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Summary of the doctoral dissertation entitled

Kompetencje informatyczne nauczycieli a zastosowanie technologii informacyjno-komunikacyjnych w edukacji wczesnoszkolnej

Information and communication technologies are present in almost every field of a contemporary life. E-payments, e-invoices, e-shopping, e-banks, e-offices, e-books, e-learning and recently also e-health have become everyday reality. These activities are available due to the internet – the space which is a source of information and a channel of communication. Creating, spreading and using knowledge with constantly improving technologies has become the driving force of the development of society. That is why a current form of society is referred to as the information society. A technological expansion, which everyone experiences these days, will probably continue in the subsequent decades. The workers, well prepared to function in a digitalized world, will be in need on the job market. Creativity, critical thinking, problem solving, decision making, collaboration, information management and rapid adaptation to new situations will be among the most expected abilities by employers. Today's school ought to prepare its learners to live and work in such future.

Over the last few years, the role of education in a digital world has been discussed in the educational environment, e.g. by the Minister of National Education, academic teachers as well as representatives of education-related associations. The debates on digital school have also been covered by the media. During numerous conferences, workshops and meetings with experts, a contemporary school is analyzed and the need for a change to modernize and adapt it to the requirements of the information age is emphasized.

Adapting education to the requirements of the XXI century should focus on the latest trends in the area of teaching and learning, including technological postulates regarding the development of digital abilities. However, fulfilling these requirements is strictly connected with meeting various conditions. Upgrading school's digital infrastructure is a prerequisite to adding technology to education. Teacher preparation is a sine qua non for ICT implementation in school. Therefore, both the actions directed towards equipping educational institutions with modern multimedia and developing teachers' digital competences are crucial to integrate modern technologies into a teaching/learning process, and consequently to change a Polish school.

Elementary teachers' digital competences, their determinants, the ability to use available in schools multimedia in the didactic process, and the teachers' readiness to develop their competences are the main subject matter of this doctoral dissertation. The research undertaken by the author of the work focused on the following aims regarding the digitization of primary schools in the Swietokrzyskie region:

- ✓ to diagnose digital infrastructure of primary schools located in the Swietokrzyskie region,
- ✓ to explore the opportunities and limitations for lower primary teachers regarding the access to new technologies at their workplace,
- ✓ to determine the factors influencing the level of digital competences, declared by lower primary teachers, who took part in the study,
- ✓ to examine the relations between teachers' level of digital competences and the use of information and communications technologies at the first level of education,
- ✓ to design a model of the implementation of information and communication technologies in early education,
- ✓ to recognize lower primary teachers' needs in the area of developing their digital competences,
- ✓ to identify employers' requirements regarding the level of digital abilities of job applicants.

A catalogue of variables applied in the study comprised: length of service in the teaching profession, professional promotion grades, place of employment, professional specialization, level of teachers' digital competence, technological advancement of digital tools and software used in the teaching process, frequency of the use of digital tools and software, the use of the digital technologies in the lesson, the use of technologies in communication with parents.

The population of examined teachers comprised class teachers (generalists) and foreign language teachers working at the first stage of education in public primary schools located in the Swietokrzyskie region. Thus, professional specialization was the first important criterion applied to select the research sample. Another relevant criterion used in the study was the place of employment of teachers. Thus, four layers were distinguished: teachers working in cities

with a population of more than 20,000 inhabitants, teachers employed in towns with a population between 20,000 and 10,000 inhabitants, teachers working in towns with the population less than 10,000 and teachers employed in rural areas.

The research data was collated from 26 state primary schools, located in the Swietokrzyskie region. In total 317 lower primary teachers and 24 head teachers took part in the study. The data was analyzed quantitatively and qualitatively (with the use of Microsoft Excel 2010) and then interpreted. Microsoft Visio Professional 2013 programme was used to design a model of the implementation of information and communication technologies in primary education.

The work consists of eleven chapters. The research outcomes are discussed in the last part of the dissertation. The postulates addressed to local governmental units as well as educational authority, responsible for in-service teacher training are formulated there. Moreover, the recommendations to universities, offering lower primary teacher training on ICT integration into the teaching process, are also stated in this section.