

MODERN COMPETENCIES OF A TEACHER FOR EFFECTIVE WORK IN A DIGITAL EDUCATIONAL ENVIRONMENT

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Abstract. *The article examines the problem of formation and development of information and communication competencies of a future teacher in the conditions of digital transformation of the educational process. The relevance of the research is due to the tasks of digitalization of education and the focus on the development of all types of digital activities of the teacher.*

Keywords: *digitalization, digitalization of education, digital educational environment, digital teacher competencies, author's content, digital resources, multimedia tools.*

Introduction

The modern world is increasingly becoming digital. Currently, digitalization has entered our lives. It confidently covers all areas of human activity. And this means that the education process should also be digital. We live in the realities of the modern and future world.

In recent years, fundamental structural and substantive reforms have been implemented in our republic, affecting all levels and components of the education system, aimed at ensuring its compliance with international standards. A developed legal framework for reforming the education system has been created, which has identified as a priority the growth of investments and investments in human capital, the development of the digital economy, and in the future the implementation of the large-scale program "Digital Uzbekistan - 2030" [2], aimed at a comprehensive transformation of the country's economy and increasing its competitiveness in the international arena.

The need to study the process of competence formation among future teachers is also due to the trend of increasing integration and globalization of the world economy; implementation of the main provisions of the concept of modernization of education until 2030 in Uzbekistan; decisions of the Bologna process and new educational standards of the third generation.

In this regard, an urgent question arises about the need to train bachelors with professional competencies in the field of digital technologies within the walls of the Gulistan State Pedagogical Institute. A new generation of students requires teachers who are able to effectively carry out pedagogical activities in the conditions of digitalization of education.

As the President of our country Shavkat Mirziyoyev noted, "... in order to achieve development, we must acquire digital knowledge and modern information technologies. This allows us to choose the shortest path to the ascent. After all, information technologies are penetrating into all spheres in the world today"[1].

The aim of the work is to generalize known approaches to the structure of digital competencies and compile a list of key competencies that affect the success of future teachers' pedagogical activities, as well as ways to create author's digital content.

The experience of recent months has shown that in the current conditions, future teachers need to learn as quickly as possible, master modern technologies, master new learning and interaction tools, as well as introduce all effective learning formats into their daily work, that is, the urgent formation of new digital competencies. To be able to navigate new information and

communication technologies and digital tools, teachers need additional knowledge and skills, and in an educational institution for the successful implementation of educational activities in a digital educational environment, a teacher must have a wide range of new professional competencies in this area.

Materials and Methods

The analysis of the literature shows that various aspects of the formation of professional competencies of future specialists have been studied by domestic scientists A.Abduazizov, L.T. Akhmedova, G.Bakieva, D.Jalolov, K.Koraeva, G.Makhkamova, K.Riskulova, F.Saidova, A.Sattorov, U.H.Khoshimov, D.Khoshimova and others.

Questions devoted to the definition of competencies and the need for their formation among students in the system of higher professional education are reflected in the works of A.V. Khutorsky, I.A. Zimnaya, V.V. Vedenskikh, E.F. Zeer, I.V. Zorin, V.P. Davydov, B. Oskarsson, L.A. Petrovskaya, J. Raven, Yu.G. Tatur and others.

The possibilities of using the information and educational environment and information technologies in universities were developed in the works of V.A. Minaev, A.I. Seselkin, E.V. Lobanova, S.S. Tueva, I.A. Smolyaninova, V.T. Gorbachev, D.P. Muravlev, E.S. Polat, Y.S. Rudenko, V.N. Odnokopytny, as well as their individual aspects - in the works of A.Y. Pankov, V.G. Gulyaev, A.B. Mednikov, V.V. Gudumak, V.V. Samarina, S.A. Sviridenko, Yu.A. Lapin.

The research of A.A. Vasilyeva, N.V. Gremina, T.D. Lavrinenko, V.P. Ignatieva, N.P. Tabachuk and other scientists is devoted to the topic of improving digital competencies of teachers. In the works of modern researchers, it is noted that e-learning as a new pedagogical environment requires new skills from teachers - digital competencies.

