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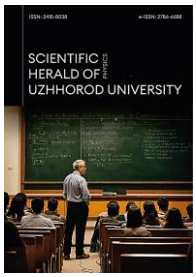

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Development of digital literacy of a future educational psychologist in the process of professional training

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Abstract

Relevance. The relevance of the study is determined by the rapid digitalisation of society, which puts forward the need to revise educational programmes to train multifunctional specialists in the educational field who are able to use digital tools in their professional activities, and productively interact with the "digital generation" of students.

Purpose. The purpose of the research is to find effective pedagogical strategies for the development of digital literacy among future specialists.

Methodology. The study employed a qualitative combination of causal analysis, induction, and synthesis to examine modern approaches to digital literacy development. A pedagogical experiment was conducted, utilizing survey methods and control groups to assess students' digital literacy levels. This experiment also aimed to evaluate the effectiveness of pedagogical strategies in cultivating digital skills among future specialists.

Results. Consideration of the theoretical basis for the research problem showed that the digital literacy of an educational psychologist is based on the ability to implement their knowledge of digital technologies and resources in professional activities. In the course of the study, the importance of an innovative approach in the development of digital literacy of students during their studies at the university was argued. In addition, the analysed modern research on digital literacy in the educational sphere helped to identify current problems affecting the quality of development of students' digital competencies. In this regard, an elective special course was developed and introduced into the educational programme.

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Conclusions. The study showed that integrating innovative methods and digital technologies in educational psychologists' training significantly improves their digital literacy and professional competencies, as demonstrated by experimental group outcomes.

Keywords: innovation; educational strategy; information competencies; differentiated approach; communication skills.

Introduction

The incorporation of information technologies into education necessitates a reevaluation of pedagogical approaches in training psychological and pedagogical specialists. These professionals must now possess both traditional teaching and counseling knowledge, as well as digital skills. Such a comprehensive skill set is crucial for effectively working with the modern generation of students. In this regard, the issues of searching for and introducing effective teaching methods into the educational process for the purposeful development of digital literacy among students are being updated. The development of the personal characteristics of the future educational psychologist, their psychological well-being and readiness for high-quality professional activity in the future remains an important issue. The combination of these factors determines the relevance of the study of the problem of the development of digital literacy of educational psychologists in the process of their specialised training.

The use of information and communication technologies in the education system implies changes in the understanding of the role of digital literacy in the professional activity of a specialist, and the modernisation of pedagogical strategies for its development. Thus, exploring the problem of improving professional competence, G.B. Akhmediyeva et al. [1] note that the development of digital literacy involves mastering digital competence, the ability to implement it and transform it into creative and innovative approaches for searching, analysing, evaluating, and transmitting information. Similar conclusions can be traced in the paper by A. Alshimbayeva and Zh. Tashkeyeva [2], where the researchers also emphasise the need to master not only technical skills, but also the ability to critically evaluate and apply digital information for communication and interaction in society. In addition, studying the problem of technology for the development of media culture among future specialists, the researchers note that important components in the development of digital literacy are personal motivation, self-regulation, and human communication skills. Thus, media education should primarily affect the process of personal development of a future specialist, which necessitates the disclosure of psychological determinants that contribute to the development of digital literacy among students of higher educational institutions.

The process of digitalisation of society is an integral part of global changes. It is important to preserve the psychological well-being of citizens, which, in turn, necessitates the creation of appropriate conditions for society, in particular, in the educational environment [3]. In this regard, the development of digital literacy is a key task of today, where professional training should be implemented in the context of students gaining practical experience in the use of information technology. Investigating the problems of cyber-socialisation of modernity, A.K. Igibayeva et al. [4] argue that digital security is becoming an essential factor in ensuring an effective educational experience in the context of using digital resources. Similar conclusions were obtained by G. Orynkhanova et al. [5]. The researchers note that in modern society it is necessary to highlight issues of digital security, including them in educational programmes, which will contribute to the development of practical skills and awareness among students in the field of personal data protection and security in the digital space. In addition, exploring the problem of digital literacy development, the researchers also pay attention to the importance of developing relevant knowledge among university teaching staff regarding the use of information and communication technologies in the educational process.

According to Zh. Akhmetova et al. [6], the process of digitalisation of the educational environment is faced with a number of difficulties that prevent the introduction of digital technologies into educational programmes, in particular, the reluctance of teachers to deviate from the usual teaching methods, the lack of full-fledged technical equipment of the educational institution, and difficulties in assessing students' knowledge. Investigating the development of digital literacy among teachers of higher educational institutions, the researchers point out that, having the appropriate knowledge, experienced teachers are not always ready to use information and communication technologies in the learning process, since their perception of innovation is somewhat reduced due to conservative views on the learning process. In this regard, it is important not only to acquire knowledge of digital literacy, but also to develop skills to use the theoretical experience gained in practice and the desire to develop in the chosen profession.

