

DIGITAL COMPETENCE OF PHYSICAL EDUCATION AND SPORTS TEACHERS AND SPORTS COACHES AS PEDAGOGICAL SPECIALISTS

Professional paper

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Abstract

In the condition of social dynamics and continuously growing requirements for the qualifications of pedagogical specialists, digital competence of the teacher of physical education and sports coaches becomes of particular significance in relation to their professional realization in the educational system. The need for constant enhancing of digital competence as part of the professional profile of pedagogical specialists requires clarification of its essence and provision of a conceptual basis and possibility for its formation and development. Thus, this article is dedicated to the demand for a conceptual vision for the digital competence of the teachers of physical education and sports coaches as a pedagogical specialists and the possibilities for full formation and development of such a competence.

Keywords: *competence approach, competence, competency, digital competence, physical education teacher, sports coach, educational system, quality of education, information technologies*

The problem of improving the quality of education and preparation of education-related specialists is nowadays gaining more importance and topicality and its solution is increasingly linked to the competence approach. The results are now associated not so much with the acquisition of knowledge, skills and habits but with the mastering of the competences necessary for one's personal development and social realization. This requires changing the existing technocratic paradigm in education with a humanistic, personality-oriented and constructivist one which aims at forming personal and socially significant qualities such as independence, self-regulation and self-reflection, personal responsibility and other key competences.

The distinction between "competence" and "competency" in the course of development of a competence approach allows identifying "competence" as a personal quality (trait), subjective characteristics and "competency" as normative, objective feature. Combining them in a concept-event pair allows for an adequate mode of scientific use and fully-developed design of technology options for their formation and enhancement.

Digital Competence - contexts of understanding

Studies of digital competence, defined as a key competence in the early 21st century, are aimed primarily at creating theoretical models, frameworks of the competences and research tools for assessing competences (Martin 2005, 2006, Helsper & Eynon 2013, Ferrari 2012). The research, conceptualization and operationalization of basic concepts such as computer literacy, digital literacy, media competence and others, lead to the defining of digital competence as a "set of knowledge, skills, attitudes (including abilities, strategies, values and awareness) which are essential when using ICT and digital media to perform tasks, solve problems, communicate, manage information, cooperate, create and share content, build knowledge effectively, efficiently, appropriately, critically, creatively, independently, show flexibility and ethics, work consciously, enjoy one's free time, participate, train, communicate, consume and expend the individual's rights and opportunities" (Ferrari 2012: 3-4).

There is a certain degree of controversy, however, concerning the content and the structure of pedagogical specialists' digital competence which interfere with its successful formation and development during their university education. In the theory and practice of education these controversies are commonly related to: (1) mis-

conceptions and inability to differentiate between systematic education of specialists in different fields (primarily those in technical and engineering specialties) in the field of information technologies, the training of teachers in computer science and information technologies, and the training of teachers in other disciplines as users of such technologies; (2) the inadequate employment of the competence-based approach in the design of the aims of education and its expected results as well as the impossibility to identify the fundamental elements of any competence; (3) the lack of a clear view of the conceptual frame of teachers' digital competence and the possibilities for its successful inclusion in their professional profile; (4) the lack of a conceptual model for the design of special didactic techniques for the formation of the digital competence of pedagogical specialists within their training as educators.

Digital competence does not only refer to knowing how to surf the Web but can be described as a range of knowledge and skills, integrated within a specific context of functioning. The European Framework for Digital Competency of Citizens (DIGCOMP), outlines five areas that define the term "digitally literate": information processing, communication, content creation, safety and problem solving. The European Union has been putting efforts in the creation of various online tools for assessment and determination of the level of digital competence (Ferrari 2013).

As for digital competencies as essential components of digital competence of the pedagogical specialists, the studies in the field have repeatedly pointed to a lack of available career development opportunities, especially in the context of lifelong learning when it comes to the use of information and communication technologies for educational purposes, as well as the lack of opportunities for entering a network for professional collaboration that could lead to the implementation of new practices with higher pedagogical effectiveness.

Digital competence of pedagogical specialists (physical education teachers and coaches)

Digital competence, defined as one of the eight key competences for lifelong learning includes "the confident and critical use of information society technologies for work, leisure and communication" (European Parliament and the Council, 2006, p. 15). Digital competence implies connectivity with the skills to use digital technologies that allow teaching professionals to work with modern information

and communication technology, computers, software applications and databases, helping them to realize their ideas and objectives in the context of their work. It is important for pedagogical specialists, particularly physical education teachers and sports coaches to have the ability to search, collect and process information and approach it critically and systematically as well as the skills to use the design tools for media information and the capacity to access, search and use Internet-based services, especially in the context of their future activities and opportunities for continuous professional qualification.