The works of such researchers as E.A. Barakhsanova, E.Z. Vlasov, A.I. Golikov, I.B. Gosudarev, A.V. Jozhikov, V.P. Ignatiev, T.N. Noskov, T.V. Tretyakov and others are devoted to the study of various aspects of the electronic information and educational environment and e-learning in the regional education system. The issues of e-learning implementation are considered in the works of foreign authors such as D. Aka slon, K. Corbett, W. Richardson, A.I. Skoulikari, E. Sheninger, T. Whitby, M. Laanpere [4].

The analysis of the research has shown that by now there are theoretical prerequisites for the informatization of education and the development of information competence using various pedagogical conditions, however, there is a lack of research that examines the digital competence of a teacher. There is a demand for the development of scientifically based theoretical and methodological provisions to ensure the effectiveness of the development of digital competence of students using didactic means of electronic information and educational environment.

In the course of the research, methods of comparative (comparative), critical analysis, pedagogical observation, sociometric methods (conversation, questionnaire, testing, interview), experiment, monitoring, scaling, methods of mathematical statistics, synthesis were used.

Results

In the context of this work, the leading categories are "competence", "competence", "information competence", "professional competence", "information competence", "digital competence". Despite the fact that these terms are actively used in scientific and educational literature, normative and everyday colloquial vocabulary, nevertheless, the interpretation of the concepts behind them still remains ambiguous. Before deciding on the term "information

competence" as the key for this work, it is necessary to identify the main existing approaches to the definition and the definitions of the concepts themselves – "competence" and "competence".

The understanding of competence as a set of interrelated personality qualities: knowledge, skills, skills and ways of activity is reflected in the works of T.E. Isaev, N.T. Pechenyuk, N.F. Talyzina, A.V. Khutorsky, K.V. Shaposhnikov, etc. Competence, on the other hand, is seen by these researchers as possession, possession by a person of the corresponding competence. According to the authors, a competent person is the owner of the relevant knowledge and abilities that allow him to reasonably judge this area and act effectively in it.

Thus, according to V.N. Vvedensky, the competence of a teacher integrates cognitive, operational and axiological aspects [4, p. 51]. However, we adhere to the opinion of A.V. Khutorsky, who considers the theory of competence within the framework of a conceptual system of personality-oriented learning, when the actions of subjects with objects and actions with themselves differ, that is, intra-subjectively [7, p. 3].

The competence of a teacher is a dynamically developing process that responds sensitively to modern challenges of society. In this regard, the most urgent problem in the system of vocational education is the process of forming the digital competence of a teacher as an integral component of the professional competence of a modern teacher.

In modern pedagogical science and practice, the definition of "information competence" is widely used. Researchers (O.B. Zaitseva, L.K. Raitskaya, A.L. Semenov, P.V. Sysoev, S.V. Trishina, etc.) understand information competence as knowledge, skills, skills and methods of activity in the field of information technology aimed at solving professional tasks. The information competence of a teacher is considered as a relatively new, but rapidly gaining weight element of the professional competence of an education specialist.

One of the competencies that needs to be formed in a new generation of teachers is "digital competence". In this concept we put the confident and critical use by students of a computer, tablet, tablet computer, mobile phone, interactive whiteboard. This competence is based on logical thinking, a high level of information proficiency and a highly developed mastery of digital technology. We propose to include the following knowledge in this competence: understanding the potential of digital technologies for innovation; ability to use programs for designing training sessions; knowledge of the structure and interaction of electronic devices. A standard set of computer literacy will soon be insufficient, at least it is useful to master programming at a basic level. Digital literacy refers to the ability to safely and appropriately access, manage, integrate, share, evaluate and create information using digital devices and network technologies to participate in economic and social life. Digital literacy includes competencies that in different sources include ICT skills, media literacy, communication skills for interaction in the digital world, etc.