The main purpose of the study is to reveal the specifics of the development of digital literacy of future educational psychologists during their studies at the university. The analysis of modern literature on this topic helped to put forward a hypothesis: innovative teaching methods contribute to the effective development of knowledge and skills of digital literacy.

Materials and Methods

The concept of a theoretical and methodological approach in the study of the problem of the development of digital literacy of future educational psychologists was based on determining the specifics of the development of their competence among students during professional training, on revealing the personal characteristics of students, which are associated with their motivation to master the chosen speciality. To implement this concept, methods of content analysis and causal relationships were used to establish the features of the development of digital knowledge among future specialists, in particular, factors determining students' attitude to innovation and the development of

their skills in working with information and communication technologies.

The use of modelling helped to determine the specifics of the development of media and information literacy among students. In addition, the use of comparative and inductive methods identified the key principles of pedagogical approaches for assessing the digital literacy of students in higher education. The applied methods of generalisation, synthesis, and structuring contributed to the systematisation of key aspects of the development of professional knowledge and skills among future educational psychologists, including the possibility of their integration into practical activities. It also allowed identifying effective pedagogical strategies that stimulate students to become motivated to learn, communicative literacy, self-regulation, and professional self-awareness. The application of the praximetric method allowed analysing and describing the features of pedagogical conditions for the development of digital literacy of students in the learning process.

The empirical research was conducted at the Al-Farabi Kazakh National University. At the preparatory stage, organisational work was carried out with the university administration. This stage involved the development and introduction into the educational process of an elective special course "Development of digital literacy and information and communication training of educational psychologist" for undergraduate students. In total, the course provides for the study of 12 topics, which are designed for 56 hours, of which 32 hours of classroom workload, 12 hours of independent student work with a teacher, and 12 hours of practical work.

62 4th-year students of the speciality "6B01101-Pedagogy and Psychology" of the Faculty of Philosophy and Political Science were deliberately divided into two subgroups and invited to the study. For the control group (CG-28), training was conducted in a conventional form, and innovative teaching methods were introduced for the respondents of the experimental group (EG-34). In particular, classes for the experimental group were conducted in the format of competence-based, system and activity, and differentiated approaches. Before the experiment, the current knowledge of students regarding their understanding of the basics of information and communication technologies (ICT) and digital literacy was assessed through a questionnaire. During the experiment, interviews were conducted with respondents from both groups to determine their interest in studying an elective special course.

Evaluation of the effectiveness of the implemented programme was carried out through testing, which was aimed at determining the level of students' digital skills, in particular, information, computer and communication literacy, media literacy, and the attitude of future specialists to innovations and technologies in the educational process. The test was based on material from the completed course. The questionnaire included simulated problem situations that involved the use of theoretical and practical knowledge of students. The final test included 42 multiple-choice questions and 8 situational questions with the need to provide a detailed answer. The test time was limited to 45 minutes. The results were analysed and differentiated by levels according to the number of correct answers (low – >30%; below average – 31-45%; average – 46-60%; above average – 61-80%; high – <81%).

In addition, the analysis of the results of theoretical and empirical research contributed to the definition of key principles for the development of students' digital competence, which led to the creation of a predictive model for the development of digital literacy among future teachers and psychologists.

Results

Reflecting the essence of the modern educational paradigm, digital literacy is becoming an integral part of the development of specialised knowledge and intellectual growth of future specialists. Research in the field of digital literacy education is becoming an important element in the training of modern personnel, where the key is the adaptation of educational programmes to the actual needs of society. For the Republic of Kazakhstan, the issue of developing digital literacy of citizens remains open. Since digitalisation of all spheres of society is actively taking place in the country, it is necessary to develop effective models for the purposeful development of digital skills. This actualises the issues of university training of specialists, in particular educational psychologists who are able to supervise the process of psychological work with students through information and communication technologies. It also necessitates the disclosure of problematic aspects in the development of digital literacy of a future educational psychologist while studying at the university.

However, the current generation of students has grown up in the digital age and their educational needs are different from previous generations. It is easier for a specialist who has digital literacy to adapt to the needs of modern students and interact with them [7]. In addition, an educational psychologist knowledgeable in the field of digital technologies is able to contribute to the digital development of society, and the purposeful development of appropriate skills among students of higher educational institutions contributes to the development of the country's economic potential. The key areas in the study of digital literacy are the technical, psychological, and socio-cultural aspects of the problem, the development of which is necessary for the full participation of a specialist in a digital society and their professional growth in the field of pedagogy and psychology in general.

