Chapter 9
Poland: The Learning Environment that Brought About a Change

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Abstract Poland is among countries which have made the biggest progress in the development of student competences as measured by the PISA international comparative study based on the concept of key competences needed in contemporary society and economy. Therefore, the country has been considered as a top performer in development and promotion of key competencies in school education. Yes, a coherent and manifest "key competence strategy" has never been adopted in Poland—but key competences, even if not with that label, were introduced in the national core curriculum (2007) and promoted by several programs and initiatives. Poland offers an example that change of a broadly defined learning environment could make a significant impact on students' outcomes, although such objectives were not clearly articulated and operationalized. However, the lack of a long-term strategy agreed across the political spectrum makes the reform programs vulnerable to political changes. This case refers to Poland's education policy, changes and their effects, accomplishments and failures within the last twenty years.

Keywords Curriculum reform · Key competences · Key skills · New core curriculum · Lowering the school age · KREATOR project · Assessment of key competences · Poland in PISA

A note from the editors:

Outstanding specialists of the Warsaw Evidence Institute, who have experience in high positions in the national Ministry of Education, tell about the Polish educational experience. Perhaps that is why a feature of the material is the attention to the political process of education renewal. This experience is extremely interesting, since Poland has undergone a reversal of educational reform, and to a large extent this topic resonates with the discussion in the chapter on England. Nostalgia for "powerful knowledge" forced the reformers to abandon some of their innovations. Another important feature of the Polish case is the systematic use of the PISA study to promote new educational results.

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M. Dobryakova et al. (eds.), *Key Competences and New Literacies*,
UNIPA Springer Series, https://doi.org/10.1007/978-3-031-23281-7_9

Highlights

- Poland is one of the countries which has made the biggest progress in the development of student competences measured by the Programme for International Student Assessment (PISA). As a result, the country has been considered a top performer in the development and promotion of key competences in school education.
- In Poland, a clear and coherent 'key competence strategy' has never been adopted—but key competences, even if not labelled as such, were introduced into the national core curriculum (2007) and promoted by several programs and initiatives.
- Poland demonstrates that a change in a broadly defined learning environment can have a significant impact on students' outcomes, even though such objectives were not clearly articulated and operationalized.
- The lack of a well-planned information campaign and a public discussion often brings about a negative social reaction and can stop even an objectively efficient initiative.
- Teaching key competences within special projects (e.g., with the help of European and non-governmental organizations) may help individual learners, but hardly can bring about a sustainable change.

9.1 Basic Data on the School Education System of Poland

The structure of Poland's school system includes the following elements:

- Primary level: 8-year primary school
- Secondary level: 3 options
- 4-year general education (*licea*)
- 5-year secondary vocational schools (*technika*)
- 3-year sectoral vocational school of the First Stage (*szkoła branżowa pierwszego stopnia*) with the possibility of continuing education at a 2-year sectoral vocational school of the Second Stage (*szkoła branżowa drugiego stopnia*).

From 1999 to 2017 Poland also had a system of lower secondary schools (*gimnazja*), which was phased out by structural reform of the educational system (on the basis of an act of December 14, 2016, Law on School Education), which is described in this chapter.

Special education is an integral part of the Polish education system. Children are eligible for suitable school arrangements based on psychological, pedagogical, and medical examinations. More than half of all children with special educational needs are taught in special schools or special classes in mainstream schools, and the other half attend mainstream schools' integrated or standard classes.

Table 9.1 Preschool education in Poland

Type of institution		Number of institutions	Number of pupils
Kindergarten *(przedszkola)*	Urban	8,202	820,080
	Rural	3,944	260,782
Preschool classes in primary schools *(oddziały przedszkolne w szkołach podstawowych)*	Urban	1,977	76,595
	Rural	6,053	167,291
Preschool centers *(zespoły wychowania przedszkolnego)*	Urban	758	13,666
	Rural	970	21,423
Preschool units (*punkty przedszkolne dla dzieci starszych*)	Urban	8	184
	Rural	68	1,162

Table 9.2 Number of schools for students and number of students (2016)

Type of school	Number of schools		Number of students	
	Public, run by local authorities	Non-public	Public, run by local authorities	Non-public
Primary	11,505	1,244	2,158,481	96,034
Lower secondary	6,364	881	988,524	50,052
Basic vocational	1,393	177	147,804	12,891
General secondary	1,662	448	446,139	26,678
Technical secondary	1,622	199	475,056	16,720

Kindergartens and other preschool institutions are supervised by the Ministry of National Education. Preschool education is optional for children ages 3–5 years and obligatory for 6-year-olds.

The tables below contain general facts and figures about the educational system of Poland, with data from the School Education Information System of the Ministry of National Education (Tables 9.1, 9.2 and 9.3).[1]

The school education system is managed centrally by the Ministry of National Education which, together with regional pedagogical superintendents, supervises schools and kindergartens. The ministry decides on educational policy, outlines the content of education defining the national core curriculum, sets the requirements for schools, and regulates the conditions of teacher employment. The Central Examination Board (an agency of the Ministry of National Education) organizes national tests and exams at the end of primary school (grade 6 till 2015 and grade 8 from 2019 on), end of lower secondary school (till 2019), and the final secondary exam (*matura*). The *matura* exam serves as an entrance examination to higher education programs.

