On the Issue of Professional Growth of Teachers in Digital Education

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Abstract: The study analyzes transformational processes in education in the context of digitalization. It is noted that traditional distance learning tools, such as Moodle, Zoom, Google Meet and other platforms, continue to operate successfully. The authors of the article emphasize that in modern conditions the Internet is becoming a means of encouraging the formation of information culture among the subjects of the educational process, in particular, the skills of mastering digital technologies in professional activities. For example, using Zoom conference, BigBlueButton (Virtual Classroom Software), Google Meet, etc. for organizing the educational process and transmitting educational content in real time. It is noted that within the framework of e-learning it is necessary to develop such digital methods and skills as “scaffolding (long read)”, etc. In addition, it is emphasized that questioning of students through Internet constructors is becoming a leading skill. The article also notes that the most relevant aspect of the system of advanced training for specialists is the development of flexibility of professional abilities (“Soft skills”), which form a set of non-professional skills and ensure high productivity and effectiveness of professional activity. The issues of motivating and ensuring the success of students, as well as the optimal choice of technologies, methods and forms of teaching by means of electronic communications are studied. It is claimed that the digital competence of a teacher is based on their cognitive, social, and emotional components and takes into account their life in the digital environment. It has been found that professional growth of specialists occurs through advanced training, in particular, in the conditions of postgraduate education.

1 INTRODUCTION

At the beginning of the new century, the COVID-19 pandemic, which caused the rapid onset of the information age of society development, contributed to the intensive global digitalization of education. This emphasizes that despite the need to provide educational services online, teachers need to ensure their quality and free access to educational content.

Analysis of the latest research and publications. Theoretical and practical aspects of the provision of educational services by educational institutions for the professional growth of specialists as a priority area for the formation of the educational potential of the state have received significant development in the works of Kyrgyz scientists such as U.U.Beishenalieva, A.S.Rayymkulova, T.R.Oruskulov and G.D.Pankov, where the effects of information technology on the quality of education are studied. The issues of using gadgets, computers, mobile devices as an object of education and a means of learning are considered in the works of D.Azhybaev, S.K.Kaldybaev, U.Kasymaliev, A.M.Kenenbaev, U.E.Mambetakunov and others.

Scientific research by foreign scientists has become relevant for our research in today's conditions. Thus, José María Fernández-Batanero, Marta Montenegro-Rueda, José Fernández-Cerero and Inmaculada Garcio-Martínez analyzed Scopus and WoS data to identify a number of problems that teachers face. According to the authors, it can be concluded that teachers lack or do not have sufficient

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digital competencies. The authors give advice on the development of Digital skills of modern teachers in the postgraduate education system (Fernández-Batanero, Montenegro-Rueda, Fernández-Cerero, García-Martínez, 2022). In addition, to determine the possibilities of using mobile devices for e-learning, it is useful to study the works of scientists such as Carl Royle, Sarah Stager and John Trexler, who note that today gadgets (mobile devices) are becoming digital learning tools and are turning from a system of "delivering" educational content into a system of mastering educational materials and receiving feedback (Royle, Stager, Traxler, 2014). Research conducted by Miriam Schmid, Eliana Brianza and Dominique Petko showed that the use of information technology by teachers during the planning of the educational process is necessary (Schmid, Brianza, Petko, 2021). A significant number of lesson plans were analyzed and it was found that only those teachers who used STEM technologies demonstrated a close connection between ICT and the educational process.

Thus, digitalization of education and the use of information technologies in the educational process are relevant today.

An analysis of the state of the specified issue in scientific sources contributed to the fact that we conducted a survey of teachers (mobile messengers, mobile groups, oral surveys of listeners, students, questions in chats during real-time conferences, etc.) to identify the urgent needs for the development of professional competence in the context of digitalization.

It was found that the primary demand is for:

- the development of conceptual foundations of digital learning content;
- the definition of educational content, essential characteristics of integral competence, as well as general and special skills of teachers (why exactly it is necessary to teach);
- finding ways to optimally interact with participants in the educational process with innovative digital technologies (which platforms and means of electronic communication are best to choose, etc.), mechanisms;
- the definition of effective technologies for managing the processes of formation and provision of digital educational services and ensuring their quality;
- substantiation of the mechanism for using the Internet as a communication platform to increase the motivation of learning and interactive communication of participants in the educational process, ensuring the effectiveness and productivity of mastering the content of education.

An urgent and relevant requirement of today, which is caused by the need for free access to educational content, is the information environment of the educational institution and the use of messengers by scientific and pedagogical staff as mobile educational technologies.

