region I

**1. Territorial scope:**

provinces: warmińsko-mazurskie, pomorskie, kujawsko-pomorskie, zachodniopomorskie, podlaskie.

**2. When:**

19 November 2012 – 9 January 2013.

**3. Quantitative research:**

60 sampled lower secondary schools; 5475 student questionnaires (2716 girls and 2759 boys); survey with 5180 parents of students participating in the study; survey with 157 Polish language teachers; survey with 59 principals; survey with 60 teacher-librarians.

**4. Qualitative research:**

10 public lower secondary schools; 151 non-participatory observations; 30 FGIs with students (10 in grade one classes, 10 in grade two classes; 10 in grade three classes); individual in-depth interviews within two modules (72 IDIs in total) with teachers teaching Polish language in the classes selected for the study on a regular basis; 10 FGIs with teams of Polish teachers (1 FGI per school); survey with officials from education departments; desk research.

### Region II

**1. Territorial scope:**

provinces: lubuskie, wielkopolskie, dolnośląskie, opolskie, śląskie, łodzkie.

**2. When:**

18 February – 15 March 2013.

**3. Quantitative research:**

60 sampled lower secondary schools; 6183 student questionnaires (3105 girls and 3078 boys); surveys with 5805 parents of students participating in the study; survey with 157 Polish language teachers; survey with 59 principals; survey with 60 teacher-librarians.

**4. Qualitative research:**

10 public lower secondary schools; 150 non-participatory observations; 30 MGs and 60 IDIs with students; 27 individual in-depth interviews with Polish language teachers in the classes selected for the study on a regular basis. IDIs with teachers were carried out after non-participatory observations, along with other elements of the qualitative study; they were carried out with teachers, whose lessons had been observed.

In each school, one interview with the team of Polish language teachers was carried out; in total, there were 10 focused group interviews carried out. 39 Polish language teachers participated in the study. All Polish language teachers from a given school were invited to participate in the study; in each school, one IDI with the principal was carried out; desk research.

### Region III

**1. Territorial scope:**

provinces: mazowieckie, lubelskie, świętokrzyskie, podkarpackie, małopolskie.

**2. When:**

5 November 2012 – 1 February 2013.

**3. Quantitative research:**

60 sampled lower secondary schools; 5228 questionnaires filled in by students; 5228 questionnaires received from parents; 163 questionnaires from Polish language teachers; 72 questionnaires from teacher-librarians; 59 questionnaires filled in by school principals.

**4. Qualitative research:**

10 public lower secondary schools; non-participatory observations of 90 lessons of Polish; 29 individual in-depth interviews with teachers; 180 individual in-depth interviews with students; 14 individual in-depth interviews with psychologists and counsellors; 10 focused group interviews with teachers; 30 focused group interviews with students; analysis of the school websites, and the WebQuest educational project was implemented in each of them, covering the total of 217 students.

The study was implemented under the project "Education Enthusiasts", co-financed by the ESF..

**STUDY TITLE: Assessment of Lower Secondary School Students Competences (Polish language)**

**Why was it conducted?**

The study was carried out during assessment of the knowledge and skills of grade three lower secondary school students, prepared by the Central Examination Board and regional examination boards. Gathered and analysed students' results, as well as opinions of students and teachers on the difficulty of the tasks used in the study contributes to the development of teaching tools checking the skills related to the core curriculum.

**When was it conducted?**

The assessment for Polish language was carried out on 13 November 2012.

**Who was the subject?**

82 randomly sampled schools participated in the study. It covered third grade lower secondary school students.

**How was it conducted?**

The test in Polish language used on the Assessment was composed of problems focused around three areas of requirements described by the Polish language core curriculum for lower secondary schools: reading comprehension and use of information included, analysis and interpretation of cultural texts, producing statements.
The test included 22 tasks. Twenty of them were selected-response items (mostly multiple choice questions) and one was a constructed-response item, requiring a short written answer. The basis for those tasks were four cultural texts.

In addition, students were supposed to write an argumentative essay on the topic: "*Why do you think contemporary artists like to refer in their works to the traditional folk tale, myths and legends? Present you opinion in the form of an argumentative essay. Identify examples from literature, film or advertisement*".

**Who is responsible for the study?**

The study was implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed from the ESF.

**STUDY TITLE: Programme International Student Assessment (PISA) in the OECD. Study results from 2006, 2009, and 2012 in Poland**

**Why was it conducted?**

The aim of the study was to check how 15-year-olds at the end of compulsory school education are prepared for further educational career, the requirements of the labour market and adult life.

**When was it conducted?**

The study was carried out in 2006, 2009, and 2012.

**Who was the subject?**

15 year old students were surveyed. In 2006, 6119 students, including 5978 lower secondary school students participated in the study; in 2009 – 5891 students, including 5862 lower secondary school students; and in 2012 – 4607 students, including 4594 lower secondary school students.

**How was it conducted?**

The study was quantitative and international in (two-tier random sample: stratified sample of schools, a simple random sample of students). Research tools: cognitive and contextual tests.

The study was financed by the MNE.

**More about the study:**

http://www.ifispan.waw.pl/index.php?lang=pl&m=page&pg_id=98

# Mathematics teachers

**STUDY TITLE: School of Independent Thinking (SSM)**

**Why was it conducted?**

The aim of the study was to assess complex skills in the field of Polish language and mathematics of students at the II, II and IV stages of education and supporting the development of those skills.

**When was it conducted?**

Pilot study was carried out between 16 May and 30 September 2011 and the main study was carried out between 21 November and 20 December 2011.

**Who was the subject?**

The pilot study covered students of grades 4 and 5 from 10 primary schools and students of grade 3 from 10 lower secondary schools. In addition, one meeting of experts (panel) with mathematics teachers was organised. Five mathematics teachers taking part in the meeting worked in lower secondary schools and five in primary schools.

The main study covered: grade 4 primary school students (1836 students), grade 1 lower secondary school students (2036 students), grade 1 and last grade students of upper secondary schools (3489 students and 3004 students respectively), parents and carers of grade 4 primary schools (1836 people), Polish and mathematics teachers teaching in the selected grades (500 teachers of each subject, including mathematics teachers teaching in: 100 – primary schools, 100 – lower secondary schools,120 – general upper secondary schools, 100 – technical and specialised upper secondary schools, 80 – basic vocational schools) and principals of the selected schools (350 people).

**How was it conducted?**

The sampling of schools was random. Based on data from the Educational Information System, schools were sampled in strata in terms of province, school type (primary school, lower secondary school, general, technical and specialised upper secondary schools, basic vocational school), size of locality, size of school.
Students filled in test booklets, which contained tasks examining the students' level of complex skills and PAPI questionnaires (a paper questionnaire). Parents of grade 4 students filled in the PAPI questionnaires. Principals of the examined schools, teachers of Polish and mathematics teaching the classes sampled for the study were covered by a CAWI survey (computer assisted interview with the use of a website). Surveys for students were differentiated in terms of the educational stage, yet most questions overlapped, which enabled comparisons between stages. The survey included questions concerning parents' education, family situation, ways of supporting child development. The Teacher Questionnaire concerned issues related to organisation of course of teaching Polish and mathematics, as well as assessment of the students' skills level. The School Principal Questionnaire concerned issues related to organisation of school work (curricular and extracurricular), characteristics of the school environment and characteristics of the school operation.

**Who is responsible for the study?**

The study was implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed by the ESF.

**STUDY TITLE: Teaching of Mathematics in Lower Secondary School (NMG)**

**Why was it conducted?**

The aim of the study was to assess the state of implementation of the core curriculum in lower secondary school in the scope of the requirements, mainly general ones, concerning mathematics.

**When was it conducted?**

The study was carried out between 12 March and 11 June 2012.

**Who was the subject?**

20 lower secondary schools from four provinces: pomorskie, mazowieckie, dolnośląskie and podlaskie were sampled. The sample contained five schools located: in rural areas, in towns with up to 20,000 population, cities with 20,000-100,000 population and cities with over 100,000 population. It contained both schools with poor learning outcomes in the scope of mathematics (measured with the Educational Added Value (EWD) indicator), and schools that achieved high learning outcomes. In each of the 20 lower secondary schools, one second grade class with the mathematics teacher conducting lessons in the class on a regular basis was sampled for the study. 405 students participated in the test part, and 365 students were selected from those to take part in the questionnaire part and group interviews.

**How was it conducted?**

Various research methods and techniques were applied. Information came from three sources: teachers, students, and parents. Students were surveyed by means of the auditorium survey, group interviews and mathematics tests; teachers – with the use of lesson observations and individual interviews; parents – with the use of individual interviews. Surveys of students, teachers and parents concerned the same areas, which enabled looking at the analysed problems from different points of view. In each of the classes, the following actions were carried out: observation of four subsequent mathematics lessons; surveying teachers (a short questionnaire after the first observed mathematics lesson); individual interviews; mathematics test; student survey (auditorium survey; group interviews) – two group interviews in total (one with boys, one with girls from the class selected for the study); parent survey (individual interviews – 3 interviews in each voivodeship). 80 observations of mathematics lessons in lower secondary schools (4 lessons per teacher) were performed. After each observed lesson, the observer filled in a lesson observation form on the basis of their notes made during the lesson, which contained, among others, all questions asked by students and the teacher, students' replies, records of the problems solved in the classroom and assigned as homework, as well as detailed description of the lesson, taking into account the important areas covered by the form. The lesson observation form covered three areas of observation: the teacher's attitude (substantive knowledge, style of work, way of incorporating the core curriculum into the methods of work, way of introducing new and reminding known mathematical contents), the course of the lesson (organisation of work at the lesson, communication between students and the teacher and communication between students, assigning and checking assigned homework), students' attitude at the mathematics lessons (motivation for studying and working at the lessons, interest in the lesson, freedom in asking questions to the teacher and expressing opinions on mathematical topics).

**Who is responsible for the study?**

The study was implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed by the ESF.

## STUDY TITLE: Professional Development Needs of Early Education and Mathematics Teachers (PNM)[83]

### Why was it conducted?

The aim of the study was to diagnose the areas, where early years or mathematics teachers need support on the basis of declarations of active early years and mathematics teachers, and measurement of their mathematics and pedagogical competences.

### When was it conducted?

A pilot study was carried out between 7 May and 30 June 2012, and the main study between 16 October 2013 and 24 January 2014.

### Who was the subject?

Both in the pilot, and in the main study, the selection of teachers to the sample was random. Due to the fact that the existing teacher databases were incomplete and often contained outdated data, two-tier sampling of teachers was employed, in strata concerning the stage, at which a given teacher thought. In the pilot study, first 900 schools from the mazowieckie and the lubelskie provinces were selected, with a breakdown into educational stages I, II and III. Then, based on the Kish grid and alphabetical lists of teachers, 300 early years teachers, 300 mathematics teachers teaching in grades 4-6 of primary schools, and 300 mathematics teachers teaching in lower secondary schools were sampled. In the end, 855 active teachers participated in the pilot study: 285 early years teachers, 283 mathematics teachers teaching in grades 4-6 and 287 lower secondary school teachers. For the main study, 900 schools from the whole Poland were sampled, broken down into strata of educational stages I, II and III. Then, just like in the pilot study, based on the Kish grid, 1200 teachers were selected (in each stratum, one from 200 schools and 2 from 100 schools). In addition, 90 teachers (30 from each educational stage) were selected to participate in individual in-depth interviews (IDIs).