Local authorities are responsible for administration and management as well as funding allocation for kindergartens and schools. Communes—the lowest level of

[1] https://icein.gov.pl/archiwalne-dane-statystyczne/ads-uczniowie/.

Table 9.3 Key facts and figures of Poland's educational system

Number of schools	**27,906** (without special education, including artistic schools) 89%—public schools (run by local governments), 11%—non-public schools (private, run by associations or by religious organizations)
Number of teachers	**497,534** (full-time equivalent)
Number of pupils	**4.75 million**
Key laws regulating education in general	The Constitution of the Republic of Poland School Education Act of September 7, 1991 (with further amendments) replaced by The Law on School Education and an act introducing the Law on School Education (both of December 14, 2016) The Teachers' Charter (with further amendments)
Key laws regulating curriculum	The Ordinance (Regulation) of the Minister of National Education on Core Curriculum for General Education (*Podstawa Programowa Kształcenia Ogólnego)* The Ordinance (Regulation) of the Minister of National Education on framework teaching plans (*ramowe plany nauczania*) The Ordinances (Regulations) of the Minister of National Education on Core Curricula for Vocational Education (*Podstawy programowe kształcenia wzawodach*)
Documents that schools use to regulate their own activities	The school care, moral educational, and preventive program approved by both Teacher Board and Parents' Council of the school; The school organization chart, accepted by the regional school superintendent (*kurator*) and the authority running the school (local government for public schools)

public administration—are responsible for public kindergartens and primary and lower secondary schools, while districts are responsible for public upper secondary schools. The greater part of school financing comes from the public budget. The amount of general spending for all local government units is defined annually in the budgetary act.

Teacher employment in public institutions as well as their salaries and promotion are regulated by the Teacher's Charter—a parliamentary act which grants teachers a unique professional position.

9.1.1 Non-public Schools

Non-public schools first appeared on the educational scene of modern Poland after the reforms of 1989–1990. Most of them were initially set up by groups of teachers and parents involved in foundations or associations. Such schools in Poland have a right to offer qualifications equivalent to public schools provided they follow the national core curriculum and employ qualified teachers. These requirements are controlled by the regional school superintendents (*kurator*).

Non-public schools have more freedom in teaching programs and methods of instruction. They apply curricula developed by teachers, often with the active involvement of parents and students. Such innovative approaches are spread through the whole system of school education, influencing public schools teaching as well.

9.1.2 Teachers' Training

There are two types of initial teacher training in Poland. Teachers of preschool and elementary education are trained in integrated BA or MA courses at education departments (faculties) of higher education institutions. Secondary school teachers start their education from subject-specific faculties (that is, mathematics, biology, and so on) and then (consecutively) take relevant teacher training courses (pedagogy, psychology, and didactics), which are considered a minor specialization.

Key competences are not specified in any of these teacher training programs. Moreover, when new ideas are promoted and introduced into school programs (like teamwork projects in lower secondary schools) the change in teacher training programs usually lags behind or remains unchanged.

Teacher studies are popular among secondary school graduates. However, this is not a result of the prestige of these studies nor the prospects for a future career. Teachers' salaries, particularly in big cities are not competitive. Studies on pedagogy are considered not difficult, so it is a relatively easy way to obtain a higher education diploma. They are often offered by small private universities which charge relatively low fees (Table 9.4).

Table 9.4 Teacher age group distribution 2017

Age	35 years or less	36 to 45 years	46 to 55 years	56 to 65 years	More than 65 years
Rural schools					
	24.60%	30.50%	33.90%	10.60%	0.40%
Urban schools					
	24.20%	30.60%	30.60%	13.40%	1.30%

Source Calculations on the data from School Education Information System

9.2 Employers' Expectations

Polish employers often complain in the media that school graduates are not prepared for the jobs they apply for, especially mentioning the attitudes of young people and lack of skills in areas such as communication, the ability to work in a team, readiness to learn and master new skills, and the ability to act in a changing environment.

Among the few representative studies into the opinion of employers, the most important is 'The Study of Human Capital' research project (the *BKL* Study[2]). This has been conducted annually since 2010, by the Polish Agency for Enterprise Development in cooperation with the Jagiellonian University of Kraków. This systematic research allows the monitoring of changes in the competences in Poland's labor market. According to this study, Polish employers expect the following competences from candidates:

- Self-organization (indicated by 44% of employers), involving independent organization of one's work and its effectiveness—self-starting, independence, time management, decision making, initiative, and resilience to stress
- Interpersonal skills (important for 40% of employers), including contacts with others, communication, team cooperation, and the ability to solve problems
- Professional skills (mentioned by 26% of employers).

9.3 Major Milestones in the National Curriculum Transformation

9.3.1 1989–1990: Transition to Democracy and Market-Based Economy

Following the great political and economic changes when Poland passed from a former Eastern Bloc country to a democracy, some changes in the curriculum were introduced. They affected such disciplines as history (elimination of 'blank spots') and Russian language (this stopped being compulsory and received equal status with other foreign languages).

