

Using digital technologies for forming empathy of would-be school teachers

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Abstract — The article considers the problem of the forming a culture of empathic behavior of would-be school teachers in the digitalization of the educational space. The author of the article outlines the relevance of the problem studied, when researchers in Russia and abroad increasingly focus on the formation of new pedagogical competencies in connection with the immersion of the educational process in the electronic environment. Having analyzed the problem under study, and, based on the results of a previous study, the author of the article concludes that the forming such a significant quality of a teacher as empathic behavior and empathic culture will be most effective if computer technologies are introduced into the educational process to form this quality. The purpose of this article is to identify and implement the most effective computer-based interactive programs for assessing and building a culture of empathic behavior for would-be school teachers. Participants in the experiment were second-year bachelors-students getting qualification in Education. The results of the study showed that in the group where adapted computer and author's technology for forming a culture of empathic behavior was implemented, future teachers are more interested in their profession and they showed better motivation to study pedagogical disciplines than in the group where traditional methods of formation were applied of studied quality. In general, the control online test showed that the use of computer technology is as effective as active interactive methods for developing a culture of empathic behavior for would-be school teachers. The author of the article concludes that it is very important and necessary to use computer technology in pedagogy to form precisely empathic qualities, in connection with the transition to network interaction relations, which involves the formation of new competencies in the educational entities of productive network interaction with other people. The need for new competencies requires changes at all levels of education.

Keywords — *e-learning, empathy of the teacher, empathy culture of the teacher, empathy behavior, digitalization.*

I. INTRODUCTION

A key component of modernization of the modern educational process is the development of e-learning [1; 2]. At the annual meeting of the President of the Russian Federation V.V.. Putin and the Government argued that in modern Russian society, the demand for e-education is constantly growing [1]. Therefore, the modern educational process is deeper immersed in the electronic educational information environment.

Currently, scientists and researchers are increasingly focusing their attention on the formation of new pedagogical

competencies that appear in the context of digitalization [3; 4; 5].

Introducing new technologies that expand learning opportunities has led to an in-depth study of the social function of teachers and pedagogical models implemented in educational institutions. There are studies researching online pedagogy, according to which the student is the core and an active participant in the pedagogical process, and he decides what, how, where, when and with whom the training will take place. The learning process itself encompasses various activities that provide great opportunities and resources for learning.

Currently, there are various theories of learning (connectivism, razomatic training, self-regulatory learning, etc.), analyzing which there is a need to rethink education as more open and flexible, requiring new competencies from a modern teacher.

One of the key factors of innovation and improvement in the field of education is training teachers in the field of ICT (information and computer technology), the forming digital competencies for them, such as the ability to communicate in digitalization, the ability to collaborate online with other people, share resources using online tools, the ability not only to learn about new technologies, but also to increase the efficiency of their use in practice.

Nowadays, the digital competence of teachers is being actively studied both in Russia and abroad. Having analyzed some studies in this area, we can conclude that modern teachers, in spite of their regular undergo advanced training in the field of ICT, have an average level of digital competence, but very few who are willing to use their knowledge and digital technologies in their professional activities [6].

It should also be noted that, despite a sufficient number of studies in the field of digital competence of teachers, few of them turn their attention to emotional skills and even less to the empathy of a teacher in the context of digitalization in education [4, 6].

Thus, the purpose of the present study is to identify and implement the most effective computer-based interactive programs for assessing and forming a culture of empathic behavior for would-be school teachers.

Based on the results of a previous study, when forming an empathic culture of future teachers took place in the context of

the traditional educational process: a reflexive workshop program was implemented as an optional discipline. During the pedagogical practice, future teachers were involved in volunteer activities, during which they provided assistance to socially vulnerable children (work in orphanages, with children from dysfunctional families, etc.) [7].

Moreover, on the basis of the analysis on the research problem and the identification of the role of computer technology in education in general, a hypothesis was put forward that forming a culture of empathic behavior of future teachers in the digitalization of the educational process will be more effective if computer interactive programs are introduced into the curriculum on forming empathic behavior and culture.

II. METHODOLOGY

Empathy, empathy behavior, empathic culture has been studied for a long time in pedagogy. There are a number of studies on the impact of these qualities in the educational process.

Recent studies show that teachers with well-developed empathic skills not only try creating a safer and more motivating environment and establish positive relationships with their students, but their empathy has a positive effect on student performance [8].

Other researchers argue that empathy should be seen as a multi-dimensional skill involving cognitive, emotional, and situational aspects. In his study, Martinez-Otero Perez (2011) found gender differences in the balanced presence of affective (empathic stress and empathic joy) and cognitive measurement (acceptance of perspective and emotional understanding) of empathy among trained teachers [9].

In addition, there are foreign studies where scientists research the relationship of teacher empathy with his self-esteem and conclude that empathy contributes to the successful implementation of pedagogical activities by teachers who have good self-esteem and motivation for their work [10].