### How was it conducted?

In the pilot study, the total of six test booklets and two questionnaires were used, for early years teachers and mathematics teachers respectively. In the main study, nine test booklets and two questionnaires were used. The problems in each booklet concerned the following areas: knowledge of the core curriculum, mathematical knowledge and skills of the teachers, preparation and conducting the teaching process. In each of the booklets, most tasks concerned the stage, at which a given teacher taught, but there also occurred tasks from lower or higher stages. The questionnaire items for mathematics teachers concerned the following areas: paths to the profession of mathematics teacher, professional development, assessment of teacher performance and feedback on the effects of the teacher's work, mathematics lessons. In the in-depth interviews, conducted following scenarios, the following issues were addressed: forms and methods of working with students applied by the teacher, ways of communicating with students, implementation of the core curriculum of 2008 (with special attention paid to general requirements), creation and use of teaching aids during the lesson, the teacher's needs in terms of professional development, increasing competences by the teacher, working with gifted students and students with learning difficulties, professional successes and failures of teachers, attitude to the changes that occur in the educational system.

[83] In this report, the results of questionnaire surveys of the pilot study and preliminary results of in-depth interviews of the main study are used. The results of the main study had not been developed yet when this report was written

**Who is responsible for the study?**

The study was implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed by the ESF..

## Foreign language teachers

**STUDY TITLE: European Survey on Language Competences (ESLC)**

**Objectives of the ESLC:**

- to measure the knowledge of foreign languages among European teenagers in a way enabling comparison of the level of skills of learners of various foreign languages within different educational systems,
- to collect contextual data on learning and teaching of foreign languages in specific countries participating in the study,
- to develop the European Indicator of Language Competence (EILC).

**Features of the ESLC**

- measurement of the knowledge of the two most frequently taught foreign languages in each country, out of: English, French, Spanish, German and Italian,
- Results of language tests expressed with reference to the levels: A1, A2, B1, B2 of the Common European Framework of Reference for Languages,
- measurement in the area of three skills: reading comprehension, listening comprehension and writing in the foreign language; the student took tests to check two of the three studied language skills,
- a questionnaire survey concerning the context of learning and teaching of foreign languages among students, language teachers and school principals,
- participants: 16 countries/language communities – Belgium (separately: the Flemish country, the Francophone country, the German-speaking country), Bulgaria, Croatia, England, Estonia, France, Greece, Malta, the Netherlands, Poland, Portugal, Slovenia, Spain, Sweden.

**ESLC in Poland**

- knowledge of English and German was studied,
- the total of 3324 students of grade 3 of lower secondary schools took part in the study,
- the questionnaire was filled in by 1764 students of English and 1560 students of German; 245 teachers of English and 154 teachers of German, 124 principals from 146 lower secondary schools.

The Polish part of the study was implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed by the ESF and the MNE.

**STUDY TITLE: Learning and Teaching Foreign Languages in Lower Secondary Schools Study (BUNJO)**

**Objectives of the BUNJO study:**

- to track the changes at the level of English language skills of lower secondary school students,
- to identify the factors that contribute to acquiring skills in the scope of English: at home, at school, and in the nearest surrounding,
- to observe the implementation of the provisions of the new core curriculum.

**Features of the BUNJO study:**

- a longitudinal study, covering 3 years of studying in the lower secondary school of students of English in accordance with core curriculum III.1 (continuation from primary school).
- implemented on a representative sample of 120 lower secondary schools; the same 3 groups of teaching English (ca. 4500 students) were surveyed in each school over 3 years, English teachers in the schools, school principals.

**Stage I (2012)**

measurement of the students' skills in English:

- tests on grammar structures and vocabulary,

study of the context of learning and teaching English:

- a questionnaire survey of students, English teachers and principals, there participated 4316 students (questionnaire 1), 4343 students (questionnaire 2), 380 teachers, 120 principals,
- individual interviews with selected students, teachers, and principals; there participated 480 students, 301 teachers, and 115 principals.
- observations performed in 40 schools.

**Stage II (2013):**

measurement of the students' skills in English:

- tests on listening comprehension, reading comprehension, vocabulary, grammar structures and language functions, writing.

**Stage III (2014):**

measurement of the students' skills in English:

- tests on listening comprehension, reading comprehension, vocabulary, grammar structures and language functions, writing,

study of the context of learning and teaching English:

- a questionnaire survey of students, English teachers and principals.

The study was implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed by the ESF.

**STUDY TITLE: English Teaching Effectiveness in Primary Schools (BENJA)**

**Objectives of the BENJA study:**

- to track the changes at the students' level of English language skills,
- to identify the factors that contribute to acquiring skills in the scope of English: at home, at school, and in the nearest surrounding,
- to observe the implementation of the provisions of the new core curriculum.

**Features of the BENJA study:**

- a longitudinal study, implemented within the study of School determinants of effectiveness of education (SUEK) (see the table on p. 279) and covering educational stages I and II.
- implemented on a representative sample of 178 primary schools, in each of the schools covering school principals, English teachers, and students (ca. 4700) and their parents.

**Stage I (2011):**

measurement of skills in English of students after grade 3,
study of the context of learning and teaching of English:

- survey questionnaires of 258 English teachers (76,5% with a degree in English Studies, around 10% with preparation for teaching English and early years education, and 13% being in the course of acquiring qualifications or holding other qualifications,
- a questionnaire survey of principals and parents of students from grade 3.

**Stage II (2014):**

measurement of the students' skills in English:

- tests on listening comprehension, reading comprehension, vocabulary, grammar structures and language functions, writing.

**Stage III (2014):**

measurement of the students' skills in English at the end of grade 6,
study of the context of learning and teaching English:

- a questionnaire survey of teachers, principals, students and parents,
- observation study in 42 schools.

The study was implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed by the ESF.

## History teachers

**STUDY TITLE: Implementation of New History Core Curriculum in Lower Secondary Schools (2011)**

**Objectives of the study:**

to assess the state of implementation of the new core curriculum for history at the third educational stage through diagnosis:

- if teachers know the provisions of the core curriculum?
- how the content of the document affected the teachers' everyday work?
- how the change in the core curriculum affected the assessment system?
- what school and non-school factors determined implementation of the core curriculum?
- what were the strengths and weaknesses of teaching history in lower secondary schools?

**Features of the study:**

- the study was qualitative in nature,
- the sample was of purposive, there participated 20 lower secondary schools with different (usually high) level of EAV, located in different regions of Poland and in different social environment,
- during the study, two history lessons of one teacher in each studied school were observed (80 observations in total),
- there were carried out 20 individual interviews with teachers, 8 focused interviews with participation of students and a test of historical skills in the observed classes.

The study was implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed by the ESF.

**STUDY TITLE: Good Practice in History Teaching (2012)**

**Objectives of the study:**

- to collect, develop and publish examples of good practices,
- to recognise the way in which they were created,
- to develop the Code of Good Practice.

**Features of the study:**

- the study was qualitative,
- the sample was composed of laureates of the Good History Lesson competition, organised by the History Department of the Educational Research Institute in spring of 2012,
- the competition for the best history lesson ideas was addressed to lower secondary school teachers.
- 18 individual interviews were carried out.

The study was implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed by the ESF.

## Science teachers

**STUDY TITLE: Laboratory of Thinking. Diagnosis of Science Education in Poland (LM)**

**Objectives of the study:**

- to diagnose the level of knowledge and skills in science subjects of lower secondary school leavers, with particular emphasis placed on reasoning skills, including scientific reasoning,
- to study the impact of the changes introduced into the core curriculum on the level of students' knowledge and skills.
- to develop tools - selected-response test items, validly and reliably checking the ability to think scientifically,
- to develop recommendations for the education system, containing proposals of improvements of the compulsory scientific education.

**Features of the study:**

- quantitative, national, cyclical.

**Implementation dates:**

2011-2014, September-October of each year.

**Sample description:**

- grade one students of upper secondary schools (general and technical upper secondary schools, vocational schools),
- in 2011 – 7689 students, in 2012 – 7376 students – random, stratified and weighted sample.

**Research tools:**

a test composed of 208 selected-response items (52 items in biology, chemistry, physics and geography), student questionnaire (27 items in 2011 and 28 items in 2012).

**More about the study:**

http://eduentuzjasci.pl/pl/badania

The study was implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed by the ESF.

**STUDY TITLE: Core Curriculum and Subject Teaching Methods Development in the Opinions of Teachers, Head Teachers and Students (FGI)**

**Objectives of the study:**

- to identify factors affecting the quality of teaching in the area of science subjects,
- to discover the degree of familiarity with the new core curriculum and the attitudes of teachers and head teachers with respect to it,
- to identify the constraints that hindering implementation of the provisions of the new core curriculum for science subjects.

**Features of the study:**

- qualitative, national.

**Implementation dates:**

2010

**Sample description:**

- science teachers in lower secondary schools, lower and upper secondary school students interested in science, principals of both types of schools, the total of 10 FGIs with teachers (80 teachers), 6 FGIs with students (48 students),
- purposive, stratified sample.

**Research tools:**

- focused group interview (FGI) in extended form (the time of interview was 150 minutes),
- individual in-depth interviews (IDI).

**More about the study:**

http://eduentuzjasci.pl/pl/badania

The study was implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed by the ESF.

**STUDY TITLE: Good Practice in Non-formal Science Education. Non-Formal Science Classes Survey (PEP)**

**Objectives of the study:**

- assessment of the degree, to which the offer of science classes of non-formal education institutions can contribute to the formation and development of the scientific reasoning ability.

**Features of the study:**

- qualitative, national.

**Implementation dates:**

2011–2012

**Sample description:**

- non-formal science education institutions selected for the study based on criteria,
- 89 teaching and administrative employees from 50 institutions.

**Research tools:**

- Individual in-depth interview (IDI)[84].

**More about the study:**

http://eduentuzjasci.pl/pl/badania
http://eduentuzjasci.pl/images/stories/publikacje/ibe-raport-dobre-praktyki-w-npp.pdf

The study was implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed by the ESF.

**STUDY TITLE: Science Teachers' Need for Support of Teaching with Scientific Method (DPNP)**

**Objectives of the study:**

- to diagnose the needs of science teachers in primary schools related to the application of the scientific inquiry.
- to diagnose the methods that make teaching science with the use of scientific inquiry difficult.

**Features of the study:**

- quantitative, national.

**Implementation dates:**

2013

**Sample description:**

- 375 teachers of nature from 300 primary schools,
- random sample, stratified.

**Research tools:**

- website survey questionnaire.

[84] Other tools were also used in the study (student and teacher questionnaires), but the report only includes data from IDI..

**More about the study:**

http://eduentuzjasci.pl/pl/badania

The study was implemented by the Educational Research Institute under the project "Education Enthusiasts", co-financed by the ESF..

**STUDY TITLE: Preliminary Assessment of Science Education based on Interviews with Lower Secondary and Primary School Teachers (IFiS PAN)**

**Objectives of the study:**

- description of the practices of teaching of science subjects in primary, lower and upper secondary schools.
- Identification of examples of teachers' work which would contribute to the development of students' complex skills necessary for further education and adult life, in particular scientific reasoning accompanying the method of experimentation.

**Features of the study:**

- qualitative, national.

**Implementation dates:**

2008

**Sample description:**

- 134 teachers of science subjects from primary, lower and upper secondary schools.

**Research tools:**

- In-depth interview, semi-standard.

**More about the study:**

Unpublished report from Institute of Philosophy and Sociology of the Polish Academy of Sciences (IFiS PAN), submitted to the Central Examination Board.

**STUDY TITLE: Study of Curricula for Mathematics, Science and Technology in European Countries within a European Project (SECURE)**

**Objectives of the study:**

- • to study and analyse the factual state of mathematics, science and technology (MST) curricula, and implementing them in 10 European countries (in Poland, among others).
- • to prepare recommendations for the European Union based on the existing factual state in order to start a discussion concerning balancing in the teaching MST subjects of the needs of future scientists and the remaining part of the knowledge-based society (including the needs from the scope of basic scientific and mathematical education).

**Features of the study:**

- quantitative, covering public and community schools from cities and rural areas in the małopolskie province. .