Soon English became the most in-demand foreign language at schools, and the lack of English teachers forced the Ministry of National Education to launch programs to attract native speakers as schoolteachers. In collaboration with foreign organizations such as the Peace Corps, British Council, and Voluntary Oversees, such programs attracted people of very different backgrounds, from retired teachers to young enthusiasts. They influenced Polish schools with a different organization culture and alternative pedagogical ideas.

English learning materials also came to the country, as complete sets of student textbooks, workbooks, and manuals for teachers (in contrast to the previous practice

[2] Bilans Kapitału Ludzkiego. https://www.parp.gov.pl/publicationslibrary/ebook/762.

of Polish publishers). Attracting teachers as clients, international publishers provided teacher training, promoting new learning methods and developing, in particular, communication skills (language as a tool for communication).

During the same period, non-public schools started to be established, demanding flexibility in the application of the rigid and detailed national curriculum and other regulations (number of lessons for each discipline, interdisciplinary coordination, even class size). Responding to this, the Ministry of National Education introduced the concept of 'authorship programs'. This opportunity has been used by a relatively small number of schools and teachers and such programs have not been properly evaluated, attracting critics of the national curriculum regulations.

At the beginning of the 1990s the Polish economy suffered from a major economic crisis. The public sector budget was slashed, along with the budget for education. The Ministry of Education needed to reduce the number of compulsory learning hours at schools, as well as the curriculum content. A minimum curriculum was provided, containing the core knowledge or the most important content necessary for all schools. At the same time, schools and local governments were allowed a certain degree of independence in defining their own curricula. Head teachers obtained several teaching hours to use for the school's specific needs. Between 1991 and 1998, attempts to make the curriculum less detailed continued, offering more freedom to schools and teachers in deciding on learning methods, resources, and even content.

9.3.2 1998–1999: Comprehensive Educational System Reform

The government formed after the parliamentary elections of 1997 decided to launch a comprehensive reform of the whole educational system of Poland with the following targets:

- Raising educational attainment in society by increasing the number of graduates with secondary and higher education qualifications
- Ensuring equal educational opportunities
- Improving the quality of education.

To achieve these objectives, the Ministry of Education introduced a major system reform in 1998–1999 to change the structure of the school education, redesign the core curriculum, introduce new pupil assessment tools, and modernize the school inspection system.

At this time, the discussion on key competences was at its initial stage internationally (Council of Europe seminar in Bern took place in 1996 and the launch of the DeSeCo project happened in 1997) and did not directly affect the policy debate in Poland [1].

Curriculum reform was a key element of these changes. The new core curriculum replaced previous detailed and uniform curricula and opened opportunities for

teachers to use various programs, methods, and approaches. Schools could choose from curricula available in the market or develop their own curricula. The textbook market was liberalized, and teachers were able to decide which textbook to use from a ministry approved list.

By extending the autonomy of teachers, and giving them more freedom, the ministry sent a clear message that it trusted their professional competences.

To measure learning achievements, a system of national tests and examinations was introduced, covering all pupils at the end of successive stages of education (primary, lower secondary, and upper secondary education). The responsibility for examination preparation, administration, and evaluation was given to the newly established central and regional exam boards.

The reform can be described as a revolution since it led to a visible change in the school system structure and, in particular, the introduction of new lower secondary schools (grades 7 to 9) and the reduction of primary education from 8 to 6 years. After graduating from a lower secondary school, students can continue their education in 3-year general secondary schools (academic track), technical secondary vocational schools (4 years) or in 3-year basic vocational schools (not offering full secondary education). Most students aspired for general education with the prospect of continuing their education at the university level. Basic vocational schools had low prestige and were considered the worst option.

The biggest impact on learning outcomes (or delivered curriculum) was the introduction of external exams at the end of each level of schooling: primary, lower secondary, and upper secondary. In particular, that impact was made by high-stakes exams: the one at the end of lower secondary school (selection to general or vocational secondary schools) and the final secondary school exam—*matura*, which replaced entrance exams for universities.

After 2000, Poland has continuously and noticeably improved student competences measured by PISA. Rigid data analysis showed that the improvement was an effect of the 1999 reforms, especially the extension of comprehensive general education as a result of the newly created lower secondary schools [7] and the postponement of tracking to different types of secondary programs by one year.

Undoubtedly, this has not been the only success. The whole idea of lower secondary schools and new opportunities released the energy of teachers, school directors, and local authorities. New curricula opened market opportunities for educational publishers who then invested in teachers' professional development. Also, NGOs found a niche for their activities both in formal and non-formal education. All these factors (and many others) were important, but structural reform was probably the key one.

The 1999 reforms were introduced within a very short time frame and one which did not allow a wider debate, both among experts and the public. It was therefore not surprising that discussions started almost immediately after the launch of the reform.

Communicating the reform, the Ministry of Education focused on convincing teachers that the change was feasible and would bring good results. There was not enough promotion of the main goal of the reform: equal access to good quality

education at all levels, especially in rural areas, where new schools well equipped with human and material resources could make an impact.

However, public discussions focused on the problems of lower secondary schools and stereotypical views on teenagers misbehaving—that reflected in public opinion polls. At the early stage of the reform it was difficult to argue, as there were real problems with the organization of new schools, development, and implementation of new curricula, provision of textbooks, and so on.

