Digital Technologies and Effective Practices in Teacher Training

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Abstract

In connection with the ongoing changes in education and society due to the growth of informatization and the formation of digitalization in all areas of labor and life of a modern person, the relevance of the introduction of modern technologies is gaining momentum. This article discusses the issues of updating the methods and technologies for preparing students in the course of the implementation of educational programs with the introduction and use of digital technologies. In particular, the issue of the use of digital technologies in the training of specialists in the humanities is being considered.

The article analyzes the forms and methods that are optimal for use in the context of digitalization, the issues of using modern digital technologies and educational network resources in the course of training pedagogical personnel corresponding to the competencies of WorldSkills. In particular, the digital transformation of the requirements for a teacher-philologist and an educational program is disclosed, which should represent a single whole, and not a set of independent courses or modules with embedded digital and information technologies. The issue of the effectiveness and necessity of using webinars and video conferences in the course of professional training of a teacher in the humanitarian direction is considered in more detail.

Keywords [1]

Digital technologies, mind mapping, cloud technologies, network services, teacher education, an integrated approach

1. Introduction

Structural transformations in the economy, the technologization of production, the growth of labor migration, the strengthening of intercultural interaction and the virtualization of economic and social life - all this dictates today the need to modernize the training of students in the bachelor's system. This is especially true for the professional training of future teachers. The recent situation indicates that not only the world in which teachers will have to work is changing, but the students themselves are changing, which also requires updating the training methods and technologies, and, first of all, adjusting the educational results of the professional program. In particular, the requirements for the teacher-philologist, the teacher of the native language and literature are being intensively transformed: although the labor functions and actions, in principle, remain the same (as well as the parameters of the professional standard). The teacher has already been placed in new working conditions, in particular, he deals with children who are formed on a different linguistic and textual base, immersed in the processes of globalization, mediated virtual communication, mass culture of a transnational nature [1]. On the one hand, this is a general problem of higher education: how to prepare a teacher who is able to teach modern schoolchildren, and therefore, immersed, like

them, in a virtual environment and constantly changing, mastering various digital tools and platforms. The global lockdown has exacerbated this problem. On the other hand, we are talking about the special training of a teacher-philologist, his ability to integrate the communication skills formed in his lessons into real life. And the point here is not so much that for students the connection of the ability is logical, taking into account the norms of spelling and punctuation literacy, to formulate a thought and their own successful future is often not obvious. The fact is that in real life, distant and mediated digital communications dominate, as a result of which children lose the ability for high-quality direct communication and the use of oral speech, they lose the skills of perceiving long narrative structures without video sequence and, in general, the skill of reading complex texts.

2. Purpose and objectives of the research

The challenges of cultural and linguistic globalization, the landmarks of the information space, the rapid development of information and communication technologies and the computerization of all sectors of life have placed the quality of teacher training at the forefront. The requirements for a teacher-philologist, of course, imply the use of digital technologies based on personality-oriented and activity-based approaches to learning [2]. A modern language teacher should be fully prepared to master innovative teaching technologies in close conjunction with modern digital tools, and, since both must correspond to the dynamics of the psychological and linguo cultural portrait of the student, master it continuously. Of course, mastering the latest technologies of distance and contact education presupposes reliance on theoretical and practical developments in the field of linguistics (as a complex system of linguistic directions and disciplines), knowledge of the mechanisms and strategies of virtual and real communication, theory and history of literature and culture (including the features of the Internet -texts), the main provisions of physiology, pedagogy, psychology, didactics, etc. In this regard, the strategy of professional training of teachers-philologists should be considered as the formation of an integrated intellectual experience, a model of narrative, interaction and transformation, which is applied at the program level and ensures the continuity of experience students.

