EDUCATOR'S DIGITAL COMPETENCE AND ITS STRUCTURE

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In modern reality, in the process of professional activity, pedagogical staff faces rapidly changing requirements, which require new, wider and more complex sets of competencies.
Digital competence is one of the new concepts describing the competences related to modern digital technologies. In recent years, several terms have been used to describe the levels of using digital technologies, such as “ICT literacy”, “information competence”, “information literacy”, “digital literacy” and “digital skills”. These terms are often used interchangeably, such as "digital competence" and “digital literacy”. The concept of “digital literacy” began to be used earlier. This term refers to a person’s ability to effectively solve problems in a digital environment
Based on the approach developed at the 2017 G20 summit, five key elements of digital literacy have been proposed:

- working with information (digital content), that is, the ability to create, find, work with, combine, analyze information;
- working with computer equipment – understanding the methods of performing technical operations, understanding the structure of computers and software;
- working with media (texts, sounds, pictures, videos, etc.) – ability to evaluate media, create media content;
- communication - the ability to communicate in the digital sphere, social networks;
- technological innovations – use of various technologies in life, means of working in the digital space (gadgets, applications).

Digital competencies include a set of skills related to the use of information and communication technologies:
1) technical skills of using digital technologies;
2) the ability to effectively use digital technologies in daily life activities;
3) the ability to critically evaluate digital technologies;
4) motivation to participate in digital culture.
G. U. Soldatova defined four types of digital competence in her research [1]:
1) information and media competence – knowledge, skills, competence, motivation, responsibility related to the search, understanding, archiving and critical reflection of digital

[1] G.U. Soldatova, T.A. Nestik, Ye.I. Rasskazova, Ye.Yu. Zotova. Sifrovaya kompetentnost podrostkov i roditeley. Rezultati vserossiyskogo issledovaniya [Digital competence of adolescents and parents. Results of the all-Russian study] / M: Fond Razvitiya Internet, 2013. —144 p. (in Russian)

information, as well as creating information objects using digital resources (text, visual information, audio, video, etc.);

2) communicative competence – knowledge, skills, motivation and responsibility necessary for various forms of communication (e-mail, chats, blogs, forums, social networks, etc.) and for various purposes;

3) technical competence – the knowledge, skills, motivation, and responsibility to effectively and safely handle a variety of challenges, including computer networks, cloud services, and hardware and software;

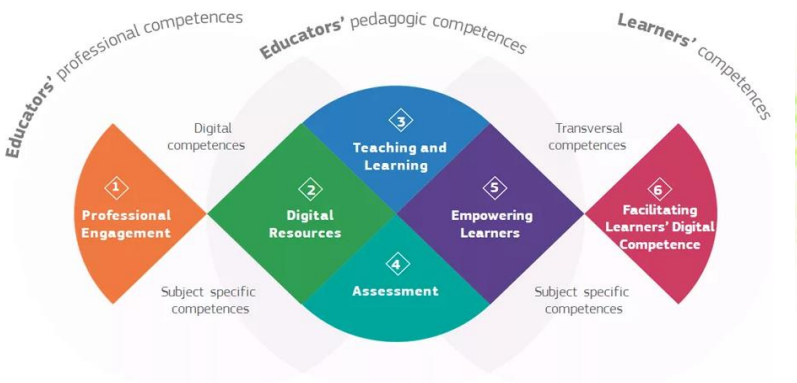
4) consumer competence - knowledge, skills, motivation and responsibility that enable the use of digital devices and the Internet to solve various daily tasks related to specific life situations, including the satisfaction of various needs.

According to P.Gilster, digital competence emphasizes the social and communicative aspects of human activity [2]. He defines the following skills as criteria for achieving digital competence:

- skills to search for the necessary information and tools for working with them, the ability to quickly master these tools (information competence);
- the ability to communicate with other users (communicative competence);
- skills to produce information in various forms and shapes (creative competence).

The Digital Competence of Educators profile developed by the European Union Education Committee identifies six areas [3] (Picture 1):

- use of digital technologies in a professional pedagogical environment;
- develop professional skills in finding, creating and sharing digital learning resources;
- formation of necessary skills in the use of digital tools in the educational process;
- to have the ability to use digital tools to evaluate learning outcomes;
- use of digital technologies to expand educational opportunities;
- to support the process of developing learners' digital competence.