**Implementation dates:**

1 November 2010 – 30 October 2013 (the main study in the school year 2011/2012).

**Sample description:**

- 60 classes from randomly selected kindergartens, primary and lower secondary schools from the małopolskie poivodeship (including 15 classes of students aged 13),
- 897 students aged 5, 8, 11, and 13, including 285 students aged 13).
- 133 teachers of science subjects (nature, biology, chemistry, physics, and geography) and technology.

**Research tools:**

- age-adjusted questionnaires for students and questionnaires for teachers.

**More about the study:**

http://www.secure-project.eu/poland i http://www.secure-project.eu/

**STUDY TITLE: Programme for International Student Assessment (PISA) in the OECD. Results for the 2006 edition in Poland**

**Objectives of the study:**

- • to examine how 15-year-olds at the end of compulsory education are prepared for further educational career, the requirements of the labour market and adult life.

**Features of the study:**

- quantitative, international.

**Implementation dates:**

2006

**Sample description:**

- two-tier random sample (stratified sample of schools, simple random sample of students),
- 5978 students aged 15 from 170 lower secondary schools.

**Research tools:**

- cognitive and contextual tests.

The study was financed by the MNE.

**More about the study:**

http://www.oecd.org/pisa/

**STUDY TITLE: Monitoring of the Pre-school and General Education Core Curriculum Implementation in the School Year 2011/2012, Centre for Education Development (ORE 2012)**

**Objectives of the study:**

- to study the way in which teachers familiarise themselves with the core curriculum.
- to monitor implementation of the tasks defined in the core curriculum (such as teaching methods and aids used by teachers to implement the core curriculum).

**Features of the study:**

- quantitative, national.

**Implementation dates:**

2011–2012

**Sample description:**

- teachers of grades 1 and 3 from 484 lower secondary schools, recommended by the superintendent of schools,
- public lower secondary schools constituted 94.7% of the sample, non-public ones 5.3%.
- the study covered a representative group of schools from various regions of Poland and localities of differing sizes.

**Research tools:**

- • survey questionnaires for teachers published on the web platform Monitorowanie Wdrażania Podstawy Programowej (Monitoring of Core Curriculum Implementation).

**More about the study:**

„Informacja o wynikach Monitorowania wdrażania podstawy programowej wychowania przedszkolnego i kształcenia ogólnego w roku szkolnym 2011/2012", Ośrodek Rozwoju Edukacji (ORE), http://www.ore.edu.pl/

**STUDY TITLE: Factors Influencing Science and Mathematics Teachers' Effectiveness, Śniadecki College – Innovative Science Education Programme (KŚ)**

**Objectives of the study:**

- to assess the role of the factors that influence effectiveness of teacher's work with students.
- to examine the factors that determine the attitude of teachers against the existing model of organisation of education, what the hierarchy of goals of learning and formation among teachers is, what the level of use of information and communication technologies in the teaching process is.

**Features of the study:**

- quantitative, national.

**Implementation dates:**

2011

**Sample description:**

- 1213 questionnaires filled in by teachers of science and mathematics, teaching grade 1 of general upper secondary schools, were qualified for the study.

**Research tools:**

- anonymous web survey (CAWI).

**More about the study:**

The study was implemented under the project "Kolegium Śniadeckich – innovative programme of teaching science" by the Polish Foundation for IT Education (Ogólnopolska Fundacja Edukacji Komputerowej, OFEK, Poznań Branch) in partnership with Adam Mickiewicz University in Poznań (UAM), under the scientific supervision of Professor Stanisław Dylak, Ph.D. More information can be found on the website: http://www.kolegiumsniadeckich.pl/.

Ubermanowicz, S., Kokociński, M. (2011). *Czynniki kształtujące efektywność pracy nauczycieli matematyki i przedmiotów przyrodniczych. Raport z badań ankietowych postaw nauczycieli, partycypacji uczniów oraz wykorzystywania mediów w realizacji przedmiotów: matematyka, geografia, chemia, fizyka i biologia w klasach I liceów ogólnokształcących.* Poznań: OFEK, UAM.

# Annex 2: Legal Acts

## Legal acts related to education – 2013

| |
|---|
| Act of 13 June 2013 on amending the act on the educational system and some other acts (Journal of Laws of 2013, item 827) |
| Act of 30 August 2013 on amending the act on the educational system and the act amending the educational system and amending some other acts (Journal of Laws of 2013, item 1265) |
| Act of 27 September 2013 amending the act on the educational system (Journal of Laws of 2013, item 1317) |
| Act of 6 December 2013 amending the act on the educational system and some other acts (Journal of Laws of 2014, item 7) |
| Regulation of the Minister of National Education of 1 February 2013 on the detailed principles of operation of public psychological and pedagogical counselling centres, including public specialist centres |
| Regulation of the Minister of National Education of 8 February 2013 amending the regulation on organisation of superintendent of school offices and the principles of creating their regional offices |
| Agreement between the Evangelical Brotherhood Society in the Republic of Poland and the Minister of National Education of 14 February 2013 on the professional qualifications required from teachers of religion |
| Regulation of the Minister of National Education of 28 February 2013 on the detailed principles of operation of public pedagogical libraries |
| Rozporządzenie Ministra Edukacji Narodowej z dnia 1 marca 2013 r. w sprawie ramowego programu szkolenia kandydatów na ekspertów wchodzących w skład komisji egzaminacyjnych i kwalifikacyjnych dla nauczycieli ubiegających się o awans na stopień zawodowy, sposobu prowadzenia listy ekspertów oraz trybu wpisywania i skreślania ekspertów z listy |
| Regulation of the Minister of National Education of 1 March 2013 on obtaining promotion in professional rank by teachers |
| Regulation of the Minister of National Education of 5 March 2013 amending the regulation on certificates, state diplomas and other official school documents |
| Regulation of the Minister of National Education of 8 March 2013 on organisation of teaching and the conditions and forms of implementing special care and formation activities in special kindergartens and schools organised in health care institutions and social assistance institutions |
| Regulation of the Minister of National Education of 23 April 2013 on the conditions and manner of organising rehabilitation and educational activities for children and teenagers with severe metal disability |

| |
|---|
| Regulation of the Minister of National Education of 25 April 2013 amending the regulation on conditions and way of assessing, classifying and promoting students and course participants, and on carrying out tests and examinations in public schools (April 2013) |
| Regulation of the Minister of National Education of 30 April 2013 on the principles of provision and organisation of psychological and pedagogical counselling in public kindergartens, schools and institutions |
| Regulation of the Minister of National Education of 10 May 2013 amending the regulation on pedagogical supervision |
| Regulation of the Minister of National Education of 1 August 2013 amending the regulation on the value of minimum rates of basic salary of teachers, the general conditions of granting bonuses to the basic salary and remuneration for working on holidays |
| Regulation of the Minister of National Education of 2 August 2013 amending the regulation on the conditions of organisation of education, formation and care for children and teenagers with disabilities and socially maladjusted in special kindergartens, schools and classes, as well as institutions |
| Regulation of the Minister of National Education of 2 August 2013 amending the regulation on the conditions of organisation of education, formation and care for children and teenagers with disabilities and socially maladjusted in general and integrated kindergartens, schools and classes |
| Regulation of the Minister of National Education of 13 August 2013 on providing gminas with designated subsidies from the state budget for subsidising tasks in the scope of preschool education |
| Regulation of the Minister of National Education of 11 October 2013 on organisation of early support for child development |
| Regulation of the Minister of National Education of 18 December 2013 on the method of dividing a part of the general educational subsidy for territorial government units in 2014 |
| Regulation of the Minister of National Education of 20 December 2013 amending the regulation on the rates, detailed principles and procedure of granting and settlement of specific subsidies to school textbooks |

## Legal acts related to higher education – 2013

| |
|---|
| Regulation of the Minister of Science and Higher Education of 15 January 2013 on outstanding research awards and achievements in research and teaching guidance |
| Regulation of the Minister of Science and Higher Education of 20 February 2013 amending the regulation on the method of division of the state budget subsidy for public and non-public higher education institutions |
| Regulation of the Minister of Science and Higher Education of 1 March 2013 on ministerial awards for academic teachers |
| Regulation of the Minister of Science and Higher Education of 14 May 2013 on changing the name of the State Higher School of Vocational Education in Gniezno |
| Regulation of the Minister of Science and Higher Education of 17 May 2013 on the maximum amount of fees for a proceeding related to admission to studies in the academic year 2013/2014 |
| Regulation of the Minister of Science and Higher Education of 3 June 2013 amending the regulation on the way of division and procedure of submission of the specific subsidy for financing quality enhancing tasks from the state budget |
| Regulation of the Minister of Science and Higher Education of 19 November 2013 amending the regulation on the way and procedure of establishing cost intensity indicators for particular departments at first and second cycle day studies, integrated masters studies (item 1365) |
| Regulation of the Minister of Science and Higher Education of 11 December 2013 on the conditions of remunerating for work and granting other work-related allowances for employees of public higher education institutions |
| Regulation of the Minister of Science and Higher Education of 12 December 2013 on doctoral studies and doctoral scholarships |

# Bibliography


Armstrong, M. (2005). *Zarządzanie zasobami ludzkimi.* Kraków: Oficyna Ekonomiczna.

Aronson, E., Wilson, T.D. and Akert, R.M. (1997). *Psychologia społeczna: serce i umysł*. Poznań: Wydawnictwo Zysk i S-ka.

Babiańska, D., Bracisiewicz, J., Choińska-Mika, J. and Pawlicki, A. (2009). Komentarz do podstawy programowej przedmiotów historia oraz historia i społeczeństwo. W: *Podstawa programowa z komentarzami*, t. 4: *Edukacja historyczna i obywatelska w szkole podstawowej, gimnazjum i liceum (historia i społeczeństwo, historia, wiedza o społeczeństwie, podstawy przedsiębiorczości, ekonomia w praktyce, wychowanie do życia w rodzinie, etyka, filozofia)*. Warszawa, 54–68. http://www.womgorz.edu.pl/files/File/Doradztwo_metodyczne/Podstawa%20programowa%20z%20komentarzami.%20Edukacja%20historyczna%20i%20obywatelska.pdf [dostęp 28.11.2013]

Balacheff et al. (1993). Na czym polegają badania w dydaktyce matematyki i jakie są ich wyniki? (Materiały do dyskusji). *Dydaktyka Matematyki, 15*, 117–124.

Ball, D.L., Thames, M.H. and Phelps, G. (2008). Content knowledge for teaching. *Journal of Teacher Education*, *59* (5), 389–407.

Bandura, A. (1994). Self-efficacy. W: V. S. Ramachaudran (red.), *Encyclopedia of human behavior* (Vol. 4, pp. 71–81). New York: Academic Press. [Reprinted in H. Friedman (red.) (1998)., *Encyclopedia of mental health*. San Diego: Academic Press].

Bardziejewska, M., Brzezińska, A.,and Ziółkowska, B. (2003). *Zagrożenia rozwoju w okresie dorastania*. Poznań: Wydawnictwo Fundacji Humaniora.

Bartmiński, J. (2004). Tekstologia (lingwistyka tekstu). W: A. Mikołajczuk, J. Puzynina (red.), *Wiedza o języku polskim w zreformowanej szkole. Szkoła podstawowa, gimnazjum, szkoły ponadgimnazjalne*. Warszawa: Nowa Era, 29–54.

Baumert, J., Kunter, M., Blum, W., Brunner, M., Voss, T., Jordan, A., Klusmann, U., Krauss, S., Neubrand, M. and Tsai, Y. (2010). Teachers' mathematical knowledge, cognitive activation in the classroom and student progress. *American Educational Research Journal, 47*(1), 133–180.

BECKER (2013). *Badanie ekonomicznych uwarunkowań, celów i kierunków alokacji nakładów na edukację realizowanych przez podmioty publiczne i prywatne w Polsce.*

Becker, G.S. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. Chicago: University of Chicago Press.

Bernard, P. et al. (2012). Podstawy metodologii IBSE. W: *Nauczanie przedmiotów przyrodniczych kształtujące postawy i umiejętności badawcze uczniów*. Kraków: Wydział Chemii Uniwersytet Jagielloński.