Real results in learning outcomes and participation rates were seen after a couple of years and sound evaluation procedures. An opportunity to promote this success story appeared when the 2003 PISA results were released. However, this was a time of big political change in Poland, and there was no one taking ownership of the 1999 reform. So, despite evidence of the success of the reforms, public opinion remained unchanged, continuing to see lower secondary schools as problematic.

The debate became more heated when new external exams were introduced in 2002. The most discussed issue was the level of detail in the core curriculum and in the examination standards, which were described in two separate documents. These debates led to the revision of the national core curriculum in 2007–2009.

9.3.3 2007–2009: New Core Curriculum

Improvement in the average PISA results could not cover the difficulties Polish students had with PISA test items that required a non-standard, problem-solving approach. Young Poles were very good at applying algorithms, but most of them were hopeless when facing a new, unfamiliar problem. Taking this into account, the Ministry of National Education decided to initiate work on the modification of the national curriculum, which would:

- Describe the expected learning outcomes for each stage of education;
- Indicate the main objectives of teaching each school subject; and
- Define the requirements of central assessments.

Joining the European Union in 2004, Poland also joined the European debate on the role and quality of education and training in the Union within the framework and limits of the ‘open method of coordination’. In 2006, the European Parliament adopted recommendations on key competences for lifelong learning [4]. However, this debate at the European level did not influence national policy directions.

Following intensive work by experts and public consultation, a new national core curriculum was introduced in 2008.[3] It was characterized by a shift toward learning outcomes which were linked to examination standards integrated into the core curriculum [2, 8].

[3] Regulation of the Minister of National Education of December 2008. https://isap.sejm.gov.pl/isap.nsf/download.xsp/WDU20090040017/O/D20090017.pdf.

The core curriculum was organized into two layers:

- The basic layer comprises 3–5 general requirements for each discipline, defining the main objective for learning a certain discipline at a certain education level. For example, for mathematics at lower secondary school, the general requirements include mathematical modeling, strategic thinking, and mathematical reasoning and argumentation. This implies that the whole teaching process should be oriented toward developing these skills.
- The second layer consists of detailed requirements, describing the specific knowledge and skills to be mastered by students, that is "a student can solve simultaneous equations." However, these specific requirements serve only as a tool for achieving the more general aims, as defined by the general requirements.

9.3.4 2013–2015: Lowering the School Age

A new reform initiated by the ministry aimed to raise the preschool enrolment rate by lowering the starting school age of compulsory education from 7 to 6. This decision triggered strong opposition among parents, and the ministry was not able to offer convincing arguments.

Lowering the School Age in Poland

Parents were concerned about the readiness of school buildings, teaching programs and methods, and especially the quality of after-school activities for 6-year-olds. In kindergartens, children were properly cared for and educated 8–9 h a day, allowing parents to work normally, while at many schools the only option for a student to stay after 4 h of study was to join a big group with a very limited program of activities

Protesters launched a campaign 'Save the kids' and organized a civic movement in 2014 which collected more than 1 million signatures calling for a national referendum about the educational reform. This proposal was supported by the opposition, but Parliament rejected it, arguing that its questions were too specific for a national referendum

Eventually, school education in Poland became compulsory for 6-year-olds in 2015. However, just few months later, following parliamentary elections where the opposition came to power, the new government started to reverse this educational reform. It was very clearly explained by the Prime Minister in an interview in November 2015:

"In the context of education, as well as the problems of Polish families, it is important to talk about the compulsory education of six-year-olds introduced against the will of parents. Our government will reverse these changes. Polish parents will have the right to choose, because they know their children best.

Parents will decide whether their child will go to school at the age of six or seven. This change will be carried out within the first hundred days of our government"

9.3.5 2017: Next Initiatives to Transform Poland's Educational System

Poland's current government came to power in 2015 with a promise to reverse most of the previous education reforms and, most importantly, to bring back the old system with 8 years of primary schooling, removing lower secondary schools. The authors of this reform referred to the widespread opinion of the population, which was demonstrated by the aforementioned support for a referendum. In their view, this was a stronger argument than expert comments based on the results of international studies like PISA.

In the first months of office, the government amended the School Education Act returning the mandatory school starting age to 7 years. This reversed the decision of the previous government to start primary schooling at the age of six years.

In December 2016, despite the protests of teachers, parents, local governments, and key opposition parties, the government passed a new Law on School Education, eliminating lower secondary schools.

The Ministry of National Education used surveys of public opinion as the main argument to support the proposed changes, with virtually no sound rationale for the changes being presented. The ministry used as 'arguments' small, one-sentence quotations from various studies and papers, presenting them out of context. Some 200 researchers submitted a letter to the minister protesting against the misuse of their studies, but there was no official response to this.

Poland's largest trade union of teachers, ZNP (Związek Nauczycielstwa Polskiego), collected almost 1 million signatures and submitted a motion to Parliament calling for a referendum. Parliament deliberated on the proposal until the summer holidays of 2017 and then rejected it, arguing that it was now too late to organize a referendum. From the beginning of the school year 2017–2018, intake to lower secondary schools (gimnazja) has been suspended.

This reform has been accompanied by changes to the national core curriculum. This started in September 2017 in grades 4 and 7 of primary schools and changes were introduced, grade by grade, until 2023. The curricula for general and vocational secondary schools have been changed as well.