The pedagogical experiment was implemented at the Al-Farabi Kazakh National University. The study was attended by the 4th-year students of the Faculty of Humanities in the number of 62 people. The participants of the experiment were divided into groups CG-28 and EG-34. The beginning of the pedagogical experiment was accompanied by a survey of respondents, where the participants of the entire sample had to answer questions related to existing knowledge regarding digital literacy and information and communication technologies. The conducted survey determined that not all subjects had an idea of the concepts of "digital literacy" and "information and communication technologies". In addition, students found it difficult to answer questions about the need to digitalise the educational environment, the main components of its teaching methods, and their perception

of the need to teach digital skills. It was easier for students to answer questions about the priority of e-learning and digital education in general. The subsequent content analysis procedure helped to determine the meaningful features of the survey data obtained, and their following distribution:

- digital literacy implies knowledge about the use of digital devices and understanding how to work with information and communication technologies (33%);
- ICTs are various devices, and also imply information processing (computer, Internet, local area network, artificial intelligence, various media) (48%);
- for a future educational psychologist, it is important to have skills in working with information technologies and be able to use them in professional activities (38%), and in this profession, it is necessary for a specialist to be multifunctional (23%), have desire for self-development (18%) and the ability to work with the modern digital generation (21%);
- digital education for an educational psychologist is necessary to improve professional competence (32%), develop critical thinking (28%), the ability to interact with modern students (16%), and as a prospect of working with electronic content (24%).

The pedagogical experiment was accompanied by ongoing interviews with respondents from both groups. It was definitely noted that some students have a superficial understanding of digital literacy and digital competencies that they need to possess in their professional activities. All the subjects have skills in using ICT, since they use most of the tools in everyday life, and have an understanding of digital educational resources and have skills in using information technology for learning. The interviewing also determined the students' interest in improving their own knowledge regarding the development of digital skills. The survey conducted by the respondents of the two groups indicates minor differences in knowledge regarding digital literacy and ICT, which means that knowledge assessment through final testing after listening to an elective course will not have a significant impact.

The hypothesis formulated at the beginning of the study suggested that innovative approaches in the learning process allow students to productively master and interact with new information in the classroom. In this regard, appropriate pedagogical conditions were organised for the experimental group, which allow empirically verifying the proposed assumption. The organisation of a psychological and pedagogical environment for the purposeful solution of educational tasks involves the application of the principles of consistency and integrity, and also puts forward the need to develop a pedagogical algorithm for the development of digital literacy among future educational psychologists in the process of studying at the university.

The concept of the elective special course programme "Development of digital literacy and information and communication training of educational psychologist" was built according to the logic of individual and differentiated approaches, the professional content of the speciality and patterns that contribute to the development of digital literacy of students and their willingness to implement the acquired knowledge and experience in further professional activities. This course included the study of 12 topics aimed at the development and improvement of knowledge about digital technologies used in the educational process, and the development of skills and abilities to apply the acquired knowledge and experience in practice. The introduction of an elective course was provided for undergraduate students and was designed for 7 months of study. In particular, 56 hours are allocated for the development of the course, where 32 hours are provided to students for classroom work, 12 hours are allocated for individual work with a teacher, and 12 hours for independent practice of practical skills. The topics and content of the elective special course blocks are presented more clearly in Table 1.

Table 1. Plan of the elective special course "Development of digital literacy and information and communication training of educational psychologist"

No.	Description of the topic and the content of the block
1	Introduction to the subject "Development of digital literacy and information and communication training of educational psychologist": - information and activity model of training specialists in the humanities; - university training of an educational psychologist in modern conditions of digitalisation.
2	Fundamentals of digital technologies in the educational system: - concept of digital technologies and their role in the professional training of an educational psychologist; - electronic educational resources: creation, search, quality assessment; - features of working with information systems in education.
3	The concept of ICT. The use of ICT in the training of educational psychologists: - general concept of ICT, information and computer literacy; - process of informatisation of education; - media literacy of the future specialist.
4	Development of digital literacy: - basics of working with text documents, tables, and presentations; - basics of working with a graphic editor, graphic design in the work of an educational psychologist; - basics of coding and programming, working with web pages and visual programming languages.
5	The content and structure of information and communication competencies of a future educational psychologist:

	- features of professional development of an educational psychologist in the information society; - information competence of the future specialist; - improvement of the information competence of an educational psychologist.
6	Motivation of undergraduate students for future professional activity: - types of professional motivation; - main stages of motivation and professional identity development.
7	Digital support for educational activities of an educational psychologist: - use of modern ICT tools; - organisation of e-learning, digital educational environment; - networking, working with electronic boards; - multimedia learning materials from creation to use.
8	Role of an educational psychologist in the development of a digital society: - information competence of an educational psychologist; - digital literacy of an educational psychologist; - features of professional development of an educational psychologist.
9	Legal and ethical aspects of working with digital technologies in education: - basis of digital security, personal data protection; - concept of copyright, copyright protection, right to use information; - ethical issues in the digital space, interaction on the web, the code of ethics.
10	Implementation of educational projects using digital technologies: - fundamentals of pedagogical project design (technologies and techniques); - organisation of work in a team; - diagnostics and evaluation of the effectiveness of educational projects through digital technologies.
11	Actual problems of higher professional education of an educational psychologist: - functions of professional higher education; - problems of vocational education; - competitiveness of a modern specialist.
12	Digital technologies and pedagogical innovations in education: - innovative pedagogical methods and approaches of teaching using digital technologies; - adaptation of pedagogical approaches with the help of digital technologies; - research competence of an educational psychologist in the field of digital education.