It is a well-known fact that objects and phenomena occur before the terms employed for their denotation come to be established. A preliminary conceptual frame of the properties of any competence, which offer an opportunity for its future contextual and situational interpretation, is predicated on the necessity to construe its invariant characteristics. Different conceptions of the content and boundaries of digital competence, defining it through its “cognitive, relational, and social” character, are popular in the scientific discourse (Calvani & Cartelli & Fini & Ranieri 2008). Taking into consideration its multi-dimensional structure, the difficulties of the conceptual identification of digital competence is frequently related to: (1) the inadequate knowledge of the computer competencies and the competencies for operating different digital sources of information as a basis of digital competence; (2) the impossibility to evaluate it in its totality, especially in long-term perspective; (3) its dependence on other competencies, some of which of meta-cognitive character, which facilitate and predicate its development; (4) its dynamics as a process and phenomenon as well as its social determination. These problematic issues make it difficult to identify the basic competencies of the teacher integrated in his/her digital competence. Considering the integrative nature of the latter, it is often viewed as constituted of a technological, a cognitive, and an ethic component conjoined in a contextualized fashion. (Calvani et al., 2008).

These parameters form an adequate basis for the delineation and determination of the major characteristics of the conceptual frame of the digital competence of the pedagogical specialist, which include:

- integration of skills and competencies for using up-to-date information and communication technologies and a variety of digital media;
 - abilities for critical evaluation of the content of the electronic information and knowledge of the advantages and disadvantages of digital media;
 - efficient application of digital information processing and storage devices and abilities for adequate communication in different types of environment;
 - skillful employment of information technologies and digital devices in a diversity of activities performed by the pedagogical specialist combined with an ability to project the respective skills onto a variety of levels: methodological, administrative, qualification-oriented;
 - educational design based on the creative integration of digital media in the context of the subject to be studied which can provide for a learner-centered approach to students’ performance and will also enhance the opportunities for the development of skills of cooperation, sharing, openness of expression, reflection, problem management, trust, and responsibility while promoting the sense of security and privacy;
- design of interdisciplinary educational routes facilitating students’ abilities to employ information technologies and digital devices for information processing and storing in their studies at different stages of education in view of their needs defined by their personality, age, and social attributes;

In the context of subject differentiation in education, the aspects of the digital competence of the pedagogical specialist are further defined, broadened, and enhanced to the effect of acquiring a variegated character, which is manifested in the variant that make its application and content suited for specific educational purposes. The contextual prerequisites for the manifestation of its variants however are not in conflict with the invariant characteristics of the conceptual framework suggested in the current paper. This contributes to the dynamic nature of the digital competence of the pedagogical specialist, which makes it necessary to re-define it in the context of continuous learning.

CONCLUSION

The digital competence of pedagogical specialists (physical education teachers and sports coaches), as each competence, has its own internal logic expressed in a simultaneous functioning of the system of competencies in specific contexts and in practical terms.

This logic can be designed through the clarifying the basic components of digital competence, namely: cognition, motivation and values, technology, communication and reflexion. At their core, these components include the following parameters as foundation for digital competence: (1) in the plane of cognition - the possibility of processing information based on basic cognitive processes (analysis of incoming information, synthesis, formalization, comparison, generalization, development of options to use information and forecasting the consequences of the resolution on various problem situations, generating new information, organization and storage of information into long-term memory); (2) in the plane of motivation and values - creating conditions conducive to the formation of values and value orientations, increase motivation in a different respects; (3) on the technology plane – the capacity to work with different information and communication technical equipment for storage and processing of information, technology skills to work with to work with information databases and information flows; (4) on a communication plane - ability to encode and decode the information in different systems (natural or formal), to use technical means of communication in the process of transmitting of information using CTI; (5) on the reflexion plane - awareness of the capacity for self-regulation, self-government in behavioural respect, expansion of consciousness and self-realization (Trishina (Тришина), 2005).

In order to design an environment that enables us to form and develop information competence of future pedagogical specialist, it is necessary to know this system of competences, to be able to operationalize it to the relevant knowledge, skills and attitudes.

The methodological analysis of the competence approach in education direct us to the search for cognitive, activity-based, creative, personal and axiological component in the digital competence of the future pedagogical specialists. This is the reason behind the search for specific technological solutions and possibilities for formation and development of digital competence.

These technology solutions can be successfully found based on technological variants of a project-invariant for the formation and development of digital competence which takes into account the following key determinants:

- social needs for the development of the digital competence of pedagogical specialists, in particular, physical education teachers and sports coaches;
- goal formation, complex projection and educational design of the formation and development of digital competence;
- a project developing the formation and enhancement of digital competence, containing: concept, content and procedure ;

- development of model-invariant and approbation options for forming and developing digital competence of pedagogical specialists.

Thus, with a comprehensive and methodologically sound conceptual vision it is possible to fully form and develop digital competence in future teachers of physical education and sport coaches through their university education.

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