This is also enshrined in legislative documents. In the Law of the Kyrgyz Republic "On Education", in Article 39, paragraph 9, it is stated that "each student has the right to free access to information resources in educational institutions (this means access to public educational, scientific and information resources, including the Internet, electronic textbooks, and other multimedia educational resources)."

In addition, the concept of the "Internet" as a worldwide unified system of computer networks is more often interpreted as the web and the information available through it, rather than the physical network itself. The domain statistics are interesting, as they show a constant positive growth trend in the number of domains in the Kyrgyz Republic. Regular updating of domains indicates a constant change in digital content, and with it the prolonged development of on(off)line Internet communication channels.

This resource, which is dedicated to domain events, notes that all the restrictions caused by the Covid-19 pandemic have stimulated small and medium businesses to more actively transfer their activities to the Internet. All meetings, sales, and services are now provided mainly by electronic means. As of today, the number of Internet subscribers in Kyrgyzstan by the end of 2024 amounted to 5.41 million registrations. Consequently, there is an intensive transformation of people's activities (including professional ones) into an electronic format. This growth is also enhanced by the fact that educational services are undergoing digital transformation and teaching activities are also moving into an electronic format.

In the context of our research, by Internet communication channels and digital transformation of education we will understand the use of web platforms of the worldwide system of computer networks, the main purpose of which is the information interaction of participants in the educational process in the formation and provision of educational services by an educational institution.

The purpose of the study is to systematize and scientifically generalize the components of professional competence of teachers relevant in modern conditions, including Digital skills, and to reveal the directions of using electronic communication tools in the organization of the educational process. In addition, the following tasks are expected to be solved: disclosure of directions for using Internet resources to obtain information in order to promote educational services of an educational institution and a description of traditional and new electronic pedagogical means of activity.

2 METHODS

During the research and in order to solve the set tasks, we analyzed scientific sources and Internet services, conducted a survey of students and analyzed its results. In this work, a certain set of general methods of scientific cognition is used, which are used both at the empirical and theoretical levels of research.

The study presents a generalized description of the use of electronic communication tools to provide educational services both during distance learning of future specialists in higher education institutions and during the professional growth of working teachers in the advanced training (AT) system.

The hypothesis of the study is that in the context of digital education, the professional growth of teachers depends on their competence in the field of digital technologies, the availability of equipment and software, as well as support from the administration of educational institutions. Higher levels of digital competence, improved access to resources, and positive attitudes on the part of the administration are associated with more effective professional growth of teachers

3 RESULTS AND DISCUSSION

The challenges that today encourage the rapid development of digitalization of the education system can be conditionally divided into external and internal. The external ones include: firstly, the global transition of education to an online format and, in this regard, the rapid updating of strategic goals of education in the context of digitalization. Secondly, the development of the education quality system, both internal and external, and the need for its digital support.

The internal system includes the digital modernization of the educational content and the mastery of the forms and methods of online learning interaction by the subjects of the educational process. This implies the development, testing and mastering of new digital technologies for the organization of the educational process and determines the essence of the continuous professional growth of specialists.

It should be noted that the global digitalization of education has contributed to ensuring the effectiveness and efficiency of professional growth of specialists in general, and teachers in particular, on the basis of Internet marketing of educational services. The main purpose of using any Internet technologies is to increase the efficiency of interaction between participants in the educational process and ensure the effectiveness of learning.

The advantages of using the above technologies include: relevant targeted messages to the target audience, tracking the content of potential consumers of educational services, constant communication with consumers and prompt response to demand.

Analyzing the positions mentioned, it can be emphasized that educational institutions should use Internet resources to publish their primary information and obtain primary and secondary information about other institutions. Initial information is received on the websites (portals) of the educational institution, where information about products and educational services is posted and there is feedback from applicants, students and other stakeholders. For example, during the accreditation process, educational institutions post questionnaires, tests, and surveys for stakeholders, students, teachers, etc. on their websites to receive feedback.

In addition, the websites contain a variety of educational information, information and methodological materials for conducting classes. The electronic library also helps to obtain primary information about the educational institution. For current monitoring and adjustment of the state of the educational process, information is also obtained through Internet communication channels.

Secondary information obtained from other sources is necessary to clarify the place of the institution in the educational services market and its reputation in society. For example, a way to obtain secondary information using Internet communication channels is to monitor consumer content. This is tracking information left by consumers in reviews on portals (websites), etc. The emotional content of visitors' messages is analyzed regarding their positive or negative attitude towards the quality of educational services.