Source: compiled by the authors.

The development of the elective course was designed to solve a number of didactic tasks, in particular, to update the existing knowledge of students regarding professional competencies, to determine the role of digital literacy in the work of an educational psychologist, to teach students the skills to respond to problematic situations, and to teach them to organise and plan professional activities in general. In addition, the inclusion of simulated psychological and pedagogical problematic tasks in the programme, and the use of a system and activity approach in teaching, contributed to the development of students' motivational and communicative competence. It should be noted that the conceptual approach of the elective special course was the development of students' motivation for self-development in the context of media literacy, and communicative, information and computer literacy. In addition, it was important to form the right attitude among future educational psychologists to these components of professional competence and innovations in the educational environment. The format of individual and differentiated approaches in the course classes contributed to the development of students' understanding of the specifics of working in a team.

Conducting current surveys of EG-34 respondents in the process of mastering the special course indicates the consolidation of students into a single team to solve simulated pedagogical tasks. The subjects also noted that during the learning process they had an increased interest in learning digital skills and a meaningful understanding of the importance of innovation in the educational field. At the beginning of the study, the difficulties of students in applying public speaking skills and concentration skills to a specific task were identified. However, these gaps were eliminated during the special course, and those students who had communication difficulties gained practical experience in their implementation. The participants of the experimental group also noted that it was interesting to master new material because of the format of its provision. It also contributed to the search for additional materials in extracurricular activities, which indicates the desire of students for self-development and self-knowledge as a future specialist.

Interviewing the respondents of CG-28 indicates that the proposed elective course did not arouse their high interest The course material was delivered as lectures, and the large amount of new information and terminology

made it difficult to master. However, it was definitely clear to the students that they had learned the basic concepts of digital literacy, tools and resources for working in their future professional activities. An analysis of interviews with CG-28 respondents indicates that students understand that digital literacy and ICT skills are important in the work of a specialist. However, students have a number of difficulties in implementing these skills in practice.

Thus, the conducted pedagogical research indicates the importance of using modern teaching approaches, where the student actively participates in the study of the material. In addition, the use of digital and information technologies during training helps students to visually see their application in practice, and also facilitates the process of mastering large amounts of information. The pedagogical experiment also involved the diagnosis of the level of acquired knowledge of students after the elective course. The developed questionnaire was compiled based on the training materials of the special course programme and contained 50 questions, 8 of them were based on the principle of simulated problem situations and assumed a detailed answer, and the rest had several answers. Open-ended questions have reduced the risk of accidental answers. The time to complete the questionnaire was 45 minutes (1 academic hour). The analysed test results were distributed on scales according to the number of correct answers. It was found that EG-34 has indicators of developed knowledge and skills significantly higher than CG-28, whose training took place without the introduction of innovative teaching methods. The results of the final survey of both groups are presented in Figure 1.

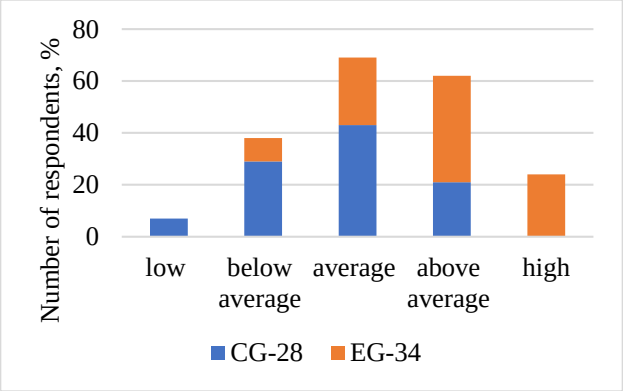

Figure 1. Analysis of the results of the final testing of the subjects after passing the elective special course

Source: compiled by the authors.

The conducted pedagogical experiment indicates the need to apply not only innovative teaching approaches, but also the use of information technology in the classroom. First of all, such a need is conditioned by the better mastering of large amounts of information in the learning process, including terminological concepts. In addition, gaining practical experience in the classroom contributes to the development of professional competencies of a future educational psychologist, and also helps students to consciously approach learning and be motivated to implement their knowledge in practice. The use of innovative methods in the process of training future specialists contributes to the development of their critical and analytical thinking, communication skills, and forms a positive attitude towards the chosen profession and the innovations introduced, in particular, the digitalisation of the educational environment.

Based on the conducted research, it can be highlighted that the purposeful formation of students' knowledge about digital literacy also contributes to the development of their motivation for self-realisation in educational activities. In addition, the development of information and communication technologies, and the acquisition of practical skills in their application, allows students to strengthen their socio-psychological readiness to implement the experience gained in their further professional activities. In addition, the conducted research on the problem of developing digital literacy of a future educational psychologist helped to identify optimal pedagogical conditions and technologies for the development of necessary skills among students. Based on the results of the study, a predictive model of the development of students' digital literacy was designed. The prognostic model is based on the stages of orientation, organisational and activity, and reflexive and evaluative orientation in learning.