2.1. Main part

An integrated approach to building the educational environment and the educational process allows you to develop, flexibly change and adapt to students' requests a single system of educational results, educational material, ways of interacting with students, pedagogical technologies and tools based on educational data. The basis of pedagogical design is the unity of the course content, style and sequence of presentation of the material, as well as the ways of its presentation and assimilation in the activity, oriented towards the effective achievement of the educational result. Deliberately structuring the educational program as a whole, and not as a set of independent courses or modules, and guiding students through this program, in accordance with the established vector, it is advisable to fill it with diverse and frequent interaction opportunities. Along with meaningful and professional-practical bonds that absolutely naturally arise, for example, when solving real production problems and preparing interdisciplinary projects, digital technologies and services play the role of a tool link (among other things, integrating the educational process into everyday life). In this case, digital technologies are used not only to transfer knowledge from case to case, but are constantly involved in various individual and group assignments, research and development of digital content and through online communication [3]. As part of a universal narrative, digital technology promotes continuity of experience, builds trust in the learning process, increases motivation for success, productivity and, as a result, satisfaction with results. In this regard, the design of digital learning technologies is an essential part of the overall design of a professional educational program. It is clear that pedagogical design does not imply some kind of universal model that would be equally suitable for everyone, however, some successful technologies and practices in the training of teachers-philologists may be useful and should be discussed.

The most important consolidating component of the educational program of a teacher-philologist are educational communities integrated into an online environment based on cooperative learning technology, or joint learning, one of the most popular methods in modern world educational practice [4]. The named form of educational activity is based on the previous experience of virtual

communication of students and is directly related to the formation of general professional and professional competencies of a teacher, as well as further trajectories of professional interaction. Traditional educational communities, such as research problem groups and clubs, are no less functional in the modern university environment, but with the development of electronic resources and virtual communications, virtual communication and Internet resources are used to one degree or another. In general, this is justified, since it increases the involvement, the intensity of communication, and expands the possibilities for the exchange of information. While there is no direct research comparing the outcomes of online learning communities with those of face-to-face learning communities, there is evidence to suggest that the core components of learning communities can be adapted to online learning environments. Today, there is already research based on the analysis of strategies for promoting educational communities on the Internet, determining factors and models that should be considered when developing distance assistance centers. We also analyzed assessment tools that directly measure the impact of student and teacher participation in the online community, and substantiated the benefits of using specific taxonomies [5]. At the North Caucasian Federal University, a model of a networked educational community for the professional training of Master students in the direction of "Pedagogical Education" (Brynza, Shevchenko) was developed, described and successfully tested. As part of a bachelor's degree, such experience also provides ample opportunities for remote collaboration (network interaction), the exchange of resources (information, methodological) between students and teachers, constant communication through forums and support of remote modules, coordination of the activities of community members. All of this contributes to the development of teachers' skills, especially reflective thinking, as well as the use of active teaching methods and strategies that integrate digital technologies. As a platform for the placement of individual and group projects, the network educational community allows ensuring the publicity and validity of work results, forming a portfolio and providing initial experience for further involvement in professional activities, participation in competitions, etc.