The updated curriculum put more emphasis on knowledge acquisition within narrow disciplines. Such focus is motivated by public opinion on the overall low quality of secondary schools, offering easy access to low-quality tertiary educational

institutions. Reformers insist that more centralized and strict regulations, as well as a discipline-based focus, should structure the curriculum as it is easier for assessing.

As the changes are still in progress, it is too early to draw any firm conclusions on the possible impact on students' competences and performance of the system.

9.4 The Core Curriculum and Its Framework

The core curriculum for general education is discipline-based. It focuses mostly on specific, discipline-related results, but also includes some more general learning outcomes. For each level of education, the core curriculum defines objectives, key skills, and tasks for schools and teachers.

The educational objectives are threefold and encompass the acquisition of knowledge and skills, as well as the development of attitudes for living in the modern world. The attitudes are not described in detail.

Key skills are defined for each educational level. For example, for primary education they comprise.

(a) **Reading**, including understanding the text and the use of knowledge permitting intellectual, emotional, and moral development and social participation;
(b) **Mathematical thinking**, which includes at primary level the use of basic mathematical tools as well as basic mathematical reasoning in everyday life;
(c) **Scientific thinking**—the ability to formulate conclusions about the natural and social world;
(d) **Communication in mother tongue and foreign languages**;
(e) **Information and communication technology (ICT) use**, including searching for information;
(f) **Ability to learn**, including the pursuit of natural interest in the world, discovering one's interests, and preparation for further education; and
(g) **Teamwork**.

The key skills for secondary education are similar, but the requirements are more advanced.

A new element was introduced in the core curriculum concerning the development of key competences and social skills. It was a requirement for each lower secondary school student to participate in a team project. This was the only example in the core curriculum when a specific learning method was defined (suspended in 2017).

The tasks for schools and teachers refer to transversal, interdisciplinary competences and are described in general terms, including:

- Development of the ability to use the Polish language, with a rich vocabulary;
- Preparation for living in the information society, developing the skills to search, select, organize and use information from various sources using ICT;
- Media literacy;

- Health education—taking care of one's own health and the creation of a healthy environment; and
- Development of attitudes important for social life, such as honesty, reliability, responsibility, self-esteem, respect for others, intellectual interests, creativity, entrepreneurship, cultural awareness, individual initiative, teamwork, civic attitude, respect for tradition and national culture, respect for other cultures and traditions, and preventing discrimination.

Clearly, although the term 'key competences' was not explicitly used, they are defined in the core curriculum.

The core curriculum also defined the **requirements for centralized exams**. Based on analysis of the PISA results, more focus was put on scientific reasoning and problem solving. For example, each mathematics exam task should contain a problem starting with words "prove that…" to evaluate the level of mathematical reasoning and argument. Scientific tasks also require analysis and arguments, not only quoting facts and numbers. One of the general requirements for history was "critical analysis of information sources."

Following the change to the structure of the school education system introduced in 2017, the core curriculum was modified as well. The changes mostly concentrated on the subjects and distribution of the content (themes) among grades. The description of the general requirements (in the introductory part) remains almost unchanged but the 'names' of key competences (scientific reasoning, mathematical thinking, team work, and so on) were removed.

9.5 Practices of Key Competences Development and Evaluation in Poland

When Poland joined the European Union (2004), funding from the European Social Fund became available for schools and other educational institutions. Key competences (defined in the European Parliament's recommendation) were mentioned in several documents. However, the calls for projects were focused on 'traditional', domain-based competences: math, science, ICT, and foreign language. The projects selected through competitive procedures offered organization of additional—after-school or out-of-school—activities but were not integrated into the curriculum. This therefore contributed to the knowledge and skills of some students but probably failed to change school culture and the provision of key competences in 'mainstream' schools.

9.5.1 Projects for Key Competences Promotion in Schools

School practices and the learning environment are crucial for the development of key competences. These aspects are very generally mentioned in the Polish core curriculum and other official documents, but no coherent strategy or program has been proposed and implemented. The development of key competences in school has never been evaluated or inspected. There was neither broad public debate on key competences nor consultations with stakeholders.

However, there have been a number of small, independent initiatives, contributing to the key competences promotion and understanding. The KREATOR project (see Box 9.1) is particularly interesting, as it successfully translated the broad concepts of policy debates at the European level into recommendations and guidelines for daily school practices.

Box 9.1. KREATOR Project [5]

In 1995, the Ministry of National Education began implementation of the KREATOR Project, supported by European Commission funds (PHARE[4]), the aim of which was to "include key competences into the teaching process."

The KREATOR project used as a starting point the conclusions of the Council of Europe symposium on 'Key competences in Europe' [3] and proposed the following list of key competences:

- Planning, organization, and assessment of self-learning
- Effective communication in various situations
- Effective team work
- Problem solving in a creative way
- Efficient use of computers and IT

The project was implemented by a group of teachers working in teams in several Polish towns. Several guidebooks were prepared, describing ways to introduce key competences and organize classes and school operations. It is worth quoting an extract from of one of these guide books:

If, in your school, you want to undertake the task of including key competences into your teaching, remember some issues that seemed important to us

- *Think together, what do your students need key competences for? Develop the school's own task, considering the actual needs of your students after graduation and what you can and want to give them instead of looking only into regulations. Doing anything against self mostly leads to time losses, serving no purpose.*
- *Remember, if you require your students to use their key competences, you need, first, to use these competences yourself. We have, many times, found*

ourselves breaking the rules of discussion or effective team work. We are aware that it is more difficult for teachers to communicate with students than for students to communicate between themselves.

