

KEY COMPETENCES AS A WAY TO CREATIVE DEVELOPMENT

Key words: key competences, creativity, development, project

Many specialists, representing such fields as sociology, pedagogy, philosophy, psychology and economy, have undertaken attempts to define the notion of competences. Their efforts were determined by educational, cultural and linguistic context. As M. Romainville reminds us, the French term *compétence* was originally used in the context of vocational education, to define abilities to perform a given task. However, during the latest a few dozen years, this term has settled in general education, where most frequently it relates to “abilities” or “potential” of an individual to act effectively in a specific situation. What is important is not only the knowledge itself, as the ability to apply it. For P. Perrenoud, teaching of competences means allowing an individual to mobilise and apply the acquired knowledge in complex situations that are diversified and unpredictable. He proposes the following definition of competences: “ability to act in many specific situations, ability based on knowledge but not limited to it”. After analysing many definitions of the notion of competences, F. E. Weinert concludes that in many disciplines, the notion of competences is interpreted as “a roughly specialised system of abilities, proficiencies or skills that are necessary to reach a specific goal”. During the symposium of the Council of Europe on competences, J. Coolahan proposed to understand the term “competence” or “competences” as “general abilities (capabilities) based on knowledge, experience, values and dispositions which a person has developed through engagement with educational practices”. (Definitions quoted after the European Office of Eurydice).

Key competences include:

1. Communication in the mother tongue This is an ability to express and to interpret ideas, thoughts, feelings, facts and opinions in speech and writing (listening comprehension, speaking, reading and writing) and to interact linguistically in an appropriate and creative form in the full range of societal and cultural contexts – in education and training, work, home and leisure.

2. Communication in foreign languages. It is based considerably on the same dimensions of abilities as communication in the mother tongue – on the ability to understand, to express and interpret ideas, thoughts, facts and opinions in speech and writing (listening comprehension, speaking, reading and writing) in an appropriate range of societal and cultural contexts (in education and training, work, home and leisure), depending on wishes or needs of a given person. Communication in foreign languages also requires such skills as mediation and understanding of cultural differences. The degree of language proficiency of a given person can be different for four linguistic competences (listening comprehension, speaking, reading and writing) and for individual languages, and it depends on societal and cultural personal context, environment and needs or interests of a given person.
3. Mathematical literacy and basic competences in science and technology. Mathematical competences include the skill of developing and using mathematical thinking in order to solve problems emerging in everyday situations. Process and activity are equally important as knowledge, whereas the basis is an appropriate proficiency in the computational skills. Mathematical competences involves – to various extent – the ability and willingness to use mathematic methods of thought (logical and spatial thinking) and presentations (formulas, models, constructs, charts and tables). Scientific competences relate to the ability and willingness to use the existing body of knowledge and the methodology to explain the natural world in order to formulate questions and draw conclusions based on evidence. Technical competences are viewed as the application of this knowledge and methodology in response to perceived human needs or wants. Competences in science and technology include understanding of changes caused by human activity and responsibility of individual citizens.
4. Digital competences. They include efficient and critical application of information society technologies (IST) for work, leisure and communication. They are based on basic skills in information and communication technologies (ICT): using computers to obtain, assess, create, present and exchange information and to communicate and participate in cooperation networks via Internet.
5. Learning to learn. This is an ability of consistent and determined learning, organizing one's own process of learning, including effective time and information management, both individually and in groups. This competence includes awareness of one's own process of learning and needs in this area, identifying available possibilities, and the ability to overcome obstacles in order to achieve success in learning. This

competence means acquiring, processing and assimilating new knowledge and skills, as well as looking for hints and using them. Learning-to-learn allows people to acquire the skill of applying previous learning experiences and general life experiences in order to use and to apply knowledge and skills in various contexts – at home, at work, as well as in education and training. Key factors in developing this competence in a given person include motivation and confidence in one’s own capabilities.