As for modern research in Russian pedagogy on this issue, the empathy of the teacher is studied in the structure of professional self-realization of would-be school teacher, the reasons influencing the development of empathy are considered, and recommendations for its development are proposed [11].

Other scientists study teacher empathy according to different styles of pedagogical activity [12], working at different levels of education [13], and training representatives of different ethnic groups [14].

As for the studies of empathy and empathic skills of teachers in the context of digitalization of education, there are no such works in Russian pedagogy. In foreign studies, the study of digital literacy [15; 16] has demonstrated the importance of including the development of emotional skills in the process of forming a digital competence. The scientist

Ala-Mutka [15] considers the emotional dimension as one of the key factors on the conceptual map of digital competence for the 21st century, including it as part of intercultural communication and cooperation.

Nevertheless, at the present stage of developing pedagogical science there are very few studies that consider digital literacy of teachers in conjunction with empathic culture or empathy in general. There are studies in psychology on building empathy using computer technology for people with disabilities [17]. Having analyzed a number of such studies, computer interactive programs were selected and adapted in relation to the presented study.

III. MATERIALS AND METHODS

The study was conducted among bachelor students with pedagogical qualification. The experiment was attended by 36 people, boys and girls, 2 courses (two study groups). In one group, forming a culture of empathic behavior was carried out by traditional teaching methods (seminars and workshops, trainings, role-playing games, discussions, round tables, situational tasks, etc.). In the second group, during study of specialized disciplines, selected computer interactive programs were implemented in order to form a culture of empathic behavior. Below there is a description of implemented computer technology.

1. Computer interactive technology based on the multimedia interactive program "Mind Reading", by O. Golan and S. Baron-Cohen [18]. The essence of this technology in relation to our study is as follows: Students were shown a short silent video clip, then three audio recordings were switched on and text materials were given to students that outlined three situations. The students' task was to choose one of three audio recordings and three texts that corresponds to a silent video clip. This technology was applied on a principle from simple to complex. Initially, videos were shown with simple social situations and characters in the video that showed emotions that are easy to identify. In addition, students were asked to choose one of the three emotional states corresponding to the video. In the process of studying an empathic culture and its components, the task was complicated, and future teachers themselves had to determine and characterize the emotional state of the heroes of the video, and the emotions themselves became more difficult to recognize.

2. "Eyes Reading Mind" is a computer interactive technology for determining feelings and thoughts of the interlocutor according to non-verbal communication. The purpose of this technology in the presented study is forming the cognitive component of an empathic culture. The test was "Reading the Mind in the Eyes" by S. Baron-Cohen [19]. Students were shown animated photographs of not the whole face, but only the human eye, and from the proposed answers, it was necessary to choose the correct one that describes the emotional state of the person.

3. "Himself a Director" is an authorial computer technology, the essence of which is as follows: students are

shown a short film on a school theme where some kind of social problem or conflict is presented. But the film was shown not from the beginning, but already from a demonstration of a problem or conflict. The show is ended as suddenly as it began. The students' task is to determine the causes of the problem in the film (i.e. describe the beginning of the film) and the result of this problem (i.e. determine how the film is ended). Future teachers should carry out the task based on their knowledge of the culture of an empathic behavior and their own experience. The versions of the beginning and ending of the film are discussed in a group. The role of a lecturer is an observer and a consultant. The lecturer, using leading questions, helps students think in the right direction and motivates them to show empathic skills in their reasoning. After discussion, the film is shown to students in full. After film demonstration students analyzed behavior of the characters in the film, the problem arose and the result, discussed the resolution of the presented situation happened. Students also play other options for the final film.

IV. RESULTS

This study was conducted during an academic year. Two groups of students at the end of the year passed the same online test, which determines the level of forming a culture of an empathic behavior. The test results showed that forming a culture of an empathic behavior using computer technology is as effective as using active and interactive teaching methods, but with tasks where it was necessary to watch short videos, students in the group who used computer technology to form an empathic culture behaviors coped much faster than students in group where traditional interactive methods were used. In general, the test results in both groups were approximately the equal; the difference was only in the speed of doing tasks.

The study presented in the article showed that using computer technologies for forming the culture of an empathic culture arouses students' interest in the teaching profession and their motivation in learning.

V. CONCLUSION

Thus, this study only confirmed the hypothesis that forming the culture of an empathic behavior of would-be school teachers in the digitalization of the educational process will be most effective if computer-based programs for building an empathic behavior and culture are introduced into the curriculum. The results showed that active interactive methods is also effective in forming the culture of an empathic behavior where students interact directly with each other, improvise, take on various social roles.

Further research on the problem studied in the context of digitalization of the educational space can be carried out in the following areas: creating a virtual environment for building an empathic culture of would-be school teachers, developing a computer-based interactive game to form empathic skills, developing computer diagnostics to assess the level of forming empathy, tolerance, emotional stability of would-be school teachers.

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