- *A teachers' working style during classes is the most important thing. Key competences can be acquired by students only when performing their tasks independently. The so-called 'hints' are only cheating our own conscience and making real learning practically impossible for students. This change of our own role can become a nightmare, but without it we are only reciting beautiful slogans while the essence remains the same.*
- *We do not have to move away from skills and knowledge in subject teaching if we want to shape key competences. Each group task should begin with an understanding of one's role in a team; each exchange of views should follow the rules of effective communication. If a teacher, after the task performed, asks not only for results but also for methods applied, the students will think in terms of the learning process. This reflection becomes—for both the student and the teacher—a source of planning the development of key competences*
- *Assessing the use of key skills by the students is the most important and, at the same time, the most difficult process. There are no ideal methods of assessing key skills. The teaching staff in each school has to agree on their own ways and means. This debate has an extremely high value that justifies undertaking efforts toward key skills at schools.*

When the European Commission PHARE financing stopped (in 2000), the team was dissolved and the process of defining key competences was discontinued. The project results were used only to a minor extent in further curriculum reform work

9.5.2 NGO Initiatives

NGOs have played an important role in promoting competence-based learning in Poland. Several powerful organizations were established in the early 1990s, such as the Polish Children and Youth Foundation (PCYF, *Polska Fundacja Dzieci i Młodzieży*),[5] the Centre For Citizenship Education (CEO, *Centrum Edukacji Obywatelskiej*),[6] the Junior Achievement Foundation of Poland (*Fundacja Młodzieżowej*

[4] https://ec.europa.eu/neighbourhood-enlargement/instruments/former-assistance/phare_en.

[5] http://www.pcyf.org.pl/index.php?lang=en&s1=fundacja&s2=onas.

[6] https://glowna.ceo.org.pl/english.

Przedsiębiorczości),[7] and many others on a smaller scale. Inspired by western best practices, they carefully honed their programs and sought financial support, and courted media coverage.

One of the most innovative examples of an NGO's work in partnership was the CEO's campaign **Classy School** ('*Szkoła z klasą*'). It was co-run by CEO and Poland's biggest daily newspaper, 'Gazeta Wyborcza'. The idea was that the pedagogic framework and guidance were provided by educational experts from CEO, but all the operations were carried out at and by Gazeta Wyborcza. The aim was to promote the initiatives of students, individual teachers, and schools. When the project started in 2002, it was initially planned for 400 schools, but eventually the campaign involved over 5,000. Because of its success, several phases were undertaken, and the project developed into a complex, multi-stage system of facilitating change in education, with sub-programs focused on whole schools, individual students, informal student groups, individual teachers, and student–teacher teams.

Successful participants of the project got the opportunity to take part in further training in the 'Classy School Academy'. Two innovative features of this program were its 'online-only' format (all tasks were reported via online forms and most communication was via email) and social control as the main form of validation (the reports were published on the web; no one formally checked what happened, but all activities were transparent for all the community). Thus, the project contributed to promoting ICT competency and building a spirit of trust (possibly the most important effect). CEO also runs several other comprehensive programs promoting innovation at schools (improving teaching, school environment, and school leadership).

Educational Research Institute (IBE, *Instytut Badan Edukacyjnych*) also developed and runs an open database of 'good practices and didactic tools',[8] involving history, Polish language, mathematics, and science. Although mainly addressed to teachers, students and parents can also benefit from it. User comments show it is highly appreciated by teachers as a helpful tool for their everyday work. The database development was funded by the European Social Fund in 2007–2014 (since then, the scope of activities has been reduced).

Another program that explicitly promoted competence-based learning was PCYF's projects 'Life Skills for Employability' (2006) and 'Life Skills: Social Skills Coaching' (2007). They were delivered as part of an international program run by the International Youth Foundation and supported by General Electric. The program was directed to vocational and technical secondary schools. Students were trained in three areas:

(a) Personal development, understood as the skill of appropriately evaluating one's resources, setting goals, and leadership
(b) Problem solving, consisting of communication skills, the ability to reach agreement, and conflict management

[7] https://junior.org.pl/pl.

[8] http://bnd.ibe.edu.pl/.

(c) Development of work-related skills, understood as the ability to work in teams, work ethics, self-evaluation, the ability to take risks, project management, and time and money management.

The program consisted of teacher training and offered syllabi that could be adapted and used in vocational schools. It also provided microgrants for student projects.

9.6 Key Competences Evaluation: Poland in PISA

Before 2000 and the first PISA study, Poland did not participate in any international comparative assessment of student achievements (except for the International Association for the Evaluation of Educational Achievement Civic Education Study in 1997). The decision on joining PISA was taken at a very advanced stage of its conceptual framework and the development of instruments. Hence, Polish experts neither contributed to that work nor were the concepts and assumptions debated in Poland.