6. Social and civic competences. They include personal, interpersonal and intercultural competences, involving a full range of behaviors that prepare people for efficient and constructive participation in social and professional life, particularly in societies characterized by increasing variety, as well as conflict solving, if necessary. Civic competences prepare a person for full participation in civic life, basing on knowledge of social and political concepts and structures, as well as a disposition to active and democratic participation.
7. Sense of initiative and entrepreneurship. They indicate an individual’s ability to put ideas into action. They include creativity, innovation and risk taking, as well as ability to plan and implement projects in order to achieve intended aims. They support individual persons, not only in their private and social life, but also in their workplace, helping them to obtain awareness of the context of their work and ability to take advantage of opportunities; they are a foundation for more specific skills and knowledge needed by those who undertake social or commercial ventures or who participate in such projects. They should include awareness of ethical values and promote good management.
8. Cultural awareness and expression. Appreciating the importance of creative expression of ideas, experiences and feelings through a range of means of expression, including music, performing arts, literature and visual arts.
9. Key competences are regarded as equally important, since each of them can contribute to successful life in knowledge society. Many of those competences partially overlap and are interrelated, aspects that are essential in one field support competences in the other. Good command of basic language skills, reading, writing, calculating and skills in information and communication technologies (ICT) form the basis of learning, while learning-to-learn supports all other educating activities. Some issues can be applied in all elements of the reference framework: critical thinking, creativity, initiative, problem solving, risk assessment, decision taking and constructive management of emotions are important in all eight key competences.

On 18 December 2006, the European Parliament and the Council issued Recommendation on key competences for lifelong learning. Subsequently, on 28 September 2007, the European Commission issued a decision to implement the Human Capital Programme, one of programmes intended for implementing the National Strategic Reference Framework 2007-2013, covering the entire intervention of the European Social Fund (ESF) in Poland. The approval of the Programme is a confirmation of the main directions of developing and conducting employment policy of the government, and allows using the ESF funds in Poland in 2007-2013. The Programme is a response to challenges which the revised Lisbon Strategy poses on EU member states, including Poland. Those challenges include development of knowledge and innovations. Striving towards effective development of human resources, the Programme provides a focused support among others also in the field of education. One of the strategic aims of the Programme is to spread education of the society at each stage of instruction, while improving the quality of educational services and relating them more closely to the needs of knowledge based economy.

It should be said that the last decade brought a series of important changes in functioning of the education sector and in educational attitudes of Poles. Many of those changes were positive and contributed to a significant growth of investments in human capital. Also, we can identify a range of issues which the system of education is facing.

One of them is the quality of services offered by the education system. The problem of diversifying the quality of educational offer emerges on all levels of education, including an offer of life-long learning. This issue is demonstrated by differences in students' achievements, which on one hand show differences between the town and the country, and on the other – disproportions between regions. This differentiation results in low achievements of Polish students in the PISA tests in reading comprehension and mathematic thinking. The first test, in 2000, was taken by 265,000 students of 32 countries. Polish students ranked quite low, on the 24th place. In tests organized in 2003 (275,000 students from 42 countries), students from Poland achieved a better result in reading comprehension (improvement from 479 to 500 points), but mathematic skills remained at the same, quite low level. Subsequently, in 2006, out of 57 countries participating in the test, Polish students came in the 20th place (21st in mathematics).

Another problem is disproportions in the access to extracurricular classes. Extracurricular classes in schools have a rich and long pedagogical tradition in modelling and developing interests, in promoting talented students, helping students with learning difficulties, organizing preventive activities and those related to the choice of a carrier path. In the 1990s, the

number of extracurricular classes significantly dropped, as well as the number of participating students, e.g. in the school year of 1999/2000, these classes were attended by 34.7% of the total number of students. Although the number of those classes began to systematically grow, and in the school year of 2005/2006 even 61.4% students participated in extracurricular classes, still as regards access to extracurricular classes, the following theses can be formed:

- Teachers often conduct those classes on a voluntary basis (lack of means from the state or local government budget) or they are financed through payments made by parents (which eliminates students from families of weak financial position);
- Instructors often do not take into consideration students' needs, they base their work on forms, work methods and teaching aids which do not require any financial expenditures; in some environments (rural, economically neglected) those classes are completely inaccessible.