The advantage of monitoring consumer content is prompt response to feedback and the ability of educational institutions: - to "hear" consumers of educational services;

- ✓ to find out their advantages and disadvantages;
- ✓ to understand the demands and needs of both existing and potential consumers;
- ✓ to find out what level of quality of educational services and what image of the institution has been formed in the minds of consumers.

Usually, this type of monitoring is carried out on social networks. We would like to emphasize that traditionally, online positioning of an educational institution is carried out through the institution's own website, a distance learning website, forums, blogs, and banners on partner websites. Although, undoubtedly, the most powerful tool for building a positive reputation of an institution and obtaining secondary information is social networks.

At the same time, operational information is obtained through mobile messengers such as Viber, WhatsApp, Telegram and others, which is clearly visible in Kyrgyzstan today. We emphasize that these messengers are now actively developing and adding new functions: from simply providing information to holding a group conference.

As an example, we can take the creation and operation of ilimbox.kg - the first educational online platform for schools in Kyrgyzstan, focused on promoting free website services. The main purpose of the created educational service is to develop digital literacy of every student in the country. The site has created a number of educational series that form and develop basic digital skills, digital literacy of both teachers (online services for learning) and parents (for example, "Children's Safety on the Internet"). Thus, using mobile messengers, an educational institution can both monitor educational offers, focusing on the current demand for the content of educational services, and facilitate their promotion.

In addition, during the forced online training, curators of groups of various courses in all universities of Kyrgyzstan, as well as teachers in all schools, created mobile groups (Viber groups, WhatsApp groups, etc.) to communicate operational information about the progress of training and conduct group consultations with students. Upon completion of training, these groups are used for the purpose of providing and receiving marketing information, both to inform about the emergence of new products and services of the educational institution, and to determine the demand for new services.

Taking into account the above, we emphasize that today, for the professional growth of specialists, the formation of digital skills and the development of their use in professional activities is important. At the same time, analyzing various Internet resources, it can be noted that the leading demand in the system of advanced training of specialists is the development of flexible specialist skills ("Soft skills"), which in essence are a set of non-specialist skills that ensure high productivity and effectiveness of professional activities. Based on the results of scientific research, we will highlight those needs for knowledge and skills that scientists consider necessary in the 21st century for successful professional activity, including teaching.

There are four blocks of skills for successful professional activity of a person, namely:

– methods of thinking (creativity; critical thinking; project-based thinking; problem solving; independent decision-making; lifelong learning);

– means of labor (information culture and free use of digital technologies);

– working methods (creativity and interaction);

– skills necessary for successful life (civic position; life and professional activity; personal and social responsibility).

We emphasize that the means of labor in modern conditions highlight the information culture and knowledge of a specialist in the field of digital technologies. Based on the above, the following positions can be added to the classical structure of professional competence of a teacher in the context of digitalization:

- ✓ the ability of a person to carry out effective teaching activities both in full-time education and remotely using digital services;
- ✓ developed skills: Hard skills – professional; Soft skills – universal; Digital skills – digital;
- ✓ academic performance skills: professional activity based on project-based thinking in both real and digital space (including educational).

The analysis of the survey of consumers of services provided by the educational institution of postgraduate education (KSU named after I. Arabaev) and the analysis of Internet content allows us to assert that the professional growth of specialists in the context of digital education will be successful provided that there is a rethinking and updating of:

- ✓ the content of training for students in higher education and working teachers in the system of advanced training, that is, determining the current content of the education in demand,

- ✓ the goals and results of training (advanced training) taking into account global digitalization (which should be the integral competence of a specialist, general, special, "soft" skills, etc.);
- ✓ the directions of digitalization of the educational process and work in digital mode (provision of educational services by means of electronic communication), answering the questions: how to ensure the quality of provision of educational services, what services and platforms exist for training, which platform to choose (which Internet resource to choose for the provision of educational services, by what criteria to do this);
- ✓ the digital models of educational interaction, figuring out how to motivate and ensure the success of learning, which technologies, methods and forms should be used during digital learning and how to ensure interactive communication of participants in the educational process;
- ✓ the methods and technologies for evaluating educational results of applicants for education, how to reflect on this process?

We would like to emphasize that the above positions will contribute to the development of teachers' competence in the field of digital technologies, which, first of all, is based not only on knowledge of the essence of digital technologies, but also on knowledge of their use in the educational process. Digital skills of teachers are based on the cognitive, social and emotional components of their professional activities and their life in a digital team and society.