The algorithm for creating a predictive model was based on the concept of using a set of pedagogical approaches, in particular, competence-based, system and activity, and differentiated. The presence of conceptual (solving professional tasks), procedural (development of professional skills and personal qualities) and effective (assessment of developed competencies and skills) components allows focusing the attention of the educational process not only on digital literacy and ICT skills, but also on the development of professional competencies of a future educational psychologist. The described model is presented more clearly in Figure 2.

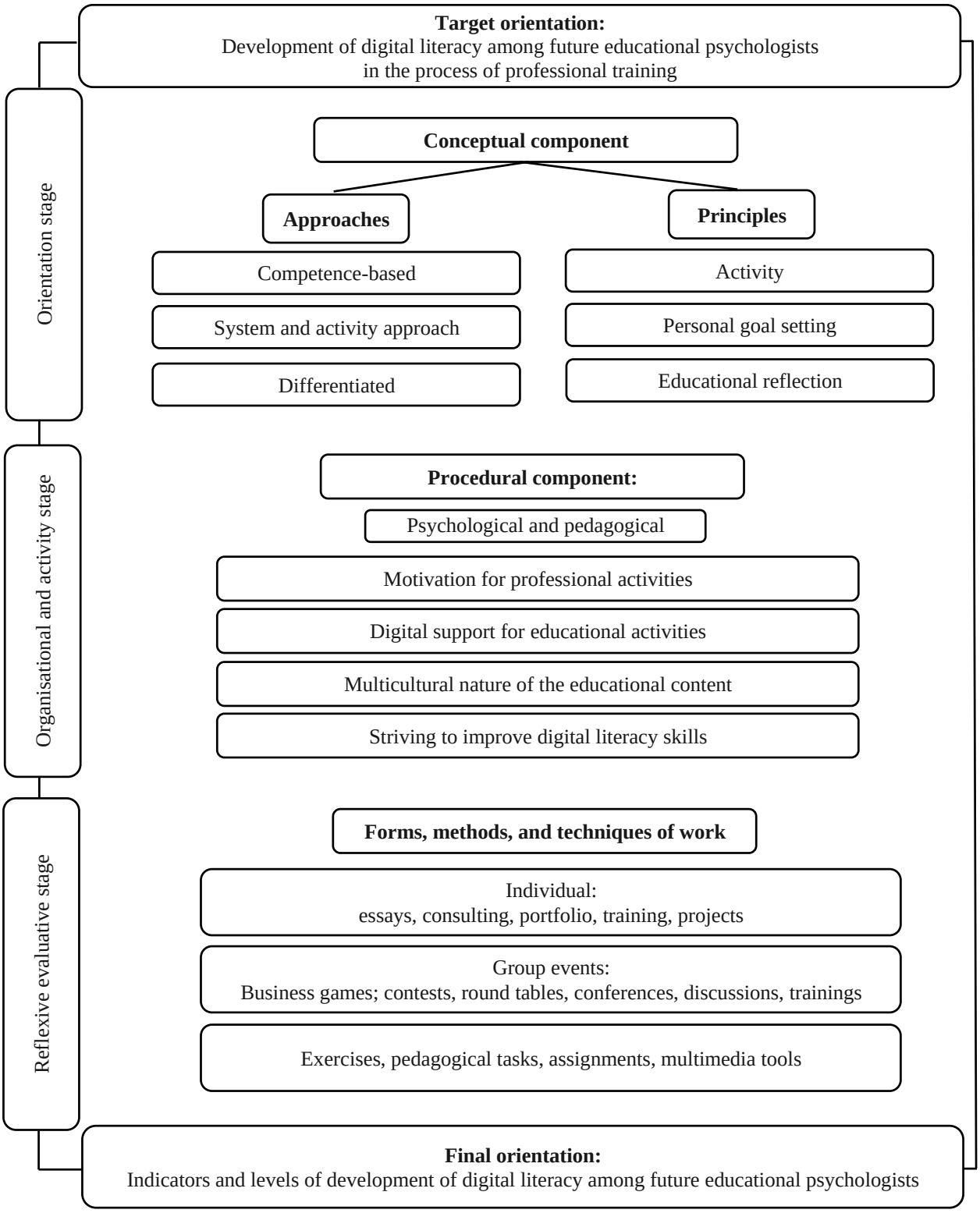

Figure 2. Predictive model for the development of digital literacy of future educational psychologists in the process of studying at the university

Source: compiled by the authors based on [3; 6; 8-10].