The needs in the area of extracurricular classes concern mainly:

- Equalization of educational chances for students from rural areas, who commute to schools, students from poor (unemployed) families, disabled, showing aptitudes and interests;
- Providing preventive care for students at risk of addiction and social pathologies and students with learning problems, who require reinforcement in preparations for further employment, in functioning within a social group.

Therefore, pursuant to the Recommendation of the European Parliament and of the Council of 18 December 2006 on key competencies in the process of life-long learning, the Academy of Podlasie in Siedlce in the partnership with the Foundation for Lubelskie Development and in the cooperation with the Paweł Włodkowic Higher School in Płock began in September 2008 implementation of the Project entitled "Key competences as the way to creative development" Contract No. UDA-POKL.03.03.04-00-046/08-00, co-financed by the European Union from the European Social Fund (Human Capital Operational Programme, Priority III, High quality of the education system, Action 3.3 Improvement of educational quality, Sub-activity 3.3.4 Modernization of the content and methods of educations). The project will last four years, *i.e.* to 31 August 2012.

The general aim of the project is to:

1. Increase, among students of primary schools, the level of key competencies as regards cultural awareness and expression, mathematical and technical skills, and communicating in foreign languages (particularly in the area of technology and mathematics);

2. Create possibilities of comparing achievements of students and student groups at regional and interregional events.

Detailed objectives of the project include:

- Increasing the level of students' knowledge and skills in mathematical and technological competences, which will bring about an expected improvement of test results by two stanines;
- Increasing the level of students' knowledge and skills in competences of communicating in foreign languages – both in the area of technology and in the area of communication, improving students' cultural awareness and expression;
- Improving students' creative activities in the areas of designing and presenting of projects, developing skills of overcoming fear and nerves;
- Increasing the level of students' knowledge about other regions of Poland;
- Increasing the level of the knowledge on methods of developing key competencies among staff in primary schools (headpersons, teachers) and representatives of managing authorities;
- Raising teachers' qualifications in the field of applying active methods in classes.

Although the Recommendation of the European Parliament and of the Council refers to eight competencies, the project under discussion develops three of them:

1. Communication in foreign languages,
2. Mathematical literacy and basic competences in science and technology,
3. Cultural awareness and expression.

Development of mathematic competences was induced first of all by poor results achieved by students in PISA tests. On the other hand, taking up the issue of technical competences was justified by the lack of a uniform concept as regards teaching this subject. The difficulties in developing such a uniform concept of teaching are accompanied by fast development of technology and constantly changing needs. Development of technical competencies is possible from early school education. This is proved by an effective way children handle modern technical devices. In the project, this competence (just like others) is developed in students of the 5th and 6th grades of primary school, and this action is carried out at the same time in Polish and in a foreign language. The purposefulness of developing these competencies in children under 12 years of age is confirmed *e.g.* by special university classes organized for children, conducted currently at the universities in Warsaw and Cracow. Introduction of mathematical and technical

competences into the project in combination with the development of communication in a foreign language is a new proposal, justified by a more successful motivation for children to learn a foreign language. Development of the competence of communicating in foreign languages was noticed in course of developing core curriculum for primary schools, which was reflected in the number of hours devoted to teaching of a modern foreign language (since 2008, also in integrated learning). In the project, this competence is not developed in the form of additional lessons, but through practical communication in a foreign language in the area of technology and mathematics during extracurricular classes. Development of technical competences is realized through a project method. In order to emphasize interregional features of the project and to make it more attractive, provincial and interregional mathematical and technical contests will be organized. Such contests will involve presentation of technical concepts, also in a foreign language. On the other hand, the interest in the issue of competences in cultural awareness and expression resulted from the fact that the level of cultural awareness and expression among children from rural areas and small towns is low. This is indicated, *e.g.* by the results of the conference of the Culture and Media Committee, organized in 2003. Differences concerning access to cultural values in big cities and in rural areas are huge. In the project, this competence is developed in two directions: through active tasks, giving children the possibility of developing creative skills, and by facilitating their participation in theatre performances and cultural events. Development of children's knowledge and creative skills will be completed by events, organized at the provincial and interregional level, aimed at presentation of their work and comparing it to the work of their peers.