Picture 1. Model of Digital Competence of Educators

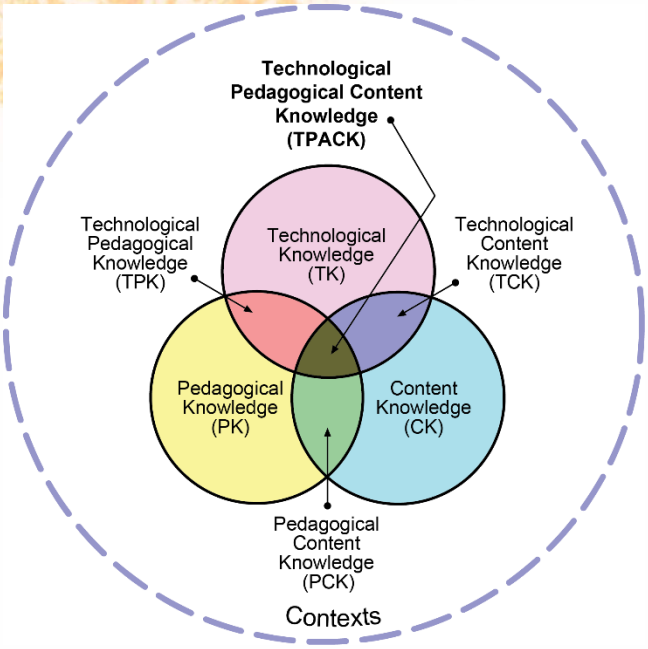
[2] Gilster, P. (1997). Digital literacy. New York: Wiley.

[3] Inamorato dos Santos, A., Chinkes, E., Carvalho, M.A.G. et al. The digital competence of academics in higher education: is the glass half empty or half full?. Int J Educ Technol Hgh Educ 20, 9 (2023). https://doi.org/10.1186/s41239-022-00376-0

The International Society for Technology Education's ISTE model focuses on six key areas::

- Creativity and Innovation,
- Communication and Collaboration,
- Research and Information Fluency,
- Critical Thinking, Problem Solving, and Decision Making,
- Digital Citizenship,
- Technology Operations and Concepts.

The TPACK (Technological Pedagogical Content Knowledge) model reflects the integration of science content, teaching methodology and technological knowledge on software[4]. This model describes the competencies necessary for the pedagogue to integrate new digital technologies into the educational process (Picture 2).



Picture 2. TPACK model

In order to integrate technologies into the educational process SAMR model was created by Ruben R. Puentedura[5]. This model consists of four levels:

At the Substitution stage, digital technologies are directly replaced by traditional technologies;

At the Augmentation stage, digital technologies significantly enrich the tasks of traditional educational technologies;

At the Modification stage, traditional educational technologies are completely replaced by digital educational technologies;

[4] Koehler, M.J., & Mishra, P. (2008). Introducing TPCK. AACTE Committee on Innovation and Technology (Ed.), The handbook of technological pedagogical content knowledge (TPCK) for educators (pp. 3–29). Mahwah, NJ: Lawrence Erlbaum Associates.

[5] Puentedura R. "Learning technology and the SAMR model: Goals, process, andpractise" Society for Information Technology & Teacher Education International Conference, Mar 05, 2017, 2.

The Redefinition stage allows to perform tasks that cannot be performed without digital technologies.

Currently, it can be observed that the model of digital competences developed by many researchers is based on the European DigCompEdu model.

There is no single approach to the concept of “digital competence of a teacher”. Even in the field of higher education in our republic clear criteria for evaluating the digital competence of pedagogues have not been developed.

The criteria and tools presented in the DigCompEdu model may not be sufficient to analyze the digital competence of teaching staff and their needs, to develop evaluation criteria and recommendations, and to propose a support system for teaching staff in using the digital learning environment. In order to comprehensively assess the digital competences of educators, we can see different approaches in developing a specific generalizing model of digital competences. We believe that these models are a comprehensive system for evaluating the competence of pedagogic personnel, as well as the organization of training courses aimed at supporting them in the process of solving professional and personal development problems.