

## ANALYSIS OF DIGITAL COMPETENCE LEVELS OF FUTURE PRIMARY TEACHERS

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### Annotation

The article describes the levels of formation of digital competence on the example of future primary school teachers. The levels are presented in a meaningful way, and didactic methods for assessing the formation of each level of digital competence are proposed. Digital competence is acquired in a personal-subjective way, as it is the result of the student's self-development, the synthesis of his activities and personal experience. As a result, it is proposed to design a student's personal learning environment as a condition for the development of digital competence in higher educational institutions.

**Keywords:** digital technologies, digital competence, competence, levels of digital competence.

### Introduction

In the context of globalization, one of the important requirements of society is the presence of a modern and competitive specialist of a certain level of competence in the use of digital technologies. An analysis of research in the field of digital competence showed that the content of the concept of using digital technologies is not sufficiently disclosed compared to the concept of using information technologies. The formation of digital competence allows a specialist to adapt to the current situation in the labor market, to develop the necessary knowledge to use open online educational platforms and other resources of the global Internet. A large number of personal environment tools raises the issue of systematization in their selection, classification and application, which requires digital skills and critical thinking, that is, the presence of knowledge, skills and abilities at all levels of digital competence formation.

**The relevance of research.** Modernization of general education leads to changes in the requirements for the professional activity of a teacher. Informatization is an important direction in the modernization of an educational institution. The introduction of digital technologies into the educational process and other educational processes of an educational institution requires professional competencies in the use of these technologies among teaching staff, in particular among primary school teachers. This, in turn, shows that the problem of professional training of primary school teachers in the field of digital technologies is relevant.

**Purpose and objectives of the study.** In the modern information society, the approach to teacher training is being improved. A feature of vocational pedagogical education is the

competency-based direction, that is, it is explained by the orientation of future teachers to gain experience in solving professional problems during their studies at a university. One of the main tasks in the training of modern teachers is the task of forming and developing the competence of a primary school teacher in the use of digital technologies as a component of professional competence. At the same time, the semantic component of the concept “competence of a primary school teacher in using digital technologies” is still not clearly defined:

- the set of professional tasks of a primary school teacher has not been defined, and his information competence can be demonstrated in solving them;
- the principles for increasing the competence of primary school teachers in the field of digital technologies and constructing the content of educational programs taking into account the structural elements of professional experience included in the content of professional training have not been defined.

In general, digitalization of the education system is a natural and purposeful process supported by the state. Digital technologies have been used in the educational process for a long time, but now the time has come; without the use of digital technologies it is impossible to organize modern lessons. Digital technologies are changing the educational process, and these changes cannot be denied. In addition, digital technologies have become firmly entrenched in our daily lives. Therefore, people need to interact with digital technologies. However, we also found some problems. The basic educational competencies do not include the concept of digital competence, but there is the concept of information competence. It is incorrect to talk about a synonym for these concepts. If you pay attention to the content of information competence, then it is not necessary to use digital technologies, but only to work with information. Digital competence focuses on the use of digital technologies in activities.

The State Educational Standard for General Secondary and Secondary Special Education of the Republic of Uzbekistan provides a general overview of the concept of competence, which is defined as the ability to apply existing knowledge, skills and abilities in everyday activities [1]. However, the concept of digital competence is not explained in legal documents.

**Methods.** The terms “digital competence” and “digital competency” are still being researched, and researchers give these terms different definitions related to human existence in a digital society. The study of this process is disclosed in the works of CIS researchers G. U. Soldatova, E. Yu. Zotova, M. Lebeshev, V. Shlyapnikov, T. A. Nestvik, E. I. Trotsenko, G. A. Afanasyeva, A. A. Ziyabkova and others. Abroad, scientists such as D. McClelland, R. Boyatzis and N. Chomsky have been engaged in research in the field of digital competence and digital competence.

Acquiring digital competence is the basis for successful human interaction with digital technologies [2]. In general, digital competencies can be defined as a set of knowledge and

skills necessary for using digital technologies in activities. Digital competence is a necessary skill for employees to perform their duties. Conventionally, it can be divided into four levels: basic, universal, general technical and special (production). As research interest in digital competence has grown, models of digital competence have begun to emerge. For example, these include the European model of digital competence of citizens [3] (DigComp 2.1) and the psychological model of digital competence by G.U. Soldatova [4].

**Analysis and results.** First of all, let's clarify the difference between the concepts of "competence" and "competence". The word "competence" comes from the Latin word "competo", which means to achieve, conform, approach, strive. The word "competence" comes from the Latin word "competens", which means suitable, compatible. From the point of view of linguistics, the main difference between these concepts is the correspondence of the parts of speech of the words formed from them. Accordingly, the concept of "competence", derived from a verb, reflects an action or skill. At the same time, the concept of "competence" is formed from the present participle of the same verb, therefore it reflects the meaning of ability, combining the characteristics of a verb and an adjective. The Latin word "competence" comes from the verb "competo" and means consistency, proportion, symmetry of parts. Verbal nouns express objectified action. Both concepts come from the same verb "competo", but "competence" is a noun and "competence" is a present participle. In other words, "competence" is an action or skill, and "competence" is a quality.