Project participants include students of the 5th and 6th grades of primary schools from rural areas in the provinces of Lublin, Masovia, Podlasie and Warmia and Mazury, where stanines in competence tests were very low in recent years. Those relatively low results achieved in the test in the national scale were the reason behind the choice of provinces. Students from these provinces need support in developing key competences, but without activities financed from EFS, they have no chances to obtain such support. Implementation of the project for students of those schools is an effective response to poor results obtained in the mathematical part of the above mentioned PISA tests. It will contribute to practical use of a foreign language (learning through project activities), as well as to conscious and free cultural expression and reception of arts through children's own presentations and participation in cultural events. The project, in each of its elements, determines implementation of activities and interregional themes (all tasks of a horizontal nature), *i.e.* common tasks for all provinces, creating projects

which take into account features of other provinces, events and initiatives allowing other regions to participate, *etc.*

The project is intended to support students of the 5th and 6th grades, teachers and headpersons of selected schools, in the following amounts:

- Masovia Province: 1800 students of 30 forms (15 schools x 3 intakes of 600 students each), 15 headpersons and 75 teachers;
- Lublin Province: 1200 students of 20 forms (10 schools x 3 intakes of 400 students each), 10 headpersons and 50 teachers;
- Podlasie Province: 1200 students of 20 forms (10 schools x 3 intakes of 400 students each), 10 headpersons and 50 teachers;
- Warmia and Mazury Province: 1200 students of 20 forms (10 schools x 3 intakes of 400 students each), 10 headpersons and 50 teachers.

Totally, the project will include 5400 students of 90 forms, from 45 schools, 45 headpersons and 225 teachers. Indirectly, the project will involve a few dozen of representatives of school managing authorities.

Recruitment to the project began by sending information kit to schools and managing authorities, containing a description of the project and an invitation to participate in the procedure of selecting schools interested in developing selected competences. Invitations were sent to those schools that:

- a) obtained the lowest results in tests of 2007 and 2008 (stanines 1, 2, 3, 4),
- b) are located in rural areas (villages and towns below 25,000 inhabitants).

In response, schools were asked to prepare proposals for their participation in the project, containing:

- a) a recommended method of developing three competences with justification of the need to conduct additional classes;
- b) general information concerning the situation of the school: number of the 5th and 6th grades, number of teachers of such subjects as mathematics, technology, foreign languages, music, arts, and their interests in additional classes;
- c) information concerning students' and their parents' declaration to participate in the project.

90 forms were selected on the basis of established criteria, pursuant to the accepted structure of the number of participants in the project. Recruitment ended with signing a contract with the school, which specified mutual obligations and methods of project implementation. School ensure participation of students in classes and provide classrooms, and the supervisor of the project – development of three key competences, pursuant to the description presented in the application. The contract also included informa-

tion, confirming the approval of the Board of Teachers or of the School Council for the school to participate in the project.

The project includes eight actions:

- Action 1. Project management. The following functions were created for project management: project director, operating coordinator, reporting and accounting specialist, financial expert, and project assistant.
- Action 2. Monitoring, evaluating and testing competences. The process of monitoring, beside involvement of specialists, uses an IT system (MIS), which monitors hard indicators of the project, *i.e.* training sessions of headpersons and teachers, competence developing activities, festivals and contests, *etc.* Additionally, tests measuring students' competences were conducted at their entry to the program, and after the 6th grade, competence measurement tests will be conducted at the exit. A full assessment of the undertaking will be carried out as regards the structure of competences, students, schools, regions and implementation times.
- Action 3. Preparing project for implementation and promotion of the project. Recruitment and information kits were prepared and sent to schools. A program intended for preparing teachers to conduct classes and a framework programme of cyclical training workshops were developed. There were organized two-day training sessions for headpersons and 5-day training sessions for teachers dealing with competence development through active methods, particularly through project work. Headpersons participated in training sessions for teachers, for the first three days.
- Action 4. Providing pedagogical and scientific guidance. The guidance is provided in two directions: by a scientific supervisor, whose task is to ensure appropriate subject-matter level of programmes intended for developing key competences and their possible modifications, and operationally, by headpersons in individual schools, through ongoing supervision over the activities. This guidance is also supported by provincial coordinators and subject-matter experts, through a regular analysis of carried out activities.
- Action 5. Development of competences within KC2 – Communicating in foreign languages. Activities in this area will be carried out on the basis of prepared programmes (90 forms for 28 weeks a year, one hour weekly). This task is also combined with activity 6, described below.
- Action 6. Development of competences within KC3 – Mathematical and technical competences. A test was taken by students at the entry to

the project. The results obtained will help to develop the most adequate (adjusted to the level of competences and possible gaps in competences revealed by the test) programmes for developing mathematical and technical competences, involving also the competence of communicating in foreign languages. Depending on test results, programmes will be modified and adjusted to current needs, on an ongoing basis. Extracurricular classes (90 forms for 28 weeks a year, three hours a week: 2 hours of KC3 + 1 hour of KC2) are carried out on the basis of the programmes developed. The classes will facilitate development of both communication and technical competences. Each edition of KC3 competence development begins with competence measurement at the entry and afterwards, at the exit.

Action 7. Development of competences within KC8 – Cultural awareness and expression. Activities within this competence began with a test at the entry, and after obtaining results, an adequate programme for developing competences in the field of culture and arts was prepared. The programme is used as a basis to conduct extracurricular classes (90 forms for 28 weeks a year, 2 hours a week). Awareness and cultural expression will be deepened through implementation of projects in this area and by providing educational services, such as theatre performance or cultural events (two one-day trips during a school year). After two years of work, prepared projects will be presented at schools. Each edition of KK8 competence development begins with measurement at the entry and ends with measurement at the exit.

Action 8. Interregional initiatives. They include activities for each edition of competence development (a two-year cycle, three editions): two-day workshop training for 225 teachers, the aim of which is to prepare a kit of class scenarios for one semester, working out rules for provincial and interregional festivals of culture and art projects, rules for mathematical and technical contest with elements of communicating in a foreign language, as well as a set of tasks for individual stages of the contest, organizing a presentation of projects prepared by culture and art groups functioning at schools, organizing a festival of the best school projects in the province for students of the 6th grade, organizing an interregional festival for 12 best projects in the region, three for each province, for students of the 6th grade, organizing a mathematical and technical contest at the provincial level for students of the 6th grade who obtained the best results in tests carried out at the exit, orga-

nizing an interregional finale of the mathematical and technical contest for 40 students (10 per province). The action will end with a conference summarizing the project and with a publication.

Project implementation assumes obtaining hard and soft outcomes.

Hard outcomes include: three programmes for developing key competences, 225 trained teachers, 45 trained headpersons, 45 trained representatives of school management authorities, 5400 students participating in classes intended for the development of three competences, 270 educational events (theatre performances, cultural events) in order to develop cultural competences, 6 festivals of culture: 3 provincial and 3 interregional ones, 6 mathematical and technical contests: 3 provincial and 3 interregional ones, 1 publication on key competence development, 1 seminar for representatives of school management authorities, 1 conference to summarize the project. Hard outcomes will be monitored and analysed with the use of an IT system, as well as by reports, attendance lists, management and educational supervision, monitoring visits, expert assessments and project evaluation.