It should be noted that the quality of services provided by educational institutions is determined on the basis of such criteria as: compliance of educational services with state orders, regional requests, consumer needs; consistency of educational services (to what extent the complex of educational services provided by an educational institution is unchanged and meets modern challenges); the level of organization of the educational process and their compliance with the requirements; the result obtained (to what extent it meets expectations). Monitoring the quality of the provision of educational services based on these criteria ensures the study of the state of meeting the needs of stakeholders and promotes the introduction of ICT into the activities of an educational institution.

In our opinion, it is possible to ensure the formation of digital skills by building the content of educational programs of an educational institution on a digital project-oriented basis, which will contribute to the formation of soft skills among specialists based on the project type of thinking. It is this approach that will provide specialists who have completed the appropriate advanced training course with the ability to acquire new competencies, while simultaneously acquiring the necessary competencies (primarily digital) to effectively perform their job responsibilities.

A survey of teachers at KSU named after I. Arabaev showed that the platform for conducting video meetings – Google Meet - is mainly used for conducting classes online. This service was first introduced in March 2017. In March 2020, due to the COVID-19 pandemic, the developers announced free access to the program. This increased the number of users by 30 times, and in April 2020 it reached 100 million users per day.

This application allows to communicate in video or audio format, has a chat and presentation demonstrations. That is, it creates all the opportunities for teamwork and discussion on issues that require discussion. If it is impossible to establish an audio connection, applicants for education can use the chat. As practice shows, Google Meet can be used not only for conducting lectures, but also for practical classes, introducing elements of independent work with simultaneous collective verification of the correctness of execution. So, within the framework of the Web conference, the entire group discusses the issues raised by the teacher for discussion. This saves time and provides more opportunities for mastering educational information.

So, the transition to distance learning due to the COVID-19 pandemic has accelerated and created conditions for the inevitable intensive digital development of both teachers and students. This contributed to the mastery of computer-oriented methodological systems and telecommunication technologies. This, in turn, ensured the activation of communication between scientific and pedagogical workers and students by means of electronic communication.

In general, the use of modern means of electronic communication and other Internet resources in the process of developing the professional competence of future specialists, specialists in general and teachers in particular ensures the integrated formation of professional, universal and digital skills. This contributes to the successful life of a person, the well-being of society and, as a result, the competitiveness of the state.

In particular, it may be a response to the challenges facing humanity, as noted in the Human Development Report. The use of mobile learning provides commonality in working with university students, provides new opportunities for prolonged continuous learning both within and outside the institution, contributing to a more thorough understanding of certain categories and the formation of sustainable knowledge by discussing them online. The continuity of learning is ensured through the motivation of the learning process. In addition, the role of teachers changes: they move from being a transmitter of information to a supporting facilitator of students, facilitate collective solutions to educational problems, provide consultations on writing final theses, etc. At the same time, a variety of interactive task constructors ensure increased motivation for learning activities.

4 CONCLUSIONS

In the course of the empirical study, the systematization and scientific generalization of the relevant components of teachers' professional competence in the context of digitalization was carried out. In particular, it is noted that Internet communication channels are used both to obtain marketing information and to organize the educational process. During the study, the authors, based on an analysis of scientific sources and a survey of students of PC courses, clarified the content of professional competence of teaching staff in the context of digitalization. Three blocks (three directions) of its development were identified: the formation of a person's ability to effectively teach, including in digital format; the formation and development of skills: professional (Hard Skills); universal (Soft skills) and digital skills; the formation of academic performance skills: professional activity based on the project type of thinking both in real and in educational digital format. In addition, justifying the directions of transformation of professional growth of teachers in the context of provision of educational services by means of electronic communication, the main condition was identified - prolonged training in the form of advanced training. It was found that in order to ensure a constructive dialogue between participants in the educational process, it is necessary to combine both traditional forms of online learning (Internet platforms) and the latest ones (mobile messengers), in particular platforms for real-time conferences and mobile messengers for the rapid exchange of information. This also highlights the innovative nature of the scientific research presented in the article. The relevance of using e-technologies to assess the level of formation of effective professional competence of teachers, as well as the level of mastery of educational content by applicants for education is emphasized.

The article summarizes the use of digital technologies in the process of training specialists in higher education institutions and in the process of professional development of working teachers in the postgraduate education system. Further research will be devoted to the development of technology for using Internet marketing to promote educational services by means of electronic communication and technologies for using electronic resources to evaluate the learning outcomes of students.

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