Within the framework of the developed model, the educational process is based on the active interaction of students with both the teacher and fellow students. This approach helps to increase the motivation level regarding the study of the course material. The specificity of successful achievement of educational objectives lies in a well-structured set of organisational forms, where their optimal and appropriate change takes place within the framework of individual and group work of students. The key factor in the concept of the presented model is the orientation of tasks for the professional training of a future specialist, where the development of digital literacy is closely interrelated with the acquisition of communicative, computer and information skills, and media literacy and

the meaningful application of innovations in educational and professional activities. In addition, it is important to diagnose the developed knowledge, which should be based on quantitative and qualitative indicators.

Thus, the conducted research indicates that the development of digital literacy in the process of studying in higher education should be based on the development of their practical skills in using digital tools and resources. This contributes to the development of students' digital competence, which will allow the future specialist to productively interact with the "digital generation" of students. The analysis of the results indicates that the most effective methods in the development of digital literacy of future educational psychologists have become project and problem-based learning. The combination of these factors determines the value of creating special pedagogical conditions for modern students. The purposeful development of digital literacy, in particular a well-chosen teaching strategy using innovative teaching methods, allows covering a sufficiently voluminous layer of educational information and at the same time create interest in teaching the discipline and motivation to search for additional knowledge. An important task of modern education remains the multicultural orientation of the educational process in combination with high-quality training of a future specialist.

Discussion

The period of study in higher education falls on active personal changes of a person. Under the influence of society, self-knowledge and the desire for self-realisation, an individual develops motivation, which also extends to motivation for future activities. Individual and psychological characteristics of a personality produce a need for professional development, where the professional identity of a future graduate is established under the influence of the experience gained. From the analysed papers by A.K. Igibayeva et al. [4], A. Haleem et al. [11], S. Timotheou et al. [12], L. Xu et al. [13], I. Jimenez-Pitre et al. [14] it follows that the era of digitalization is forcing the transformation of the learning model of modern students. In particular, the educational process is undergoing changes due to the introduction of information technologies and educational innovations into it. Thus, reality shows that it is important for the educational environment to adapt curricula to the needs of a digital society. Based on this, the implementation of the need for the development of digital literacy of future educational psychologists implies the creation of appropriate pedagogical conditions, including a controlled and purposeful process of development of digital skills and information and communication competencies.

Digital literacy is an integral part of modern professional training of specialists in psychological and pedagogical fields. The problem of its development in the university has been the subject of a number of studies in recent years. However, there is no unified view on the concept of digital literacy. Based on the analysed scientific sources [3; 5; 15], it follows that digital literacy is a complex of knowledge and skills designed to protect a person in the digital space. Digital literacy is also considered by some researchers as a skill of using digital technologies and resources on the Internet [11; 16], as a person's ability to find and evaluate certain information and transmit it using multimedia [2; 7; 17]. Despite the differences in the definition of digital literacy, the scientific community recognises it as an important component of the professional competence of a modern specialist.

In Kazakhstan, digitalisation of education has become an important strategic area reflecting the desire for modern technological trends and improving the quality of education. In higher education, the emphasis is on the development of online education and electronic libraries, which promotes flexibility in the educational process and provides access to knowledge from anywhere in the country. The digitalisation of the educational process has an impact on the methods of knowledge assessment. The introduction of electronic tests and online examination formats contributes to a more objective and fair assessment of students. An important element of the digitalisation of education is the development of an electronic portfolio system, which allows students and teachers to more closely monitor individual progress and achievements. However, when introducing digital technologies into the educational process, problematic situations also arise, such as the availability of equipment and the Internet for all participants in the educational process, high-quality training of teachers, and ensuring their cybersecurity. In this regard, the development of digital literacy of students remains an open issue for the Republic of Kazakhstan.

The main components of digital literacy, according to S. Farias-Gaytan et al. [15], include the ability to competently apply digital technologies in the educational process and psychological practice. Investigating the problem of development of students' digital literacy, the researchers focus on the need to develop critical thinking skills among the younger generation, which will contribute to their ability to critically evaluate digital information and effectively interact in the digital space. However, according to F. Pettersson [18], the educational process of a modern specialist should take place in the context of the practical use of digital tools in the framework of their future professional activity. Exploring the issues of digital competence in an educational context, the researcher highlights the need to use virtual learning platforms, online simulations and various digital tools not only for teaching, but also for diagnosing and testing students' knowledge.

Investigating the problem of digital technologies in the educational process, B. Bygstad et al. [17] note that the development of digital literacy of future educational psychologists faces the problem of ensuring sustainable access to high-quality educational resources. Thus, according to the researcher, inequality in access to technology can lead to a discrepancy in the level of digital literacy among students. A.M. Al Shabibi and M.N. Al-Suqri [19] also highlight the problem of safety and ethics in the use of digital technologies in the practical activities of an educational psychologist. Exploring the issues of security in the digital space, the authors note the need to pay attention to the problem of data privacy, ethics in handling online information, and security in the digital environment when training young professionals. Similar conclusions are obtained by A. Valencia-Arias et al. [20] in the study of innovations in the field of education. In addition, the researchers also point out that the introduction

of virtual and augmented reality into the educational process allows enriching the psychological practice of future educational psychologists by providing students with the opportunity to interact with various virtual scenarios and cases.