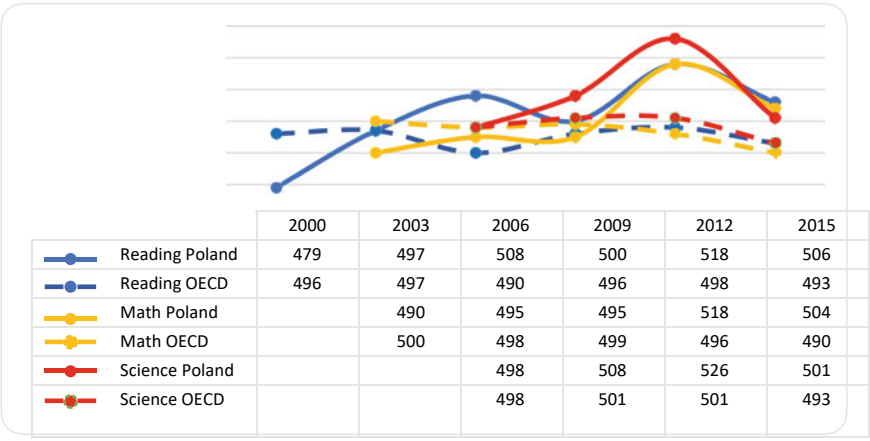
No systemic monitoring focused on key competences has been undertaken in Poland in recent years. As a result, PISA remains the main and most reliable source of data on the key competences of Polish youth.

Figure 9.1 shows significant improvements in Polish students' performance in PISA [1, 6]. The results in all areas (reading, math, and science) improved from a level below the Organisation for Economic Co-operation and Development (OECD) average (500 points) to well above that average in 2012. The scores in 2015 were lower (but still slightly above the OECD average). This is probably the effect of the change from traditional paper tests to computer-based tests. Earlier additional components of PISA which used computers have shown that Polish students had difficulties responding to computer tests.

The results of PISA 2000 show the competences of 15-year-old secondary schools' students had not yet been affected by the system reform of 1999, while 15-year-olds in 2003 were the first group attending lower secondary schools introduced as a result of the reforms. The results in 2000 varied hugely depending on the school type: the mean score of vocational schools' students was 358 points, while the mean for general academic schools was 543. The significant progress between the first and the second cycle of PISA was the effect of the delay in general versus vocational track selection by students, as they continued in lower secondary schools, and this helped to improve the results of low-achievers.

The pupils covered by the following wave of PISA in 2006 had been part of the reformed education system for most of their school years. They took the final primary school test in 2003 and were prepared for the final lower secondary school exams a few weeks after PISA in 2006.

In math, Poland improved its score from 470 points in 2000 to 495 in 2006. Reading scores improved from 479 to 508, while science scores increased from 483 to 498 (see Fig. 9.1).



	2000	2003	2006	2009	2012	2015
Reading Poland	479	497	508	500	518	506
Reading OECD	496	497	490	496	498	493
Math Poland		490	495	495	518	504
Math OECD		500	498	499	496	490
Science Poland			498	508	526	501
Science OECD			498	501	501	493

Fig. 9.1 Poland's PISA scores (compared with OECD)

The next significant leap in Poland's PISA results occurred between 2009 and 2012. This was probably the effect of the new core curriculum being introduced in 2009, which promoted such skills as problem solving, critical analysis of information, scientific reasoning, and argumentation. These skills/competences are similar to those measured by PISA and are widely recognized as relevant for the twenty-first century. If we agree that developing such competences is one of the priorities of education, we can argue that PISA results provide support for a positive evaluation of the 2009 curriculum reform and appropriate modification of national exams. It is important to note, however, that there is no strong evidence to confirm this evaluation.

After PISA 2003, experts in the Ministry of Education claimed that the improvement in results was caused by the extension of comprehensive general education. Based on this, the ministry decided to use the so-called 'national option of PISA'. The PISA test was applied to assess Polish first-grade students in upper secondary schools (they are one year older than the PISA standard target group).

This test, applied with the main PISA study from 2006, revealed significant differences in achievement among students of various types of upper secondary schools (see Table 9.5). In 2006 and 2009, upper secondary school students performed better than lower secondary school ones. However, in 2012 younger pupils had similar results to the older group.

Students at basic vocational schools were getting lower results, thus confirming that selection, although postponed by one year, still affected negatively student achievements. In any case, the results of students in vocational education were still considerably better than those of similar students in PISA 2000, demonstrating the long-lasting effects of an additional year of comprehensive education, a positive implication of the 1999 educational reform. The negligible differences in the results of 15- and 16-year-olds in 2012 resulted from a significant increase in the scores of the younger group. This could be linked to the introduction of the new core curriculum

Table 9.5 International PISA results for 15-year-olds and national PISA test for 16-year-olds[9]

	2006			2009			2012		
	Math	Reading	Science	Math	Reading	Science	Math	Reading	Science
General upper secondary	566	581	572	559	565	565	571	570	575
Technical upper secondary	495	503	496	495	487	505	506	502	507
Basic vocational	410	389	410	402	392	413	417	409	430
16-year-olds (1st grade of secondary schools)	514	520	516	506	503	514	519	516	524
15-year-olds (international PISA, 3rd grade of lower secondary schools)	495	508	498	495	500	508	518	518	526
Difference in PISA scores at 15 and 16	19	12	18	11	3	6	1	−2	−2

[9] Results of the PISA international survey in Poland and national option for testing with the same PISA instruments first grade students of upper secondary schools.

in 2008 and new type of lower secondary school exam (2011), both of which affected this group of students.