On the other hand, soft outcomes of the project include: developing mathematical and technical skills, which will contribute to the improvement of results obtained in the mathematical and nature part of a junior secondary school leaving exam; improving the skill of communicating in a foreign language; developing the skill of understanding culture and of independent cultural expression; improving the skill of project and team work; broadening the knowledge about regions; enhancing teaching techniques with project method and other activities aimed at competence development, making school classes more attractive. Soft outcomes will be analysed through: tests for measuring competences at the entry and at the exit, periodical analyses of changes in the range of knowledge, skills and attitudes of students; evaluation of the project in the FGI mode with the participation of project experts. These results will directly contribute to the realization of project objectives. Preparation of headpersons and teachers to conduct classes intended for developing competences among students will facilitate proper realization of planned activities, which consequently will contribute to increasing the level of key competences of students. Intensive work with students, not only in the form of school classes, but also through trips and events (on the provincial and interregional level) will provide an efficient method of working with students, developing teaching techniques and improving general attractiveness of forms of knowledge and skills acquisition by students.

Added value of the project consists in: introducing active methods – learning through actions, combining learning of a foreign language with learning of mathematics and technique, inducing interregional activity of

schools for key competence development. Added value of the project will also include preparing and implementing procedures for key competence development through organization of extracurricular classes in schools from rural areas (publication) and developing regional and interregional models for comparing achievements and sharing experiences (programmes for KC development, rules for festivals and contests, a set of sample scenarios for classes conducted with the use of active methods, research reports).

The project is compatible with the Human Capital Operational Program, Priority III, where one of the objectives is improvement of the teaching offer, implementing innovative teaching curricula (also in mathematics and technology), and developing key competences of students, which fully corresponds to the aims of the project. It is also compatible with the Action Plan for Priority III (2007-2008), where development of key competences is the objective and expected outcome of actions. It is also compliant with the Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning.

Attainment of specific objectives will be verifiable through the analysis of the results of educational measurements and of scientific research conducted during project implementation.

Abstract

Preparation of young people to handle challenges of information society and to maximally benefit from possibilities created by this society has been included among the most important objectives in various education systems in Europe. This made politicians, dealing with education, revise the curricula and teaching methods, which consequently increased the level of interests in key competences as elements which determine the success of an individual in subsequent participation in the society.

Competences are defined as combination of knowledge, skills and attitudes appropriate for the. Key competences are those, which are needed by every one for their self-fulfillment and personal development, for being an active citizen, for social integration and employment. Eight key competences have been established:

1. Communication in the mother tongue
2. Communication in foreign languages.
3. Mathematical literacy and basic competences in science and technology.
4. Digital competence.
5. Learning to learn.
6. Social and civic competences.

7. Sense of initiative and entrepreneurship.
8. Cultural awareness and expression.

Pursuant to the Recommendation of the European Parliament and of the Council of 18 December 2006 on key competencies for lifelong learning, the Academy of Podlasie in Siedlce, in the partnership with the Foundation for Lubelskie Development and in cooperation with the Paweł Włodkowic Higher School in Płock, began in September 2008 implementation of the Project entitled „Key competences as the way to creative development”, co-financed by the European Union from the European Social Fund. The project involves development of three competences:

1. Communication in foreign languages,
2. Mathematical literacy and basic competences in science and technology,
3. Cultural awareness and expression.

Sources

1. Eurostat 2005.
2. Key competences for lifelong learning – European reference framework, Annex to the Recommendation of the European Parliament and of the Council of 18 December 2006. on key competences for lifelong learning. (2006/962/WE.), www.zse.adner.net, 23.03.2009.
3. Key Competences, European Office of Eurydice, Brussels 2002, Polish version financed from the means of the European Commission, within the SOCRATES programme, Editorial work on the Polish version: Anna Smoczyńska, Eurydice, Directorate General for Education and Culture, Foundation for the Development of the Education System.
4. NPR 2007–2013.
5. Polish Central Statistical Office, Report on education in school year of 2005/2006.
6. Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning (2006/962/EC) EU Official Journal No. L 394/10 of 30.12.2006, www.zse.adner.net, 23.03.2009.
7. Science and technology in 2005, Polish Central Statistical Office, Warszawa 2006.
8. Strategy for Education Development for 2007-2013, Ministry of National Education and Sport, August 2005, www.ukie.gov.pl, 23.03.2009.