However, according to S. Timotheou et al. [12], a promising area is the integration of artificial intelligence into the process of professional training of future specialists. Studying the issues of digitalisation of the educational environment, the researchers note that this approach will help students effectively implement their research activities. In particular, automated data analysis systems can facilitate the processing of large amounts of information and provide more accurate results. These scientific conclusions are also correlated with the conducted empirical research. Thus, during the elective special course, appropriate conditions were organised for students of the experimental group, which involved the use of multimedia technologies and various digital tools. The respondents had access to all the multimedia offered, which contributed not only to the development of their practical skills in working with the technical base, but also to better assimilation of the course material. For the control group, the course material was taught using conventional methods, and at the end of the pedagogical experiment, students had only theoretical knowledge without the ability to apply it in practice.

Thus, the introduction of digital technologies into the professional activities of a modern specialist, and digital literacy training during specialised training at the university allows graduates to competently use innovations in their work. In particular, to apply new methods of psychological counselling, use online resources for training and customer support, and participate in interdisciplinary research projects. The introduction of digital technologies into the professional sphere requires a balanced approach to the preservation of human resources in psychological activities. Therefore, it is important for future educational psychologists to develop skills in the use of technology, communicative competencies, creative and critical thinking, and professional motivation.

The professional activity of future educational psychologists is a complex and responsible area that combines competencies in the field of pedagogy and psychology. According to M. Jortveit [21], a teacher psychologist plays a key role in the development of a healthy psychological climate in educational institutions, and in providing psychological support to students and colleagues. T.L. Hunt et al. [22] indicate that the professional activity of an educational psychologist is associated with the organisation and conduct of psychological and pedagogical work, which implies the assessment of psychological characteristics of a person, adaptation in an educational environment, and assistance in solving psychological problems. H. Crompton et al. [23] note that the organisation of a safe environment for all participants in the educational process is a priority in the work of a psychological and pedagogical specialist. In addition, an educational psychologist needs to be able to organise meetings, consultations, trainings, and other events aimed at educating healthy and emotionally stable individuals.

However, K. Topping and F. Lauchlan [24] point out that building trusting relationships and mutual understanding with the younger generation puts forward certain requirements for a modern educational psychologist, in particular, to have the ability to interact with the “digital generation” of students. To do this, a specialist needs to possess digital competence and have a positive orientation towards innovation in general. A positive attitude towards innovation plays an important role in the professional training of educational psychologists.

The modern educational environment is constantly evolving, and the ability to accept and successfully integrate innovations is becoming an integral part of a specialist’s professional growth. Thus, considering the problem of the attitude of participants in the educational process to innovations in learning, C. de las Heras-Rosas and J. Herrera [25] note that a modern specialist needs to be open to new technologies in education. The use of interactive teaching methods, online resources, virtual environments and other innovative technologies helps to interact more effectively with students and make their learning more interesting and accessible.

S. Buckingham et al. [3] indicate that future educational psychologists should strive to find new methods of work, participate in professional trainings and conferences, follow current trends in the field of pedagogy and psychology, which will allow them to effectively adapt to changing conditions and better meet the needs of modern students. In addition, the researchers note that future educational psychologists should develop critical thinking in relation to innovation. This includes the ability to analyse and evaluate new methods and technologies, considering their effectiveness and potential risks. The combination of these reflects the need to develop the communicative literacy of future specialists, which implies not only the ability to effectively transmit information, but also the ability to listen, understand, and interact with a variety of personalities.

These conclusions are also comparable with the conducted pedagogical experiment. Thus, the students of the experimental group in the process of studying in the elective course showed interest in the material, which was expressed in the search for additional information in extracurricular activities. In addition, interviewing students of this group showed that they were comfortable working both in a team and individually. However, according to the students, teamwork turned out to be more productive in solving problematic situations, since they could interact, expressing their thoughts and opinions, and had access to different points of view for solving such problems, which allowed them to critically evaluate information and make effective decisions.

Investigating the issues of media literacy, R. Sartori et al. [26] and H. Dolanbay [27] point out that media literacy complements the professional skills of a specialist, and is also a tool for the development of digital literacy among students, providing them with competent and safe interaction with media resources in the educational space. In addition, a modern educational psychologist needs to be able to use computer technology. Exploring the problem of computer literacy, A. Maftei et al. [28], C. Sánchez-Cruzado et al. [29] and J. Van Braak et al. [30] note that

computer literacy of an educational psychologist not only provides for successful mastery of modern technologies, but is also an important tool for effective psychological practice of a specialist. At the same time, the study by M. Pinto et al. [31] and M. Ross et al. [32] on the development of professional competencies of a modern specialist, point that information literacy is a key element of the professional competence of future specialists in this field. This skill includes the ability to work effectively with information in various formats. The researchers also note that an educational psychologist should be able not only to collect and evaluate information, but also to adapt it for their educational and psychological purposes. In addition, the researchers emphasise that an important aspect of information literacy is the ability to effectively use information and communication technologies. A teacher psychologist should be able to work with digital platforms, virtual tools for teaching and psychological diagnostics, and consciously use social networks to communicate and share experiences.