9.7 Evaluation of New Core Curriculum Implementation

Between 2009 and 2014 Poland's Educational Research Institute carried out several studies to evaluate the implementation of the new core curriculum. Two of them are particularly of note, as they relate to key competences:

- 'The school of independent thinking' (problem solving, reasoning, and argumentation in reading and mathematics).
- 'The laboratory of thinking' (inquiry in science education)

The aim of the study 'The School of independent thinking' was to diagnose the competences of pupils in the fourth year of primary schools, first year pupils in lower secondary schools, and first and last year students in secondary schools. The study covered complex skills applied in the Polish language and mathematics: formulation of problems, creating strategies for problem solving, interpretation, reasoning, arguing, analysis, and synthesis.

The inspiration for this study came from the results of PISA 2009, which showed that Polish students do better in regular, imitative tasks while they have problems when independent, critical thinking is required.

The study discovered that the biggest progress in the development of the complex skills occurred between grades 4 and 6 of primary schools. At the higher levels of education, students mainly use and master those skills and do not learn new ones. The other finding is the big difference between vocational school students (who have a very basic level of competences) and students of general secondary schools. Although even in that group there was the tendency to follow the methods proposed by teachers.

The study 'The Laboratory of Thinking—Diagnosis of Science Education in Poland' aimed to measure the level of scientific knowledge of lower secondary schools' graduates who had been taught according to the new core curriculum. It focused on such key skills as reasoning in science, formulating hypotheses, designing experiments, searching for and critical analysis of information, and scientific inquiry. The study assessed whether students were able to distinguish facts from opinions.

Standardized testing tools were used, covering core curriculum subjects: biology, chemistry, geography, and physics. Additional student questionnaires concerned, among others, the forms and methods used in science lessons by teachers. The study was carried out in four cycles—in 2011, 2012, 2013, and 2014, each year involving 7,200 pupils from around 180 schools.

In 2011, the tested students followed the old core curriculum and the results of that group were standardized to set a mean score of 500, to be used as a benchmark to measure the effects of the curriculum modification. Based on the students' results, 6 levels of competences were defined: level I: <350; level II: 350–449; level III:

Table 9.6 The results of 'The Laboratory of Thinking'

Discipline	% of students below level II			% of students at levels V and VI		
Year	2011	2014	Change	2011	2014	Change
Biology	21.5	20.3	−1.2	15.9	23.4	7.5
Chemistry	21.7	18.0	−3.7	16.3	24.6	8.3
Physics	21.9	20.4	−1.5	16.2	21.4	5.2
Geography	21.5	20.0	−1.5	16.2	22.0	5.8

450–549; level IV: 550–649; level V: 650–749; and level VI: >750. For each level the characteristic competences were identified and described.

The mean results in every discipline increased between 2011 and 2014, reaching 516 in biology, 523.5 in chemistry, 513 in physics, and 515 in geography.

At the same time the share of lower achieving students (level II or below) remained the same (approximately 20%), except chemistry where the change was small, but statistically significant. The share of students at top levels, levels V and VI, significantly increased (see Table 9.6). Thus, the core curriculum modification caused an increase in the share of higher-performing students, while the share of low achievers remained the same.

The lesson from Poland is complex and interesting. On the one hand, PISA was used by experts, researchers, and policy makers to defend reforms and to propose new policies that seem to have been successful in further improving the key competences of Polish students. However, the reformers were not that successful in convincing the public that the changes were beneficial. In effect, a popular and nostalgic sentiment toward the old system and the forceful encouragement of negative emotions about the type and speed of the reforms introduced in 1999 are in large part driving popular opinion supporting a reversal of the post-1999 changes.

9.8 Conclusion

Polish experience is challenging and interesting. Yes, the results of PISA were used by experts and policymakers to advocate reforms and drive new changes that helped successfully develop learners' key competences. However, the reformers failed to convince the public that these changes were beneficial. In practice, the widespread nostalgic attitude toward the old system and the powerful encouragement of negative sentiments in relation to the idea and pace of the 1999 reforms largely determined the subsequent turn of educational policy in the opposite direction.

To sum up, we would like to list the challenges that need to be addressed if Poland is going to develop an overall key competences strategy (it is very likely that this would be called a 'skills strategy' in line with the present OECD trend).

- A comprehensive key competences strategy should encompass curriculum, teaching methods, and teachers' professional development as well as good information and promotion activities.
- The scope of such a strategy should not be limited to narrowly defined key competences like literacy, numeracy, and ICT.
- Key competences cannot be 'taught' as traditional school subjects. They need to be developed in a student-centered, democratic, pro-innovative learning environment. To create and foster it schools must enjoy a level of autonomy, and teachers need to feel trust in their professional skills.
- The crucial issue is getting the support of all stakeholders through a well-prepared information strategy containing two-way communication and solid, evidence-based arguments. Lessons should be learned from Poland's efforts to extend its general education: the introduction of lower secondary schools and the lowering of the school starting age.

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