Biedrzycki, K. (2012). Interpretacja – szkoła rozumienia. W: S.J. Żurek i A. Adamczuk-Stęplewska (red.), *Dydaktyka literatury i języka polskiego. Stan badań i perspektywy badawcze*. Lublin: Wydawnictwo KUL, 159–168.

Bielak, A (2008). Rola nauczyciela w kształtowaniu czytelniczej postawy uczniów (w świetle badań ankietowych). W: B. Myrdzik i L. Tymiakin (red.), *Teksty kultury w szkole. Nowe wyzwania i dylematy.* Lublin: Wydawnictwo UMCS, 27–46.

Bielska, J. (2011). Bariery psychiczne w nauce języka obcego. W: H. Komorowska (red.), *Nauka języka obcego w perspektywie ucznia*. Warszawa: Łośgraf.

Birch, A. (2012). *Psychologia rozwojowa w zarysie*. Warszawa: Wydawnictwo Naukowe PWN.

Boba, M. and Michlowicz, M. (2006). *Anatomia sukcesu dydaktyczno-wychowawczego wybranych szkół powiatu krośnieńskiego. Część humanistyczna*. Kraków. Pobrano z: http://www.oke.krakow.pl/inf/file-data/files/EWD_Krosno_biuletyn.pdf [dostęp 28.11.2013]

Bobiński, W. (2011). *Teksty w lustrze ekranu. Okołofilmowa strategia kształcenia literacko-kulturowego*. Kraków: Universitas.

Bolden, R. (2011). Distributed Leadership in Organizations: A Review of Theory and Research. *International Journal of Management Reviews, Vol. 13*, 251–269.

Borek, A. and Domerecka, A. (2013). Nauczyciele aktywizują, uczniowie się nudzą, czyli jak są zorganizowane procesy edukacyjne w polskich szkołach – analiza danych dotyczących wymagania „procesy edukacyjne są organizowane. W: G. Mazurkiewicz (red.), *Jakość edukacji. Dane i wnioski z ewaluacji zewnętrznych prowadzonych w latach 2010–2011*. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego, 81–109.

Borg, S. (2006). The distinctive characteristics of foreign language teachers. *Language Teaching Research*, 10, 3–31.

Bortnowski, S. (2005). *Przewodnik po sztuce uczenia literatury*. Warszawa: STENTOR.

Bortnowski, S. (2011). Czy naprawdę nowa metodyka? *Kwartalnik Edukacyjny, 2011*(3), 46–55.

Brophy, J. (2012). *Motywowanie uczniów do nauki*. Warszawa: Wydawnictwo Naukowe PWN.

Brzezińska, A.I., Kaliszewska-Czeremska, K., Matejczuk, J. and Urbańska, J. (2010). *Zadowolenie rodziców z przedszkola. Analiza wyników badań w Przedszkolu im. Krasnala Hałabały w Grodzisku Wielkopolskim.* Poznań: Instytut Psychologii Uniwersytetu im. Adama Mickiewicza w Poznaniu (maszynopis niepublikowany) (raport i ekspertyza wykonane na zlecenie burmistrza miasta i gminy Grodzisk Wielkopolski).

Budrewicz, Z. (2011). Przymioty polonisty. W: G. Różańska (red.), *Osoba nauczyciela: polonista przewodnikiem ucznia po meandrach wiedzy.* Słupsk: Instytut Naukowo-Wydawniczy „SPATIUM".

Bugajska-Jaszczołt, B. and Czajkowska, M. (2013). Komunikacja na zajęciach z edukacji matematycznej. *Problemy wczesnej edukacji,* Rok IX 2013, 4 (23), 39-50.

Cameron, L. (2001). *Teaching languages to young learners*. Cambridge: Cambridge University Press.

Card, D., Kramarz, F. and Lemieux, T. (1996). *Changes in the relative structure of wages and employment: A comparison of the United States, Canada, and France*. No. 5487. National Bureau of Economic Research.

CBOS (2012a). *Oceny instytucji publicznych.* Komunikat z badań BS/158/2012. Warszawa: Centrum Badania Opinii Publicznej.

CBOS (2012b). *Wizerunek nauczycieli.* Komunikat z badań BS/173/2012. Warszawa: Centrum Badania Opinii Publicznej.

CBOS (2013a). *Prestiż zawodów.* Komunikat z badań BS/164/2013. Warszawa: Centrum Badania Opinii Publicznej.

CBOS (2013b). *Wykształcenie ma znaczenie?.* Komunikat z badań BS/96/2013. Warszawa: Centrum Badania Opinii Publicznej.

CBOS (2013c). *Zadowolenie z pracy i jej oceny.* Komunikat z badań BS/10/2013. Warszawa: Centrum Badania Opinii Publicznej.

Choińska-Mika, J. (2012). Dlaczego reformujemy?, *Wiadomości Historyczne*, t. 55, nr 3, 24–27.

Choińska-Mika, J. et al. (2013). *Diagnoza kompetencji gimnazjalistów. Język polski. Raport z badania*. Warszawa: Instytut Badań Edukacyjnych.

Chorąży, E., Śliwińska-Konieczka, D. i Roszak, S. (2008). *Edukacja historyczna w szkole: teoria i praktyka*. Warszawa.

Chrząstowska, B. (1987). *Lektura i poetyka*. Warszawa: Wydawnictwa Szkolne i Pedagogiczne.

Chrząstowska, B. (red.) (1995). *Kompetencje szkolnego polonisty. Szkice i artykuły z metodyki*. Warszawa: WSiP.

Czajkowska, M. (2003). Mathematical Task as a Linguistic Message (students' interpretation of the author's intention). W: J. Novotná (red.), *International Symposium Elementary Maths Teaching* (SEMT'03). Praga, 51–56.

Czajkowska, M., Jasińska, A. and Sitek, M. (2010). *Kształcenie nauczycieli w Polsce. Wyniki międzynarodowego badania TEDS-M 2008.* Warszawa: Instytut Filozofii i Socjologii.

Czajkowska, M. (2013). Pomiar kompetencji nauczycieli matematyki. *Edukacja*, 1/2013, 73–88.

Czapiński, J. (2009). *Badania rodziców 2009. Przemoc i inne problemy w polskiej szkole w opinii rodziców.* Warszawa: Szkoła bez przemocy.

Czepulis-Rastenis, R. (1973). *Klassa umysłowa. Inteligencja Królestwa Polskiego 1832-1862.* Książka i Wiedza.

Czetwertyńska, G. (2006). *Ocenianie kształtujące w praktyce*. Warszawa: Centrum Edukacji Obywatelskiej.

Czołpińska, E. (2009). Możliwości finansowania szkół wyższych z budżetów jednostek samorządu terytorialnego. *Finanse Komunalne* 5/2009.

Davis, B. (2011). Mathematics teachers' subtle, complex disciplinary knowledge. *Education forum*. Pobrano z: www.sciencemag.org [dostęp: 25.11.2013].

Day, C. (2004). *Rozwój zawodowy nauczyciela. Uczenie się przez całe życie.* Gdańsk: Gdańskie Wydawnictwo Psychologiczne.

Dolata, R. et al.(2013). *Trafność metody edukacyjnej wartości dodanej dla gimnazjów*. Warszawa: Instytut Badań Edukacyjnych.

Domalewski, J. and Wasilewski, K. (red.) (2011). *Zmiany w edukacji: szkoła i jej społeczne otoczenie.* Toruń: Polskie Towarzystwo Socjologiczne.

Dörnyei, Z. (2005). *The psychology of the language learner: Individual differences in second language acquisition*. Mahwah, NJ: Lawrence Erlbaum.

Dörnyei, Z and Ushioda, E. (2011). *Teaching and researching motivation.* Harlow, England: Pearson Education.

Dyduchowa, A. (1988). *Metody kształcenia sprawności językowej. Projekt systemu, model podręcznika.* Kraków: Wydawnictwo Wyższej Szkoły Pedagogicznej.

Ellermeijer, T., Kędzierska, E., Maciejowska, I. and Odrowąż, E., Konsorcjum ESTABLISH (2013). Rola nauczyciela w szkole XXI wieku. W: I. Maciejowska i E. Odrowąż (red.), *Nauczanie przedmiotów przyrodniczych kształtujące postawy i umiejętności badawcze uczniów – część 2,* 48–56. Kraków: Wydział Chemii Uniwersytet Jagielloński.

Erikson, E. (2000). *Dzieciństwo i społeczeństwo*. Poznań: Dom Wydawniczy „Rebis".

European Commission (2007). *Science Education Now: A renewed pedagogy for the future of Europe* (The Rocard report). Brussels: EC.

Eurydice (2002). *Kluczowe problemy edukacji w Europie, tom 3. Zawód nauczyciela w Europie: Profil, wyzwania, kierunki zmian. Raport I. Kształcenie i początki pracy zawodowej. Poziom gimnazjum.* Warszawa: Fundacja Rozwoju Systemu Edukacji.

Eurydice (2011). *Key data on learning and innovation through ICT at school in Europe.* Bruksela: Europejskie Biuro Eurydice.

Eurydice (2012). *Key Data on Education in Europe 2012.* Bruksela: Education, Audiovisual and Culture Executive Agency. Pobrano z: http://eacea.ec.europa.eu/education/eurydice%20/documents/key_data_series/134EN.pdf

Eurydice, Komisja Europejska, EACEA (2013). *Kluczowe dane dotyczące nauczycieli i dyrektorów szkół w Europie*. Luksemburg: Urząd Publikacji Unii Europejskiej.

Even, R. (1990). Subject matter knowledge for teaching and the case of functions. *Educational Studies in Mathematics, 6*, 521–554.

Even, R. (1993). Subject-matter knowledge and pedagogical content knowledge: prospective secondary teachers and the function concept. *Journal for Research in Mathematics Education, 24*(2), 94–116.

Fazlagić, J. (2012). *Jakość szkoleń w oświacie.* Gniezno: Gnieźnieńska Szkoła Wyższa Millenium.

Federowicz, M. et al. (2006, 2009, 2013). *Program Międzynarodowej Oceny Umiejętności Uczniów*. Warszawa: Instytut Filozofii i Socjologii Polskiej Akademii Nauk.

Federowicz, M., Haman, J., Herczyński, J., Hernik, K., Krawczyk-Radwan, M., Malinowska, K., Pawłowski, M., Strawiński, P., Walczak, D. and Wichrowski, A. (2013). *Czas pracy i warunki pracy w relacjach nauczycieli. Raport tematyczny z badania*. Warszawa: Instytut Badań Edukacyjnych.

Federowicz, M. and Sitek, M. (red.) (2011). *Raport o stanie Edukacji 2010.* Warszawa: IBE.

Finkstein, A., Jurek, K. and Kozioł, J. (2009). *Wypowiedzi uczniowskie na egzaminie maturalnym z przedmiotów humanistycznych jako zjawisko społeczne* [PDF], Łódź. Pobrano z: http://www.komisja.pl/pobierz/badania/2009/jurek.pdf [dostęp 26.11.2013].

Fischer, J.M. and Taylor, J. (2012). Wspieranie zespołów nauczycieli w procesie podejmowania decyzji. W: G. Mazurkiewicz (red.). *Jakość edukacji. Różnorodne perspektywy*. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego.

Fiszbak, J. (2008). *O czytaniu lektur szkolnych – kilka myśli, co nienowe.* W: B. Myrdzik i L. Tymiakin (red.), *Teksty kultury w szkole. Nowe wyzwania i dylematy.* Lublin: Wydawnictwo UMCS, 11–26.

Freeman, R.B. (1995). Are your wages set in Beijing? *The Journal of Economic Perspectives* 9.3, 15–32.

Gajak-Toczek, M. (2007). *Świat emocji nauczyciela polonisty. Acta Universitatis Lodziensis. Folia Linguistica, 44*, 23–31.