Widespread digital skills training of the population is observed all over the world. For example, the concept of digital literacy education adopted in the OECD (Organization for Economic Cooperation and Development) countries [6] proceeds from the fact that the widespread use of digital technologies in everyday life requires people to be able to use and process complex information, think systematically and make informed decisions, constantly update their skills to meet rapid technical changes at the workplace.

Another example is the "Digital Competencies Model for Citizens" EU DigComp 2.1 [3]. According to this model, a detailed classification of digital competence is proposed, including 5

areas and 21 digital competencies. This model is used in 21 EU countries and provides recommendations for training people.

In our pedagogical activity in the preparation of bachelors as future specialists in the direction 60111700 - Russian language in foreign language groups, we have encountered the fact that many first-year students find it difficult with tasks when preparing presentations, videos, converting document formats, do not know how to use software applications in mobile phones and tablet computers, and this is dictated by time and it is a key digital competence of the modern world.

Digital competencies are the ability to solve various tasks in the field of using information and communication technologies. In order to create a digital environment in an educational institution, the teacher first of all may need skills in the field of using the creation of copyrighted content and copyrighted resources.

It is important for a teacher to have the tools to prepare content: text documents, presentations, posters, graphs and infographics. When preparing a teacher for a lesson, the ability to process videos, make complex calculations, create tests, crosswords and quizzes, mental maps, portfolios, use presentation templates and much more will be useful.

Even if there is no need to create their own content (for example, if they use materials from open sources), each student-trainee, while preparing for the lesson, somehow changes the tasks for himself and his group: focuses on the pace of the lesson, the speed of perception of students and other important components of the lesson, changes the design and template of presentations, adds or removes information from there. As practice shows, students do not know well and do not use the educational resources of the Google platform, they do not know how to work in office applications for the Android platform. This is a classic from the founder of the "genre", Microsoft. The mobile version of Office is represented by five well-known products: Word, Excel, PowerPoint, Outlook and OneNote.

To create author's content in the Russian language, we offer Web 2.0 services.[5]. All Internet services work online, and do not require the installation of software on a computer, only a stable Internet connection is needed. Using modern Internet services, a teacher can fully implement interactive technologies, advanced learning technologies, mobile learning, and gaming technologies in the educational process. *Let's take a closer look at some of them.*

<http://learningapps.org> - Web 2.0 service for creating interactive exercises used for various forms of the educational process, for example, for classes in a playful way.

Electronic didactic materials created in this service can be used in working with an interactive whiteboard or as individual exercises for students. Everyone can use the created products. There is an opportunity to collaborate with colleagues not only from your educational organization, but also from all over the world using the Internet.

The teacher can work with groups of students, quickly create exercises in the classroom, set homework, receive a hyperlink from students and check the completion of the task.

It is also possible to use illustrative, video and audio materials.

<https://wordart.com> - online word cloud generator. This web service allows you to create attractive word clouds that can be used to create temporary text content. Many developers use temporary text content when creating websites to demonstrate the design in all its glory.

It can be useful for a teacher to visualize data, information, processes, etc.

<https://www.canva.com> - an online designer for creating banners, business cards, illustrations and posters. If you think that design tasks have to be solved only by specially trained workers, then you are very wrong. Each of us, sooner or later, faces the need to make a business card, an announcement, create a presentation, an infographic or a collage. And if some people have a gift from birth, even in Paint and Notepad, to create quite decent products, then others would really need special tools that help solve tasks without long preparation and professional skills.

The Canva web service is exactly that. When working with it in just a few minutes, you can create a business card, ad, banner or illustration that is in no way inferior to professional work.



[https://www.google.ru /](https://www.google.ru/), **sites.google.com** - Google services are web applications that require the user only to have a browser in which they work and an Internet connection. This allows you to use data anywhere in the world and not be tied to a single computer.




The main advantage of Google services is that they are all combined and run on one account — a Google account. So, you only need to register once to be able to use personalized web search, email, cloud storage and much more.