2.1.1. Results

Group learning is a variant of community work and an independent technology within the framework of the implementation of the components of the educational program, although joint learning can not always be equated to work in groups. Forms of remote interactive group work using cloud technologies and services, such as: LMS, cloud data storage, mental maps, network office suites and programs, demonstrate significant efficiency in the process of training bachelor teachers, since they make it possible to simultaneously master and apply modern digital technologies and get the necessary competencies in the area of training [6]. The figure shows an example of a mental map developed by 1st year students in the field of training "Pedagogical Education" with two training profiles "Russian language" and "Literature" in the discipline "Introduction to Professional Activity" in the online application for mind mapping - MindMeister. This project was attended by 18 students, each of whom presented 3 questions on the map. As a result, the mind map includes 54 topics, technically equipped with: hypertext, presentations, graphics, photo and video materials, as well as built-in mind maps. During playback, the project is divided into 98 slides. Figure 1
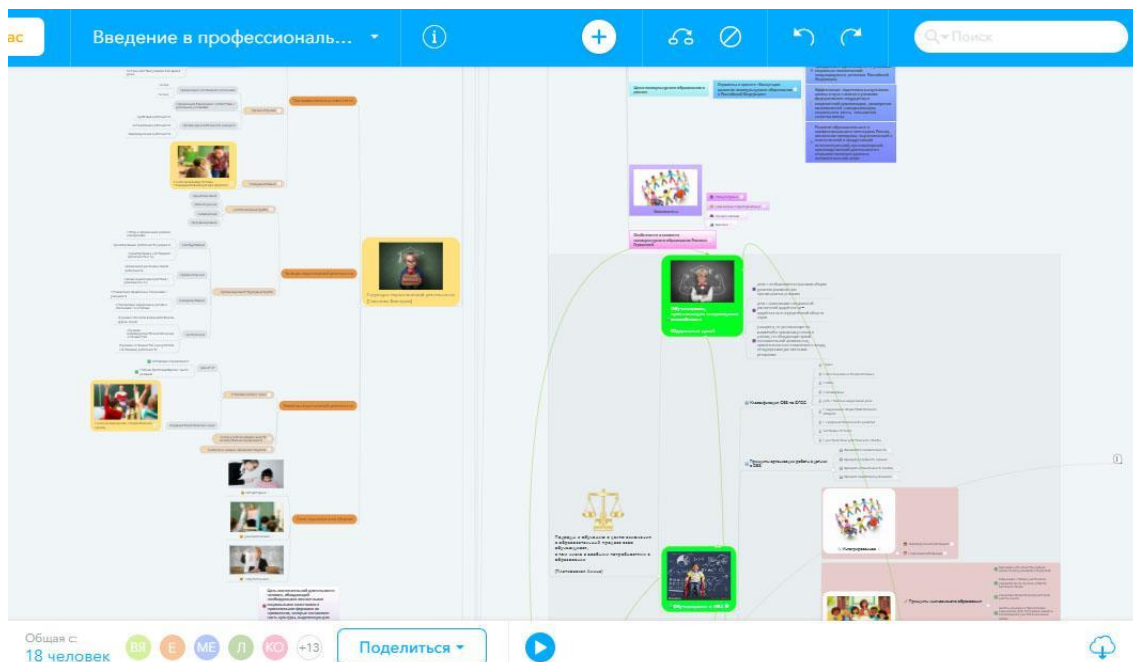
Figure 1: MindMeister Mind Map Fragment

E-education today provides a wide range of technologies and tools that can be used to deliver learning (e-learning). The most significant technologies and means of e-Learning include the following: distance learning systems and interactive technologies, multimedia technologies, blogs, chats, e-mail, Web 2.0 tools, Web sites, etc. [7, 8].

Currently, the following forms of e-learning are used to organize the educational process at the university:

Chat sessions are short-term sessions in which all users participate simultaneously (simultaneously). It is organized in such a way that both students and teachers can communicate with the help of the network at the same time.

Teleconferencing is an interactive tool that allows online group communication in real time. The teleconference participants are at a considerable distance from each other. A teleconference is similar to a forum, but follows a very clear structure. At the same time, messages are stored on news servers, NNTP servers (as opposed to forum messages stored on the same web servers as web pages).

Online simulators - provide for the possibility of learning through a game that simulates various processes.

E-courses - unlike all of the above forms of training, e-courses do not involve communication. These are structured materials designed to solve a specific educational problem. They can be posted both on the Internet and on electronic media.

Web-based classes - This form of training provides multi-day training and asynchronous participation of both students and teachers. Web classes are distance seminars (they are also webinars), practical assignments, lectures and other types of training sessions. To conduct web-based classes, specialized forums and programs are used.

So, one of the possible options for training university students is such a form of e-learning as a webinar, let us dwell in more detail on this form of training.

Webinar (English webinar) - an online seminar, web conference, online meetings or presentations over the Internet in real time. The webinar allows you to significantly expand the audience of listeners interested in getting acquainted with the educational "products" of a particular teacher. Webinar participants are geographically located at their computers, and communication between them is carried out via the Internet. This technology allows you to significantly save time and other resources, since students can be included in the interactive educational process at a convenient place and at a convenient time. To join a conference, simply enter the URL (website address) in a browser window.

The following types of webinars can be distinguished that can be used and be useful for the educational process of the university:

Information seminars, the main purpose of which is the presentation of the target audience of the educational product.

Educational webinars - the study of a particular subject area, the formation of understanding.

Trainings - has a practical focus and, as a rule, are organized after training webinars.

Listeners need the following equipment to participate in any webinar:

- a personal computer or laptop with an Internet connection;
- webcam (you can use a camera built into a laptop or an external camera connected to a computer via USB), provided that the listener wants to take part in an audio or video conference during a webinar;
- a headset or microphone and sound-reproducing devices (headphones, speakers).

The webinar, being a modern teaching tool, has its advantages and disadvantages in comparison with classical forms of education.