Gajderowicz, T., Grotkowska, G. and Wincenciak, L. (2012). Premia płacowa z wykształcenia wyższego według grup zawo*dów. Ekonomista* nr 5, 577–603.

Gajek, E. (2008). *Edukacja językowa w społeczeństwie informacyjnym.* Warszawa: Instytut Lingwistyki Stosowanej Uniwersytetu Warszawskiego.

Gajewska-Dyszkiewicz, A. (2012). Opinie polskich gimnazjalistów dotyczące nauki języków obcych. *Języki Obce w Szkole*, 4, 73–78.

Gajewska-Dyszkiewicz, A., Grudniewska, M., Kulon, F., Kutyłowska, K., Paczuska, K., Rycielska, L. and Szpotowicz, M. (2013). *Europejskie Badanie Kompetencji Językowych ESLC – Raport krajowy 2011*. Warszawa: Instytut Badań Edukacyjnych.

Gajewska-Dyszkiewicz, A., Męziński, M., Rycielska, L., Ellis, M. and Chandler, D. (w przygotowaniu). *Badanie umiejętności mówienia w języku angielskim*. Warszawa: Instytut Badań Edukacyjnych.

Gass, S.M. (1997). *Input, interaction, and the second language learner*. Mahwah, NJ: Lawrence Erlbaum.

Giza-Poleszczuk, A., Komendant-Brodowska, A. and Baczko-Dombi, A. (2011). *Przemoc w szkole. Raport z badań*. Uzyskano z: http://www.szkolabezprzemocy.pl/pliki/318-sbp2011-raport-glowny-calosc.pdf [dostęp 1 grudnia 2013].

Górniak, J. (2012). *Młodość czy doświadczenie. Kapitał ludzki w Polsce*. Raport podsumowujący III edycję badań BKL.

Grajkowski, W. (2014). *Raport tematyczny z badania Diagnoza potrzeb nauczycieli przyrody w szkole podstawowej w zakresie wsparcia w prowadzeniu lekcji metodą badawczą*. Warszawa: Instytut Badań Edukacyjnych.

Grzęda, M. (2010). *Nauczyciele matematyki w Polsce – raport z badania TEDS-M*. Warszawa: Instytut Filozofii i Socjologii.

GUS (2007). *Oświata i wychowanie w roku szkolnym 2006/2007*. Warszawa: Główny Urząd Statystyczny.

GUS (2008). *Oświata i wychowanie w roku szkolnym 2007/2008*. Warszawa: Główny Urząd Statystyczny.

GUS (2009). *Oświata i wychowanie w roku szkolnym 2008/2009*. Warszawa: Główny Urząd Statystyczny.

GUS (2010). *Oświata i wychowanie w roku szkolnym 2009/2010*. Warszawa: Główny Urząd Statystyczny.

GUS (2011). *Oświata i wychowanie w roku szkolnym 2010/2011*. Warszawa: Główny Urząd Statystyczny.

GUS (2012). *Oświata i wychowanie w roku szkolnym 2011/2012*. Warszawa: Główny Urząd Statystyczny.

GUS (2013a). *Kształcenie Dorosłych 2011*. Warszawa: Główny Urząd Statystyczny.

GUS (2013b). *Migracje zagraniczne ludności. Narodowy Spis powszechny ludności i mieszkań*. Warszawa: Główny Urząd Statystyczny.

GUS (2013c). *Oświata i wychowanie w roku szkolnym 2012/2013*. Warszawa: Główny Urząd Statystyczny.

GUS (2013d). *Wybory ścieżki kształcenia a sytuacja zawodowa Polaków*. Warszawa: Główny Urząd Statystyczny.

Guthrie, J.T. (red.) (2008). *Engaging Adolescents in Reading*. Thousand Oaks, CA: Corwin Press.

Guthrie, J.T. i Alao, S. (1997). Designing contexts to increase motivation for reading. *Educational Psychologist, 32,* 95–105.

Guthrie, J.T. i Wigfield, A. (2000). *Engagement and motivation in reading*. W: M.L. Kamil, P.B. Mosenthal, P.D. Pearson, i R. Barr (red.), *Handbook of reading research: Volume III*. New York: Erlbaum, 403–422.

Hajdukiewicz, M. (2013). *Ewaluacja a wspomaganie pracy szkoły na podstawie doświadczeń projektu „System doskonalenia nauczycieli oparty na ogólnodostępnym kompleksowym wspomaganiu szkół",* System Ewaluacji Oświaty – Nadzór pedagogiczny. Pobrano z: http://www.npseo.pl/data/documents/3/296/296.pdf

Hanushek, E.A. (2002). Evidence, politics, and the class size debate. *The class size debate*, 37–65.

Hanushek, E.A., Schwerdt, G., Wiederhold, S. and Woessmann, L. (2013). „Returns to Skills Around the World: Evidence from PIAAC", OECD Education Working Papers, No. 101, OECD Publishing. Pobrano z: http://dx.doi.org/10.1787/5k3tsjqmvtq2-en

Hattie, J. (2013). *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*. Routledge.

Herbst, M., Herczyński, J. and Levitas, A. (2009). *Finansowanie oświaty w Polsce: diagnoza, dylematy, możliwości*. Wydawnictwo Naukowe Scholar.

Herczyński, J. and Sobotka, A. (2013). *Sieć szkół podstawowych i gimnazjów w Polsce 2007–2012*. Warszawa: Instytut Badań Edukacyjnych.

Hernik, K., Malinowska, K., Piwowarski, R., Przewłocka, J., Smak, M. and Wichrowski , A. (2014). *Polscy nauczyciele i dyrektorzy na tle międzynarodowym. Główne wyniki badania TALIS 2013*. Warszawa: IBE.

Hill, H.C., Schilling, S.G. and Ball, D.L. (2004). Developing measures of teachers' mathematics knowledge for teaching. *The Elementary School Journal*, *105*(1), 11–30.

Hirigoyen, M.F. (2003). *Molestowanie w pracy*. Poznań: Wydawnictwo W Drodze.

Hung, C.M., Oi, A.K., Chee, P.K. and Man, C.L. (2007). Defining the meaning of teacher success in Hong Kong. W: T. Townsend, R. Bates (red.). *Handbook of teacher education: Globalization, standards, and professionalism in times of change*. Dordrecht, The Netherlands: Springer, 415–430.

IBE (2012a). Raport z II cyklu badania *Laboratorium myślenia*, niepublikowany.

IBE (2012b). *Szkolne, psychologiczne i społeczne uwarunkowania wyników nauczania na I etapie edukacyjnym. Raport na podstawie fazy wstępnej ogólnopolskiego badania podłużnego Szkolnych Uwarunkowań Efektywności Kształcenia.* Nieopublikowany raport. Warszawa: Instytut Badań Edukacyjnych.

IBE (2013a). Dobre praktyki dydaktyczne w nauczaniu przedmiotów przyrodniczych w Polsce. W: *Raport z badania Podstawa programowa i rozwój dydaktyk przedmiotowych w opiniach nauczycieli, dyrektorów szkół oraz uczniów*. Warszawa: Instytut Badań Edukacyjnych.

IBE (2013b). *Raport z badania dobrych praktyk w nauczaniu historii.* Warszawa: Instytut Badań Edukacyjnych.

IBE (2013c). *Raport z badania realizacji podstawy programowej.* Warszawa: Instytut Badań Edukacyjnych.

IBE (2014). *Badanie 6- i 7-latków na starcie szkolnym. Raport z badań.* Warszawa: Instytut Badań Edukacyjnych.

International Association for the Evaluation of Educational Achievement (2011a). *TIMSS 2011 Assessment*. TIMSS & PIRLS International Study Center, Lynch School of Education, Boston College, Chestnut Hill, MA and International Association for the Evaluation of Educational Achievement (IEA), IEA Secretariat: Amsterdam.

International Association for the Evaluation of Educational Achievement (2011b). *PIRLS 2011 Assessment*. TIMSS & PIRLS International Study Center, Lynch School of Education, Boston College,

Chestnut Hill, MA and International Association for the Evaluation of Educational Achievement (IEA), IEA Secretariat: Amsterdam.

IFiS PAN (2009). *Wstępna diagnoza nauczania w zakresie nauk przyrodniczych na podstawie wywiadów z nauczycielami gimnazjów i szkół podstawowych*. Raport niepublikowany, przekazany do CKE.

IFiS PAN (2013). *Wyniki badania PISA 2013*. Warszawa: Instytut Filozofii i Socjologii PAN.

ISP (1991). *Nauczyciele wobec reformy edukacji: raport z badań*. Warszawa: Instytut Spraw Publicznych.

ISP (2002). *Zmiany w systemie oświaty. Wyniki badań empirycznych*. Warszawa: Instytut Spraw Publicznych.

Janus-Sitarz, A. (2009). *Przyjemność i odpowiedzialność w lekturze. O praktykach czytania literatury w szkole. Konstatacje. Oceny. Propozycje*. Kraków: Universitas.

Janus-Sitarz, A. and Biedrzycki, K. (red.), (2012). *Doświadczenie lektury. Między krytyką literacką a dydaktyką literatury*. Kraków: Universitas.

Jewdokimow, M. (2013). *Analiza danych dotyczących wymagań: „Uczniowie nabywają wiadomości i umiejętności" i „Oferta edukacyjna umożliwia realizację podstawy programowej"*. W: G. Mazurkiewicz (red.). *Jakość edukacji. Dane i wnioski z ewaluacji zewnętrznych prowadzonych w latach 2010–2011*. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego, 27–36.

Jurek, K. (2006). *Analityczna i holistyczna metoda oceny zadania rozszerzonej odpowiedzi na przykładzie egzaminu maturalnego z historii i wiedzy o społeczeństwie*. Łódź. Pobrano z: http://www.komisja.pl/pobierz/badania/K.Jurek_2005.pdf [dostęp 24.11.2013]

Kaczan, R. i Rycielski, P. (red.) (2014). *Badanie 6- i 7-latków na starcie szkolnym. Raport z badań*. Warszawa: Instytut Badań Edukacyjnych.

Kalisiak, K., Szapiro, T., Białowąs, K. and Szreder, M. (2012). Premia płacowa z wykształcenia wyższego według kierunku studiów. *Ekonomista*, (5), 555–576.

Kalka, J. (2011). Młodzież a szkoła. *Opinie i diagnozy, 19*, 24–42. Warszawa: CBOS.

Kalka, J. and Feliksiak, M. (2014). *Młodzież a szkoła*. W: CBOS i KBPN, *Młodzież 2013* (s. 22–43). Uzyskano z: http://www.cinn.gov.pl/portal?id=15&res_id=673746

Kazimierska, I. (2010). *Aspekty praktycznego wykorzystania czynników wpływających na motywację wewnętrzną w pracy zespołowej nauczycieli*, Warszawa: ORE. Pobrane z: http://ore.edu.pl/

Kersting, N. (2008). Using video clips of mathematics classroom instruction as item prompts to measure teachers' knowledge of teaching mathematics. *Educational and Psychological Measurement*, 68 (5), 845–861.

Kędzierska, H. (2012). *Kariery zawodowe nauczycieli. Konteksty – wzory – pola dyskursu*. Toruń: Wydawnictwo Adam Marszałek.

Kołodziejczyk, J. (2011). Partycypacja uczniów, rodziców i nauczycieli w zarządzaniu szkołą. W: G. Mazurkiewicz (red.), *Ewaluacja w nadzorze pedagogicznym. Refleksje.* Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego.

Kołodziejczyk, J. (2013). *Collaboration of teachers in planning and execution of educational processes in school. ICERI2013 Proceedings*, 4033–4041.

Kołodziejczyk, J., Walczak, B. and Kasprzak, T. (2012). Rodzice – partnerzy szkoły? Perspektywa ewaluacyjna. *Polityka Społeczna* nr tematyczny 1/2012.

Komisja Europejska (2012). *First European Survey on Language Competences: Final report*. Luksemburg: Publications Office of the European Union.