In addition to documents, tables, and presentations created in the cloud storage, forms for creating interactive quizzes, surveys, and tests will be very useful to the teacher. And such a service as sites.google.com it can be used to create an educational web quest, a personal blog, a teacher's portfolio or an electronic library [5].

Touching upon higher education, it can be argued that the practices of the introduction of digital technologies affect the modernization of research activities. At the moment, digitalization has made it possible to modernize both the educational process itself and the admission of applicants to study under new higher education programs and the qualitative improvement of existing, positively proven programs.

An example of creating an author's educational resource:

	<p>Blog content Personal library for students</p> 
	<p>Resource "To the lessons of Russian language and literature"</p> 
	<p>Resource "Russian Folklore"</p>

	
	<p>Resource "Reading Chekhov"</p> 

The digital competence of the future teacher is focused on the availability of information in its various forms – not only in text, but also audio, visual.

Digital content formats that can be used in joint media design with students:

- life hack (blog of useful tips), selfie diary as the basis of UUD (universal learning activities);
- memes and gifs as visual markers of concepts and phenomena;
- websites and blogs as the development of skills of systematization and generalization of material in an interactive form;
- booktrailers (miniature videos), media illustrations for various stages of the lesson as a visualization of their content.

Media project activity is an activity in the media space, it is the development of meta-subject knowledge and skills.

For example, creating a booktrailer involves the following knowledge and skills:

- to know the contents of the book and be able to tell about it so that, without retelling the plot, to stop at the most interesting place, thereby prompting to read this book;
- choose a visual series for creating a video clip (cartoon fragments, illustrations, students creating their own drawings based on the content of the book; creating graphic objects: scanning, photographing, etc.);
- create a presentation;
- choose a soundtrack;
- record audio accompaniment: voice, sound, music; reduce the audio series;
- to carry out the process of video editing.

In the modern paradigm of digital education, when developing classes and modeling digital content, future teachers can use:

- video editors for creating media illustrations and booktrailers;
- Google, Wix designers for creating personal websites, blogs, interactive questionnaires.

Successful forms of work include the development of group projects [8], the creation of which can use the capabilities of messengers and social networks; electronic conferences with the collective participation of schoolchildren in them; the search for multimedia resources for the creation of media didactic (digital) materials; the creation of presentations and videos by students, etc. If desired, the teacher can, for example, organize a plot-based role-playing games in the course of collective problem solving based on computer-mediated communication - between individual students, groups of students, adjacent classes. The use of an interactive whiteboard

will help the teacher to significantly intensify the learning process, make frontal forms of work more effective.

Russian language and literature lessons are the main directions of using digital educational resources:

- visual information (illustrative, visual material);
- interactive demonstration material (exercises, reference schemes, tables, concepts);
- simulator programs (for example, simulator Dictionary 2.0);
- control over the skills of students;
- independent search, creative work of students.

The choice of digital teaching tools in the classroom depends on the purpose of the lesson, the type of lesson.

The following types of TSR can be most often used in Russian language and literature lessons:

- presentations (they can be used both when explaining new material, and when consolidating knowledge, and when performing creative tasks);
- animations and illustrations (used when explaining new material, demonstrate the educational material, allow you to observe various phenomena of language. Also, these resources can be used to organize creative work (to make a story based on a picture, for example).

The use of animation and animation diversify lessons, activate students. But at the same time, you need to remember that excessive animation interferes with perception.

- interactive spreadsheets (it is advisable to use generalizations and repetitions in the classroom; they help to systematize the studied material; it is also possible to use it when explaining new material)

With the help of spreadsheets, children learn to analyze language phenomena, draw conclusions and generalizations, schematically represent language material. Tables help to remember an orthogram or punctogram. Unlike printed ones, spreadsheets have increased visibility. The same table can be used throughout the entire period of studying any topic, since tables are multilevel, containing complete information on any section (for example, "Pronouns" or "Noun").

- interactive tests

At the stages of repetition and consolidation of the material, it is advisable to use interactive tests.

These are tests from the collections of the Central Research Center, and tests contained on disks, for example, materials from the "Virtual School of Cyril and Methodius".