In a general sense, Digital Competence is based on the continuous acquisition of knowledge and skills, the ability to reliably, effectively and safely select and use digital technologies in various areas of human life. Digital competence is based on the continuous acquisition of competencies (knowledge, skills, motivation, responsibility), the ability to reliably, effectively, critically and safely select and use digital technologies in various areas of human life, as well as the willingness to act in this way [5]. As you can see, these two terms are not much different in meaning.

Based on the proposed interpretation of digital competence, we identify the following levels of its formation.

Levels of digital competence development:

- 1) Epistemological level - the body of knowledge necessary to process information for the necessary purposes, communicate, and mastery of terminology.
- 2) Motivational level - at which an attitude towards the use of digital technologies is formed, a readiness to acquire new knowledge, an attitude towards the information space of the Internet, including as a means of learning, and develops critical thinking.
- 3) Functional and technological level - mastering the skills of working with the global Internet in accordance with the intended purpose, using information processing algorithms, mastering communication methods to solve practical, educational and professional problems.

4) Effective-reflective level is an assessment of one's level of knowledge about digital technologies, understanding oneself as part of the digital environment.

At the epistemological level, theoretical knowledge is obtained about methods of information processing, structuring, coding and measuring information, methods of mastering software, interdisciplinarity and opportunities for professional self-improvement using digital technologies. This level of development of digital competence is characterized by the completeness and systematization of knowledge, which can be tested through preliminary diagnostics, tests, information dictations, conversations and colloquia.

The motivational level includes a set of motives, an emotional-volitional and value-based attitude towards the subject's activities in the digital environment, his abilities, their development, as well as a critical assessment when working with information, that is, a sense of responsibility for the results of his activities. At this level, the conscious need of the future specialist for education and professional development is formed, which gives rise to the need to independently set goals and achieve them in information activities. The student's motivational attention to mastering digital competence is an important condition for the effectiveness of its development. The maturity of this level can be determined through questions and answers, interviews with students, and testing.

At the functional and technological level, the student will acquire skills and competencies in the targeted use of relevant digital technologies to solve practical, educational and professional problems. This degree sets requirements for skills and competencies that ultimately provide the student with practical preparation for professional activities in the context of digitalization of society. The maturity of the level is checked through laboratory work (standard and creative tasks), projects, cases, work with LMS, work with global Internet services.

The effective-reflective level is expressed in the student's ability to consciously manage the intermediate and final results of his activities, assessing the level and quality of his results; in the development of creative abilities, a tendency to introspection, self-management, self-knowledge and self-awareness in the process of activity in the digital environment. This level of digital competence is tested through quizzes, colloquiums, labs, project defenses, and case studies.

**Discussion.** Thus, the listed levels are components of the quality of personal development and at the same time are interrelated. Moreover, the development of each level consists in the formation of its content as part of an integral system.

We consider the creation of a student's personal learning environment as one of the conditions for the development of a student's digital competence. As explains V.A.Starodubtsev, "The field of human education is a personal space used and created by the subject of activity in this global information environment in accordance with individual needs and capabilities, as well

as the realization of one's personality in the world, the chosen profession and continuous education throughout life" [6].

A personal learning environment (PLE) is a set of global Internet resources, which each student fills independently from proposed or randomly selected network resources in accordance with his wishes, thereby forming an individual design of educational tools (construction). Based on his values, the student develops a filter of PLE elements, so the formation of a personal learning environment is carried out by him consciously, on his own initiative, that is, it is based on a certain level of preparedness of the student. personality. Creating a personalized learning environment provides the competence to create the knowledge necessary to adapt to the modern labor market, using open online educational platforms and other resources of the global Internet.

**Conclusion.** As a result of this study, the creation of a PLE requires the development of digital competence, since the PLE is initially formed on its own, but later the subject acquires a sufficient number of services, tools and forms. As a result of their application in the personal environment, the question of selection, sorting and systematization arises, which, in turn, requires digital skills and critical thinking, that is, the creation of PLE allows you to acquire knowledge and skills at all levels of digital competence. The development of digital competence and the creation of digital competence are interdependent processes: without a certain level of digital competence it is impossible to rationally create PLE; only with the help of PLE can a high level of digital competence be developed. since this process is associated with the acquisition of activity and personal experience.

Thus, the creation of a student's personal learning environment is one of the necessary tasks in the context of digitalization of society, the economy and education, as well as an important condition for the formation of digital competence of specialists and future primary school teachers.

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