Komorowska, H. (1991). Second language teaching in Poland prior to the reform of 1990. W: J.E. Alatis (red.), *Georgetown Round Table on Languages and Linguistics.* Washington, DC: Georgetown University Press.

Komorowska, H. (2007a). *Metodyka nauczania języków obcych w Polsce (1957–2007).* Warszawa: Centralny Ośrodek Doskonalenia Nauczycieli.

Komorowska, H. (2007b). *Sprawdzanie umiejętności w nauce języka obcego. Kontrola – Ocena – Testowanie.* Warszawa: Fraszka Edukacyjna.

Komorowska, H. (2011). *Metodyka nauczania języków obcych*. Warszawa: Fraszka Edukacyjna.

Komorowska, H. (2012). The Teacher Training Colleges Project in Poland. W: Ch. Tribble (red.), *Managing change in English language teaching: lessons from experience.* London: British Council.

Konarzewski, K. (2001). *Szkolnictwo w pierwszym roku reformy systemu oświaty*. Warszawa: Instytut Spraw Publicznych.

Konarzewski, K. (2004), *Kształcenie i wychowanie w szkołach podstawowych i gimnazjach*. Warszawa: Instytut Spraw Publicznych.

Konarzewski, K. (2004). *Reforma oświaty. Podstawa programowa i warunki kształcenia*. Warszawa: Instytut Spraw Publicznych.

Konarzewski, K. (2012). *TIMSS i PIRLS 2011. Osiągnięcia szkolne polskich trzecioklasistów w perspektywie międzynarodowej.* Warszawa: Centralna Komisja Egzaminacyjna.

Konieczna, A. (2009). *Analiza struktury interakcji w sytuacji rozmowy nauczycieli z rodzicami o problemach szkolnych ucznia*. Warszawa: Wydawnictwo Akademii Pedagogiki Specjalnej.

Koniewski, M. (2013). Szacowanie efektu nauczyciela na osiągnięcia edukacyjne uczniów z wykorzystaniem hierarchicznego modelowania liniowego. *Edukacja, 3,* 37–59.

Konior, J. (1998). Dydaktyka matematyki i jej metodologia w rozwoju (wybrane zagadnienia). *Dydaktyka Matematyki, 20*, 49–71.

Kowalikowa, J. (2004). Kształcenie językowe, teoria dla praktyki. W: A. Janus-Sitarz (red.), *Polonista w szkole. Podstawy kształcenia nauczyciela polonisty*. Kraków: Universitas, 117–124.

Kowalikowa, J. (2006). *Narodziny nauczyciela polonisty*. Kraków: Universitas.

Kowalikowa, J. and Synowiec, H. (2005). *Miejsce nauki o języku w kształceniu językowym uczniów*. W: Z. Uryga, M. Sienko (red.), *Kształcenie sprawności językowej i komunikacyjnej. Obraz badań i działań językowych*. Kraków: Wydawnictwo Naukowe Uniwersytetu Pedagogicznego im. Komisji Edukacji Narodowej, 45–56.

Krauss, S. et al. (2008). Pedagogical content knowledge and content knowledge of secondary mathematics teachers. *Journal of Educational Psychology, 100*(3), 716–725.

KRRIO (2012). *Informacja o wynikach kontroli dotacji udzielanych z budżetów jednostek samorządu terytorialnego dla jednostek sektora finansów publicznych*. Poznań.

Krygowska, Z. (1982). Główne problemy i kierunki badań współczesnej dydaktyki matematyki, *Dydaktyka Matematyki, 1*, 7–60.

Kujawska, M. (1996). W poszukiwaniu modelu nauczyciela historii., *Wiadomości Historyczne, 5,* 267–277.

Kur, E.M. (2007). Madame czy Bladaczka? Wizerunek nauczyciela – rzeczywistość, oczekiwania, potrzeby. *Edukacja Humanistyczna (*Zielona Góra), 5, 69–82.

Leymann, H. (1996). The content and development of mobbing at work. *European Journal of Work and Organizational Psychology, 5* (2) 165–184.

Lilpop, J. and Poziomek, U. (2012). *Raport z wizyty studyjnej w Anglii.* Warszawa: Instytut Badań Edukacyjnych.

Lindgren, E. and Muñoz, C. (2013). The influence of exposure, parents, and linguistic distance on young European learners' foreign language comprehension. *International Journal of Multilingualism, 10* (1),105–129.

Long, M.H. (1981). Input, interaction and second language acquisition. *Annals of the New York Academy of Sciences, 379*, 259–278.

Long, M.H. (1996). The role of the linguistic environment in second language acquisition. W: W. Ritchie i T. Bhatia (red.), *Handbook of second language acquisition*. New York: Academic Press.

Lorenc, J., Mrozowski, K., Oniszczuk, A., Staniszewski, J. i Starczynowska, K. (2012). Jak sprawdzane jest myślenie chronologiczne?, *Edukacja, 3* (119), 46–62.

Lowit, T. (1971). *Le syndicalisme de type soviétique.* Paris: Librairie Armand Colin.

Łazarska, D. (2008). *Polonista wobec potrzeby „czytania" tekstów kultury popularnej w gimnazjum*. W: B. Myrdzik i L. Tymiakin (red.), *Teksty kultury w szkole. Nowe wyzwania i dylematy*. Lublin: Wydawnictwo UMCS, 277–288.

Machin, S. and Manning, A. (1999). The causes and consequences of longterm unemployment in Europe. *Handbook of labor economics, 3,* (1999): 3085–3139.

Malicka, J. (2012). Czym jest integracja w kształceniu polonistycznym? Rozróżnienia badawcze. W: S.J. Żurek, A. Adamczuk-Stęplewska (red.), *Dydaktyka literatury i języka polskiego. Stan badań i perspektywy badawcze*. Lublin: Wydawnictwo KUL, 51–62.

Martin, J. (2009). Typowe błędy metodyczne w prowadzeniu zajęć językowych. W: H. Komorowska (red.), *Skuteczna nauka języka obcego. Struktura i przebieg zajęć językowych*. Warszawa: Centralny Ośrodek Doskonalenia Nauczycieli.

Maternicki, J., Majorek, C. and Suchoński, A. (1994). *Dydaktyka Historii*. Warszawa: Wydawnictwo Naukowe PWN.

Mawhinney, L. (2008). Laugh so you don't cry: teachers combating isolation in schools through humour and social support. *Ethnography & Education, 3*(2).

MEN [Ministerstwo Edukacji Narodowej]. (2008). Rozporządzenie Ministra Edukacji Narodowej z dnia 23 grudnia 2008 r. w sprawie podstawy programowej wychowania przedszkolnego oraz kształcenia ogólnego w poszczególnych typach szkół (Dz.U. 2008 nr 4 z 15 stycznia 2009). Warszawa: Kancelaria Prezesa Rady Ministrów.

MEN (2009). *Podstawa programowa z komentarzami, T. 5. Edukacja przyrodnicza w szkole podstawowej, gimnazjum i liceum; przyroda, geografia, biologia, chemia, fizyka*. Warszawa: Ministerstwo Edukacji Narodowej. Pozyskano z: http://www.men.gov.pl/images/stories/pdf/Reforma/men_tom_5.pdf

MEN (2010a). Rozporządzenie Ministra Edukacji Narodowej z dnia 20 sierpnia 2010 r. zmieniające rozporządzenie w sprawie warunków i sposobu oceniania, klasyfikowania i promowania uczniów i słuchaczy oraz przeprowadzania sprawdzianów i egzaminów w szkołach publicznych (Dz.U. 2010 nr 156, poz. 1046). Warszawa: Ministerstwo Edukacji Narodowej.

MEN (2010b). *Informacja o wynikach monitorowania wdrażania realizacji podstawy programowej wychowania przedszkolnego i kształcenia ogólnego w roku szkolnym 2009/2010*. Warszawa: ORE.

MEN (2012a). *System doskonalenia nauczycieli – stan obecny, wady i zalety, propozycje zmian*. Materiał przygotowany przez Departament Programów Nauczania i Podręczników MEN.

MEN (2012b). System informacji oświatowej.

MEN (2012c). Rozporządzenie Ministra Edukacji Narodowej z dnia 7 lutego 2012 r. w sprawie ramowych planów nauczania w szkołach publicznych (Dz.U. 22 lutego 2012 poz. 204). Warszawa: Ministerstwo Edukacji Narodowej.

MEN (2014). Rozporządzenie Ministra Edukacji Narodowej z dnia 30 maja 2014 r. zmieniające rozporządzenie w sprawie podstawy programowej wychowania przedszkolnego oraz kształcenia ogólnego w poszczególnych typach szkół. Pozyskano 05.06.2014 r. z: http://www.men.gov.pl/images/do_pobrania/podstawa_programowa_rozp_do_podpisu.pdf

MEN, PISA (2006). *Program Międzynarodowej Oceny Umiejętności Uczniów OECD PISA. Wyniki badania 2006 w Polsce*. Warszawa: Ministerstwo Edukacji Narodowej.

Mendel, M. (2007). *Rodzice i nauczyciele jako sprzymierzeńcy*. Gdańsk: Wydawnictwo Harmonia.

Meritum (2007). Komputer w szkole. *Mazowiecki Kwartalnik Edukacyjny, 4.*

Michaelowa, K. (2002): *Teacher job satisfaction, student achievement, and the cost of primary education in Francophone Sub-Saharan Africa*, HWWA Discussion Paper, No. 188.

Michalak, J. (2000). *Przywództwo w zarządzaniu szkołą ORE*. Pobrano z: http://www.eid.edu.pl/archiwum/2000,98/listopad,163/zarzadzanie_w_szkole,1049.html

Mincer, J. (1974), Schooling and earnings. *Schooling, experience, and earnings*. Columbia University Press, 41–63.

Mincer, J. (1991). *Education and Unemployment* (Working Paper No 3838). National Bureau of Economic Research.

MNiSW [Ministerstwo Nauki i Szkolnictwa Wyższego]. (2012). Rozporządzenie Ministra Nauki i Szkolnictwa Wyższego z dnia 17 stycznia 2012 r. w sprawie standardów kształcenia przygotowującego do wykonywania zawodu nauczyciela (na podstawie art. 9c Ustawy z dnia 27 lipca 2005 – Prawo o szkolnictwie wyższym (Dz.U. nr 164, poz. 1365 z późn. zm.). Warszawa: Kancelaria Prezesa Rady Ministrów.

Mościcka, A. and Drabek, M. (2010). Mobbing w środowisku pracy nauczyciela. W: J. Pyżalski, D. Merecz. (red.), *Psychospołeczne warunki pracy polskich nauczycieli. Między wypaleniem zawodowym a zaangażowaniem*. Kraków: Impuls.

Mullis, I.V.S, Martin, M.O., Foy, P. and Drucker, K.T. (2012). *PIRLS 2011 International Results in Reading*. International Association for the Evaluation of Educational Achievement: Amsterdam.

Myck, M., Nicinska, A. and Morawski, L. (2009). *Count your hours: returns to education in Poland* (No. 4332). IZA Discussion Papers.

Myrdzik, B. (1999). *Rola hermeneutyki w edukacji polonistycznej*. Lublin: Wydawnictwo UMCS.

Myrdzik, B. (2007). O roli nauczyciela w procesie kształtowania tożsamości kulturowej ucznia. *Edukacja Humanistyczna* (Zielona Góra), 2007(5), 9–21.

Myrdzik, B. and Latoch-Zielińska, M. (red.) (2006). *Kultura popularna w szkole. Pobłażliwe przyzwolenie czy autentyczny dialog*. Lublin: Wydawnictwo UMCS.

Nagajowa, M. (1980). *ABC metodyki języka polskiego*. Warszawa: WSiP.

Nawroczyński, B. (1961). *Zasady nauczania*. Wrocław: WSiP.