- electronic textbooks (tutors, simulators, programs, interactive collections, dictionaries, reference books; electronic publications for monitoring students' knowledge; resources of electronic libraries and databases).

During the experiment, we carried out some work to identify the capabilities of first-year students in the direction: 60111700- Russian in foreign language groups in the use of information technology. To do this, we conducted a sociological survey in the format of a questionnaire, 60 people were interviewed, 1st year students, future teachers of Russian language and literature. The study showed that 60 students (this is 100%) have good desktop computer skills, since they acquired these skills at school.

But the results of owning a tablet computer turned out to be worse, only 24 students are familiar with the programs, this is 40%; 80% of students are well oriented in smartphone applications; 70% are able to work with an interactive whiteboard (they acquired experience at school). But not every student has a modern smartphone and therefore finds it difficult to work with applications.

When preparing for seminars using video lectures from YouTube - 5% of students; -30% prefer to make a presentation, and -65% of students speak with oral messages.

After the conducted research, we concluded that it is necessary to organize a special circle at our faculty of "Computational Linguodidactics" as a special laboratory to provide advice to students and teachers on teaching programs to work with digital media. Students are willing to learn, easily assimilate the information of working with digital media.

During the experiment, the problems of using multimedia technologies in education were studied, the possibilities of developing a methodological system for the formation of information and communicative competence of future teachers based on the use of interactive multimedia environments and active teaching methods were investigated. Students of pedagogical specialties of the university showed an insufficient level of formed competencies in the field of development and use of educational multimedia. Creating your own educational content, blogs, websites and electronic resources is a modern requirement for both graduates and teachers.

In addition to technological problems, methodological and psychological-pedagogical problems were identified related to the unavailability of the effective implementation of the developing properties of interactive multimedia environments, among them: intensification of preparation for the lesson, complication of the teacher's activities, reduction of students' attention to the teacher's explanation, possible alienation of students. Based on the analysis of the results of the search experiment, it was found that the main reasons for the inefficiency of using multimedia in the context of a competence-based approach are associated with both low interactivity, openness and friendliness of most multimedia products, and insufficient knowledge in the use of modern digital media.

Conclusions.

1. We came to the conclusion that the training program of bachelors, future teachers should include the study of programs on digital media, the knowledge of which will be useful to them in their further pedagogical activities.

2. As a result of the formative stage of the experiment (based on the component analysis of individual competencies, statistical processing of questionnaire data), the need for the formation of information and communicative competence in future teachers was established.

3. It is necessary to introduce the study of digital technologies into the disciplines on the study of the methodology of teaching language and literature.

4. As a result of the research, we have determined that the following can be included in the list of digital competencies:

1. Information competence
-Working with data (ability to use spreadsheets);
-Creation of digital content (media and text files, websites, personal pages, etc.);
-Programming, development of applications, resources on the Google platform, use of Web 2.0 services.

2. Digital interaction (communicative competence)

- Possession of tools for internal communication (messengers);
- Teamwork on a project (ability to clearly set goals, assess risks, appoint responsible persons and describe the result of work, etc.);
- Protection of health and well-being (Understanding of risks and threats in the digital environment. The ability to protect yourself and others from possible dangers in the digital environment. Phishing emails and files, fake news).

Thus, research in the field of digital competence of students suggests that today the question of digital literacy of future teachers, necessary for the safe and effective use of digital technologies and Internet resources, is acute. Digital literacy is based on digital competencies that help solve a variety of tasks using information technology. The development of digital competence within the framework of undergraduate studies will allow you to communicate and solve problems for effective and creative self-realization in learning, work and social activities in general. It is important to note that the professional standard of a future teacher, as one of the necessary skills, includes the use of modern educational technologies, including information and digital educational resources, for the ability to navigate new information technologies and digital tools, teachers need additional knowledge and skills, and for the creation of a digital educational environment in an educational institution and the successful implementation of educational activities, a teacher must have a wide range of new professional competencies in this field.

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