First, a fairly large number of listeners (up to several hundred) can almost always participate in a webinar. And any, even the largest, room has a limited number of seats.

Secondly, a webinar is a significant cost savings, since you do not have to pay for renting a hall, printed teaching materials, meals for listeners, travel costs, etc.

Thirdly, the organizer of the webinar can think over and prepare links to external resources, libraries in advance and orient listeners to them right in the learning process.

Fourth, the material of the webinar can be easily saved, archived, posted on a web resource or electronic medium and provided at the request of listeners [9].

However, despite all the advantages of training through webinars, their participants are deprived of live communication and the ability to model their strategies in face-to-face communication, cannot fully feel the presence and reaction of the organizer and other listeners, confidentiality cannot always be guaranteed for the participants. In order to conduct a high-quality webinar, the organizer must be able to quickly determine the needs, track the reactions and condition of the participants, and in the framework of the webinar this is practically impossible.

In the course of the research, we analyzed Russian-language platforms for conducting webinars, such as: Webinar.tw, Firmbook.ru, Webinar.ru, V-class.ru, SeeMedia.pro, Wiziq.com, Mirapolis.ru, etc. Each of these platforms has both pros and cons. The positive aspects of the above mentioned platforms include: high quality of transmission, stable and high-quality video and sound, flexible operational management of the rights and statuses of participants, the possibility of individual communication between participants, recording and the ability to download materials, etc.

From a methodological point of view, the task of conducting a webinar can be divided into three stages:

1. Preparation for the webinar, which includes the preparation of presentation and handouts, webinar advertising, registration of participants.

2. Directly conducting a webinar.

3. Summing up (getting feedback from participants, evaluating the effectiveness of the webinar).

In conclusion, we note that existing technologies and e-learning tools allow:

• conduct training in various forms, including synchronous, asynchronous, blended learning;

• organize interaction between all participants in the training;

• use a variety of modern teaching aids (electronic educational resources, electronic textbooks, computer tests, simulators, simulations, simulation programs, electronic encyclopedias, etc.);

• provide access to repositories of electronic materials;

• organize collective work by means of computer networks, etc.

Of course, "it is clear that the adaptation and integration of DTs in the classroom of contemporary society's schools requires the adoption of new roles and forms of work by the teacher" [10]. A popular and effective form of project activity within the framework of mastering the content of general professional and professional-subject disciplines and practices is to conduct webinars and record video lessons (in Russian language and literature) and remote interactive extra-curricular activities of a subject orientation [11, 12]. These forms of education are in great demand in real pedagogical activity and allow to demonstrate the level of formation of professional skills, creativity, reflexivity, possession of modern educational technologies, the ability to navigate the information space. The quality of a virtual lesson is determined by the level of consistency of the goal, the content of the educational material, teaching methods, forms of organizing the cognitive activity of students. An important place is occupied by the choice of elements of interaction, methods of involvement and presentation of material [13]. At

the North Caucasus Federal University, the stages of preparing a virtual lesson are determined, technological maps have been created and requirements for conducting virtual lessons are described, based on the provisions of the federal state standards of basic and secondary education and taking into account the psycho-age characteristics of the perception of secondary school students. Based on the integration of the requirements of the national professional standard "Teacher (pedagogical activity in the field of preschool, primary general, basic general, secondary general education) (educator, teacher)", as well as a technical description of the WorldSkills competence, systems for assessing such lessons have been developed and tested. It is advisable to place virtual training sessions and extracurricular activities in the educational community for further mutual assessment and joint discussion, which contributes to the formation of one's own reflexive position in relation to professional competence, a set of value orientations within the framework of the activity described by it.

3. Conclusion

One of the ways to increase the effectiveness of professional training of specialists in this field is the formation of skills in the use of advanced educational online platforms and digital technologies. For centuries, teaching has evolved through the introduction of innovations to improve educational outcomes [14]. In this case, activity practices act as the basis for teaching and mastering the skills of pedagogical work.

However, as the implementation of certain tools, teachers must carefully evaluate them, monitor their impact in order to discover new approaches to improving the quality of the educational process, in particular, professional training in the field of teacher education. Of course, further large-scale research is needed to examine the effectiveness and impact of digital tools in education.

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