Newell, A. and Socha, M.W. (2007). The Polish Wage Inequality Explosion. *Economics of Transition, 15*(4), 733–758.

Nickell, S., and Bell, B. (1995). The collapse in demand for the unskilled and unemployment across the OECD. *Oxford Review of Economic Policy* 11.1, 40–62.

Niss, M. (2004). The Danish „KOM" project and possible consequences for teacher education. W: R. Strässer, G. Brandell, B. Grevholmi O. Helenius (red.), *Educating for the future. Proceedings of an international symposium on mathematics teacher education: preparation of mathematics teachers for the future* (179–190). Stockholm: Royal Swedish Academy of Science.

Nocoń, J. (2009). Wiedza o języku czy wiedza językowa? – o uczeniu gramatyki w szkole. *Polonistyka*, 2009(8), 10–16.

NRC (2000). *Inquiry and the National Science Education Standards: A Guide for Teaching and Learning*. Washington: The National Academy Press.

Oates, W.E. (1972). *Fiscal Federalism*. New York: Harcourt Brace Jovanovich.

Obuchowska, I. (1996). *Drogi dorastania. Psychologia rozwojowa okresu dorastania*. Warszawa: WSiP.

OECD (2011). *Building a High-Quality Teaching Profession. Lessons from around the World*. Pobrano z: http://asiasociety.org/files/lwtw-teachersummit.pdf

OECD (2012). *Education at a Glance 2012: OECD Indicators*. Paryż: OECD Publishing. Pobrano z: http://dx.doi.org/10.1787/eag-2012-en

OECD (2013a). *Education at a Glance 2013. OECD Indicators*. Paryż: OECD.

OECD (2013b). *Teaching and Learning International Survey TALIS 2013 Conceptual Framework*, pobrano z: http://www.oecd.org/edu/school/TALIS%20Conceptual%20Framework_FINAL.pdf

OECD (2014). *Teaching and Learning International Survey.*

Ogólnopolskie Stowarzyszenie Kadry Kierowniczej Oświaty (2006). *Stanowisko OSKKO w sprawie awansu zawodowego nauczycieli*. Materiał roboczy. Pobrano z: http://oskko.edu.pl/konferencje/MEN19-05-2006/awans.pdf (pobrano 23.12.2013)

Ojrzyńska, B.K. (2004). Mobbing wśród nauczycieli przyczyną przemocy wśród młodzieży: wnioski z obserwacji życia w szkole. W: A. Rejzner (red.), *Agresja w szkole: spojrzenie wieloaspektowe*. Warszawa: Wydawnictwo WSP TWP, 109–115.

Okońska-Walkowicz, A., Plebańska, M. and Szaleniec, H. (2009). *O kompetencjach kluczowych, e-learningu i metodzie projektów*. Warszawa: WSiP.

ORE (2010). *Wzmocnienie systemu wspierania rozwoju szkół ze szczególnym uwzględnieniem doskonalenia nauczycieli i doradztwa metodycznego – Raport*. Pobrane z: http://ore.edu.pl/

ORE (2011a). *Informacja o wynikach Monitorowania wdrażania podstawy programowej wychowania przedszkolnego i kształcenia ogólnego w roku szkolnym 2010/2011*. Warszawa: Ośrodek Rozwoju Edukacji.

ORE (2011b). *Nowy system kompleksowego wsparcia pracy szkoły*. Pobrano z http://www.ore.edu.pl/index.php?option=com_content&view=article&id=943:nowy-system-kompleksowe

ORE (2012a). *Informacja o wynikach Monitorowania wdrażania podstawy programowej wychowania przedszkolnego i kształcenia ogólnego w roku szkolnym 2011/2012*. Warszawa: Ośrodek Rozwoju Edukacji.

ORE (2012b). *Podstawowe założenia i organizacja nowego systemu doskonalenia nauczycieli.* Pobrane z: http://ore.edu.pl/

ORE (2012c). *Poradnik dla beneficjenta. Program Operacyjny Kapitał Ludzki 2007–2013. Priorytet III Wysoka jakość systemu oświaty. Działanie 3.5. Kompleksowe wspomaganie rozwoju szkół. Konkurs otwarty nr 1/POKL/3.5/2012*. Pobrane z: http://ore.edu.pl/

ORE (2012d). *Wykorzystanie przez jednostki samorządu terytorialnego potencjału intelektualnego nauczycieli wypadających z zawodu w latach 2011 i 2012. Pobrane z: http://ore.edu.pl/*

Osborne, J.F., Dillon, J. (2008). *Science Education in Europe: Critical Reflections. A Report to the Nuffield Foundation*. London: *King's College London.*

Osiecka, J. (1996). *Kształcenie i doskonalenie zawodowe oraz kwalifikacje nauczycieli w Polsce.* Kancelaria Sejmu. Biuro Studiów i Ekspertyz, kwiecień.

Ostroff, C. (1992). The Relationship Between Satisfaction, Attitudes, and Performance: An Organizational Level Analysis. *Journal of Applied Psychology, 77*(6), 963–974.

Paczuska, K., Kutyłowska, K., Gajewska-Dyszkiewicz, A., Ellis, M. and Szpotowicz, M. (2014). *Język angielski w gimnazjum. Raport cząstkowy z pierwszego etapu Badania uczenia się i nauczania języków obcych w gimnazjum*. Warszawa: Instytut Badań Edukacyjnych.

Pardała, A. (1984). *Problemy dydaktyczne związane z interwencją nauczyciela w toku rozwiązywania zadań matematycznych przez uczniów*. Rzeszów: Wydawnictwo Uczelniane WSP w Rzeszowie.

Parent-Thirion, A., Fernández Macías, E., Hurley, J. and Vermeylen, G. (2007). Fourth European Working Conditions Survey. Dublin: European Foundation for the Improvement of Living and Working Conditions.

PARP (2013). *Bilans Kapitału Ludzkiego w Polsce*. Pobrano z: http://bkl.parp.gov.pl/system/files/Downloads/20121128143313/BKL_broszura_2013.pdf?1371447997

Pavlenko, A. and Lantolf, J.P. (2001). Second language learning as participation and the (re)construction of selves. W: J. P. Lantolf (red.), *Sociocultural theory and second language learning*. Oxford: Oxford University Press.

Pawlak, M. (2009). Rola nauczyciela w kształtowaniu procesów interakcyjnych w klasie językowej. W: M. Pawlak, A. Mystkowska-Wiertelak, A. Pietrzykowska (red.), *Nauczyciel języków obcych dziś i jutro*. Poznań-Kalisz: Wydział Pedagogiczno-Artystyczny UAM w Kaliszu.

Pawlak M. and Sanojca, K. (2008). Wyzwania współczesnej oświaty – reforma szkolnictwa i kształt eduakcji historycznej w oczach nauczycieli. W: *Nauczanie historii – ciekawiej: Notatnik nauczyciela*, (red.) W. Mrozowicz, K. Sanojca. Wrocław. Pobrano z: http://www.cen.uni.wroc.pl/Pliki/26.pdf [dostęp 25.11.2013]

Pery, A. (2011). *Awans zawodowy nauczyciela – krok po kroku*. Warszawa: ORE. Pobrano z: http://ore.edu.pl/

Perzycka, E. (2000). Świadomość edukacyjna nauczycieli języka polskiego. *Studia Pedagogica Universitatis Stetinensis*, *1*, 159–168.

Polya, G. (1975). *Odkrycie matematyczne*. Warszawa: Wydawnictwo Naukowo-Techniczne.

Psacharopoulos, G. (1985). Returns to education: a further international update and implications. Journal of human resources, 583–604.

Poziomek, U. and Studzińska, M. (red.) (2013). *Raport z badania Dobre praktyki w przyrodniczej edukacji pozaformalnej*. Warszawa: Instytut Badań Edukacyjnych.

Pyżalski, J. and Merecz, D. (red.) (2010). *Psychospołeczne warunki pracy polskich nauczycieli*. Kraków: Impuls.

Rada Europy (2003). *Europejski System Opisu Kształcenia Językowego: uczenie się, nauczanie, ocenianie*. Warszawa: Centralny Ośrodek Doskonalenia Nauczycieli.

Ratajczak, Z. (2007). *Psychologia pracy i organizacji*. Warszawa: Wydawnictwo Naukowe PWN.

Richards, J.C. and Rodgers, T.S. (2001). *Approaches and methods in language teaching*. (wyd. 2). Cambridge: Cambridge University Press.

Richman, J.A. et al. (1999). Sexual harassment and generalized workplace abuse among university employees: Prevalence and mental health correlates. *American Journal of Public Health, 89*(3).

RIO (2013). *Sytuacja finansowa JST w ocenie RIO*. Materiały na Konferencję „Przyszłość finansów samorządów – dylematy i wyzwania" organizowaną przez Senat RP, 20.06.2013.

Rostowski, T. and Sienkiewicz, Ł. (2003). Wprowadzenie pracownika do pracy. W: Juchnowicz, M. (red.), *Narzędzia i praktyka zarządzania zasobami ludzkimi*. Warszawa: Poltext.

Rozporządzenie MEN z dnia 12 marca 2009 r. w sprawie szczegółowych kwalifikacji wymaganych od nauczycieli oraz określenia szkół i wypadków, w których można zatrudnić nauczycieli niemających wyższego wykształcenia lub ukończonego zakładu kształcenia nauczycieli (Dz.U. nr 50 poz. 400).

Rozporządzenie MEN z dnia 26 października 2012 r. zmieniające rozporządzenie w sprawie placówek doskonalenia nauczycieli (Dz.U. 2012 poz. 1196).

Rozporządzenie Ministra Edukacji Narodowej z dnia 1 lutego 2013 r. w sprawie szczegółowych zasad działania publicznych poradni psychologiczno-pedagogicznych, w tym publicznych poradni specjalistycznych (Dz.U. 2013 poz. 199).

Rozporządzenie Ministra Edukacji Narodowej z dnia 10 maja 2013 r. zmieniające rozporządzenie w sprawie nadzoru pedagogicznego.

Rozporządzenie Ministra Edukacji Narodowej z dnia 28 lutego 2013 r. w sprawie szczegółowych zasad działania publicznych bibliotek pedagogicznych (Dz.U. 2013 poz. 369).

Róziewicz, G. (2011). Dzieci sieci – specyfika pokolenia. *Problemy opiekuńczo-wychowawcze, 1*.

Rusek, M. (2008). *Polonistyka wobec „literatury sieci". Kłopoty z czytaniem i problemy z interpretacją hipertekstu.* W: B. Myrdzik i L. Tymiakin (red.), *Teksty kultury w szkole. Nowe wyzwania i dylematy.* Lublin: Wydawnictwo UMCS, 239–248.

Rynko, M. (red.) (2013). *Umiejętności Polaków – wyniki Międzynarodowego Badania Kompetencji Osób Dorosłych (PIAAC)*. Warszawa: Instytut Badań Edukacyjnych.

Sajka, M. (2006). Refleksje na temat określania wiedzy przedmiotowej nauczycieli matematyki. *Annales Academic Pedagogicae Cracoviensis* 36, *Studia ad Didacticam Mathematicae Pertinantia* I, 297–319.

Schaufeli, W.B. i Enzmann, D. (1998). *The burnout companion to study and practice: A critical analysis.* London: Taylor & Francis.

Scheerens, J. (red.) (2011). *Teachers' professional development: Europe in international comparison: an analysis of teachers' professional development based on the OECD's TALIS,* Luxembourg: Office for Official Publications of the European Union, doi 10.2766/63494.

Sęk, H. (1996). *Wypalenie zawodowe. Psychologiczne mechanizmy i uwarunkowania*. Poznań: Zakład Wydawniczy K. Domke.

Sęk, H. (2000). Wybrane zagadnienia psychoprofilaktyki. W: H. Sęk (red.), *Społeczna psychologia kliniczna*. Warszawa: PWN.

Sheffield, D., Dobbie, D. and Carrol D. (1994). Stress, social support, and psychological and physical wellbeing in secondary school teachers. *Work & Stress*, 8.

Shen, Y. (2009). Relationships between self-efficacy, social support and stress coping strategies in Chinese primary and secondary school teachers. *Stress & Health: Journal of the International Society for the Investigation of Stress, 25*(2).

Sierpińska, A. and Kilpatrick, J. (1998). Continuing the Search. W: A. Sierpińska, J. Kilpatrick (red.), *Mathematics as a Research Domain: A Search for Identity*. AN ICMI Study. Book 2. Kluwer Academic Publishers, 527–549.

Siwek, H. (2005). *Dydaktyka matematyki. Teoria i zastosowania w matematyce szkolnej.* Warszawa: WSiP.

Slezakova-Kratochvilova, J. and Swoboda, E. (2006). Kognitywne przeszkody w komunikowaniu się nauczyciel – uczeń. *Dydaktyka Matematyki, 29,* 185–207.

Slezakova, J. and Swoboda, E. (2008). Ewolucja znaczenia słowa w matematyce jako problem dydaktyczny. *Dydaktyka Matematyki, 31,* 5–30.

Sławiński, S. (2012). *Analiza regulacji prawnych zawodu nauczyciela w Polsce*. Warszawa: IBE.

Smak, M. (w przygotowaniu). *Neoinstytucjonalna analiza mechanizmów zapewniających dobry poziom nauczania.* Maszynopis pracy doktorskiej w przygotowaniu. Wydział Filozofii i Socjologii, Uniwersytet Warszawski, Warszawa, Polska.

Smith, T.W., Glazer, K., Ruiz, J.M. and Gallo, L.C. (2004). Hostility, anger, aggressiveness, and coronary heart disease: An interpersonal perspective on personality, emotion, and health. *Journal of Personality, 72*(6).

Spence, A.M. (1973). *Job Market Signaling,* Quarterly Journal of Economics, *87*(3), 355–374.

Spillane, J.P. (2011). *Distributed Leadership.* San Francisco: Jossey–Bass.

Starypan, I. (2012). *Szkoła widziana oczami rodziców. Analiza realizacji wymagań na podstawie danych ewaluacji zewnętrznej zebranych od rodziców.* Pobrano z: http://www.npseo.pl/data/various/files/Szko%C5%82a%20w%20oczach%20rodzic%C3%B3w_5_09_2012.pdf

Stawiński, W. (red.) (2006). *Dydaktyka biologii i ochrony środowiska*. Warszawa: Wydawnictwo Naukowe PWN.

Strawiński, P. (2006). Zwrot z inwestowania w wyższe wykształcenie, *Ekonomista*, nr 6, 805–821.

Sterna, D. and Strzemieczny, J. (2012). *Organizacja procesów edukacyjnych dla wspierania uczenia się*. Pobrano z: http://www.npseo.pl/data/various/files/sterna_strzemieczny.pdf [dostęp 27.02.2014].

Swat-Pawlicka, M. and Pawlicki, A., *Analiza niektórych danych zebranych podczas ewaluacji zewnętrznej w roku szkolnym 2011/2012 w związku z wymaganiem „Uczniowie są aktywni". Pobrano z:* http://www.cms.npseo.pl/data/various/files/Magdalena%20Swat%20Pawlicja%20Aleksander%20Pawlicki%20aktywno%C5%9B%C4%87%20uczni%C3%B3w%202011_12.pdf [dostęp 27.02.2013].

Synowiec, H. (2006). O sytuacji języka ojczystego w zreformowanej szkole. W: E. Bańkowska, A. Mikołajczuk (red.), *Kompetencje nauczyciela polonisty we współczesnej szkole*. Warszawa: Wydawnictwo Polonistyki Uniwersytetu Warszawskiego, 125–136.

Szczucka, A., Turek, K.and Worek, B. (2012). Kształcenie przez całe życie. Warszawa: PARP.

Szpotowicz, M. (2013). Language achievements of Polish young learners: evidence from the ELLiE study. W: D. Gabryś-Barker, E. Piechurska, J. Zybert (red.), *Investigations in teaching and learning languages*. New York: Springer.

Sztanderska, U. and Minkiewicz, B. (red.) (2007). *Edukacja dla pracy: raport o Rozwoju Społecznym Polska 2007*. UNDP Poland.

Tędziagolska, M. (2013). *Analiza danych dotyczących wymagania „Uczniowie są aktywni", czyli o aktywności uczniów i nauczycieli w szkole*. W: G. Mazurkiewicz (red.), *Jakość edukacji. Dane i wnioski z ewaluacji zewnętrznych prowadzonych w latach 2010–2011*. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego, 37–54.

Tomaszewska, B. (2009). Lekcja w szkole ponadpodstawowej i ponadgimnazjalnej. W: H. Komorowska (red.), *Skuteczna nauka języka obcego. Struktura i przebieg zajęć językowych*. Warszawa: Centralny Ośrodek Doskonalenia Nauczycieli.

Treliński, G. (2004). *Kształcenie matematyczne w systemie zintegrowanym w klasach I–III*. Kielce: Wydawnictwo Uczelniane Wszechnicy Świętokrzyskiej.

Ubermanowicz, S. and Kokociński, M. (2011). *Czynniki kształtujące efektywność pracy nauczycieli matematyki i przedmiotów przyrodniczych. Raport z badań ankietowych postaw nauczycieli, partycypacji uczniów oraz wykorzystywania mediów w realizacji przedmiotów: matematyka, geografia, chemia, fizyka i biologia w klasach I liceów ogólnokształcących*. Poznań: Ogólnopolska Fundacja Edukacji Komputerowej, Uniwersytet im. Adama Mickiewicza.

Ur, P. (1996). *A course in language teaching*. Cambridge: Cambridge University Press.

Uryga, Z. (1996). *Godziny języka polskiego*. Warszawa–Kraków: PWN.

Uryga, Z. (2009). *Zadanie polonisty w gimnazjum – zaprosić uczniów do udziału w kulturze*. *Polonistyka*, 2009 (7), 6–10.

Uryga, Z. and Sienko M. (red.). (2005). *Kształcenie sprawności językowej i komunikacyjnej. Obraz badań i działań dydaktycznych*. Kraków: Wydawnictwo Naukowe Akademii Pedagogicznej.

Ustawa z dnia 26 stycznia 1982. Karta Nauczyciela (Dz.U. 2014 poz. 191).

Ustawa z dnia 7 września 1991 r. o systemie oświaty (Dz.U. 1991 nr 95 poz. 425 z późn. zm.).

Walczak, D. (2012). *Początkujący nauczyciele. Raport z badania jakościowego*. Warszawa: Instytut Badań Edukacyjnych.

Warszewska-Makuch, M. (2008). Zjawisko mobbingu wśród nauczycieli. *Bezpieczeństwo Pracy*, 5, 6–9.

Wawrzyniak-Beszterda, R. (2004). *Relacje komunikacyjne nauczyciel-uczeń. Uwagi na marginesie* badań. *Studia Edukacyjne*, 2004(6), 289–301.

Werbińska, D. (2004). *Skuteczny nauczyciel języka obcego*. Warszawa: Fraszka Edukacyjna.

Werbińska, D. (2011). *Developing into an effective Polish teacher of English*. Słupsk: Wydawnictwo Naukowe Akademii Pomorskiej w Słupsku.

Williams, M. and Burden, R. L. (1997). *Psychology for language teachers*. Cambridge: Cambridge University Press.

Wiłkomirska, A. and Zielińska, A. (2013). *Ocena system awansu zawodowego nauczycieli w Polsce. Studium empiryczne*. Warszawa: WUW.

Wróżyńska, H. (2000). Innowacyjność w procesie kontroli i oceny szansą dla edukacji jutra, *Edukacja Humanistyczna: kwartalnik*, nr 2–3, 73–78

Wysocka, M. (2003). *Profesjonalizm w nauczaniu języków obcych*. Katowice: Wydawnictwo Uniwersytetu Śląskiego.

Zalecenie Parlamentu Europejskiego i Rady z dnia 18 grudnia 2006 r. w sprawie kompetencji kluczowych w procesie uczenia się przez całe życie (2006/962/WE).

Zasacka, Z. (2012). Nastolatki i książki – od czytania codziennego do unikania. *Edukacja*, 2012(2–118), 20–35.

Zawadzka, E. (2004). *Nauczyciele języków obcych w dobie przemian*. Kraków: Impuls.

ZEE (2011). *Opracowanie koncepcji badania nakładów na edukację i przeprowadzenie analiz danych zastanych*. Raport niepublikowany Zespołu Ekonomii Edukacji IBE. Warszawa: Instytut Badań Edukacyjnych.

ZEE (2012). *Finansowanie i zarządzanie oświatą przez jednostki samorządu terytorialnego – badanie pilotażowe*. Raport niepublikowany Zespołu Ekonomii Edukacji IBE. Warszawa: Instytut Badań Edukacyjnych.

ZEE (2013). *Koszty edukacji ponadgimnazjalnej i policealnej*, Raport niepublikowany Zespołu Ekonomii Edukacji IBE. Warszawa: Instytut Badań Edukacyjnych.

Żeromska, A. (2013). *Metodologia matematyki jako przedmiot badań antropomatematycznych*. Kraków: Wydawnictwo Naukowe Uniwersytetu Pedagogicznego.

**Websites**

http://www.lodz.znp.edu.pl/index.php?a=2&r=2012&im=201209141 [dostęp 03.03.2014].

http://www.ahe.lodz.pl/konferencja/1690/konferencja-perspektywy-zawodowe-nauczycieli-wobec-zmian-na-rynku-pracy [dostęp 01.03.2014].

http://www.znp.edu.pl/element/1802/Jak_pomoc_zwalnianym_nauczycielom [dostęp 03.03.2014].

## Instytut Badań Edukacyjnych - Educational Research Institute

The main objective of the Institute is to conduct research, analyses and development work useful for the wider educational policy and practice.
The Institute employs more than 150 researchers specialising in education: sociologists, psychologists, educationalists, economists, political scientists and representatives of other scientific disciplines. They are outstanding specialists in their respective fields and they have had a wide spectrum of experience, including scientific research as well as teaching, work experience in public administration and activity in non-governmental organisations.
The Institute participates in many international research projects, including PIAAC, PISA, TALIS, ESLC, SHARE, TIMSS and PIRLS and systemic projects co-financed by the European Union from the European Social Fund.

## Reports on the State of Education

The first "Report on the State of Education. A Society on the Road to Knowledge" was presented in 2011 at the Congress of Polish Education. This comprehensive document contained the selected results of research and statistical data related to Polish education in the last 10-15 years.
Each year a new Report has been published. The 2011 Report, "The Changes Continue", described in details the changes within two fields of education, namely higher education and vocational education. The 2012 Report, "Outcomes Matter", described thoroughly the modernisation of the qualifications system: the Polish Qualifications Framework in view of the European Qualifications Framework, with special focus on the policy of lifelong learning.
The authors of the "Report on the State of Education. Teachers Matter" tried to describe the members of this profession. Issues presented in the 2013 Report were compiled mainly on the basis of research conducted by IBE sections and units.
The first part, "Education in numbers", presents data on the education of Poles and statistical analysis concerning the observable tendencies.
The second part, "Profession - teacher", includes teachers' opinions about themselves and their work, how they are perceived by others, what they think about their schools, what relations they observe in their work environment, how they develop their competences.
The last part, "Teachers in action" presents descriptions of selected subject teachers: Polish language, mathematics, foreign languages, history, science subjects. We have an insight into their forms and methods of working with students, what they see as their success or failure and what challenges teachers of the 21st century have to face.

**Instytut Badań Edukacyjnych - Educational Research Institute**
ul. Górczewska 8, 01-180 Warszawa | tel. +48 22 241 71 00
ibe@ibe.edu.pl | **www.ibe.edu.pl**

Project co-financed from the European Social Fund by the European Union..