The scientific sources analysed earlier indicate that digital literacy contributes to the creation of an effective educational space. The development of digital competencies of a future educational psychologist provides for the development of critical thinking and creativity. The openness of a young specialist to innovations in educational activities contributes to the improvement of their professional competence and allows creating conditions for productive interaction with the "digital generation" of students. In addition, the development of students' digital literacy skills in the process of professional training provides an opportunity for future specialists to competently evaluate, manage, and use information. The totality of this also correlates with the results of an empirical study. In particular, the analysis of the results of the experimental group's activities indicates the development of students' motivation to learn, digital literacy and practical skills in working with digital tools.

The experience gained in interactive classes contributed to students' understanding of the need to acquire digital competencies for future professional activities. In addition, the current interviews with the subjects of the experimental group helped to conclude about the influence of the applied pedagogical approach on the professional self-determination of students. Thus, the respondents noted that an innovative approach to the presentation of educational material using information technology helped to take a fresh look at the chosen profession. The respondents also noted the importance of the experience gained for subsequent training, where, in addition to knowledge of digital literacy, they were able to master organisational methods of working in a team and individually. Thus, the proposed pedagogical approach, which was applied at the elective special course, contributed to the development of not only digital literacy, but also an understanding of the importance of developing digital competencies for the future profession.

Conclusions

The professional development of a modern educational psychologist is inseparably linked with the development of their digital literacy. This is becoming especially important in the era of digitalisation and technologisation of society. It also puts forward requirements for the quality of training of modern specialists and actualises the issues of organising educational activities. Given the rapid development of digital technologies and the emergence of new teaching methods, educational programmes need to be permanently updated, which involves the development of relevant educational materials. Future educational psychologists who have mastered digital literacy while studying at the university are able to effectively use digital tools in their work. Digital literacy training contributes to improving the quality of education in general, and modern technologies make the learning process productive, accessible, and interesting.

The hypothesis formulated at the beginning of the study was empirically confirmed. The conducted pedagogical experiment showed that the use of innovative methods in the process of professional training contributes to better information acquisition and allows students to develop digital skills. The analysis of scientific research on the development of digital literacy among future educational psychologists indicates the need to improve the quality of educational programmes and transform teaching methods. In addition, the results of empirical research show that the introduction of innovations and digital technologies into the educational process contributes to the active interaction of students in the classroom, the development of their critical and creative thinking, and promote professional self-determination. This is also confirmed by the obtained data of the pedagogical experiment, which indicate that after the elective course, the knowledge and skills of the respondents of the experimental group are higher in comparison with the results of the control group. In particular, the final testing of students showed that 43% of the respondents in the control group have an average level of digital literacy.

Students do not have practical skills with digital tools, since they mastered the information of the special course in theoretical lectures without using digital technologies. Appropriate learning conditions were organised for the experimental group, where respondents could freely interact with digital tools and master new material through multimedia. According to the results of the final testing, the majority of EG-34 respondents (41%) have an above-average level of digital literacy, and 24% have a high level, which indicates the importance of using innovative approaches and methods in the learning process.

The prospect of further study is to analyse the readiness of future educational psychologists for professional activity in the context of digitalisation of the educational environment. The practical value of the obtained results and conclusions consists in the possibility to use the proposed pedagogical approach for the development of digital literacy of students in the humanities.

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Conflict of Interest

None

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Розвиток цифрової грамотності майбутнього практичного психолога у процесі професійної підготовки

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Анотація

Актуальність. Актуальність дослідження зумовлена стрімкою цифровізацією суспільства, яка висуває необхідність перегляду освітніх програм з метою підготовки багатофункціональних фахівців освітньої галузі, здатних використовувати цифрові інструменти у своїй професійній діяльності та продуктивно взаємодіяти з "цифровим поколінням" учнів.

Мета. Метою дослідження є пошук ефективних педагогічних стратегій розвитку цифрової грамотності у майбутніх фахівців.

Методологія. У дослідженні використано якісне поєднання причинно-наслідкового аналізу, індукції та синтезу для вивчення сучасних підходів до розвитку цифрової грамотності. Було проведено педагогічний експеримент з використанням методів анкетування та контрольних груп для оцінки рівнів цифрової грамотності студентів. Цей експеримент також мав на меті оцінити ефективність педагогічних стратегій у формуванні цифрових навичок у майбутніх фахівців.

Результати. Розгляд теоретичного підґрунтя проблеми дослідження показав, що цифрова грамотність практичного психолога ґрунтується на здатності реалізовувати свої знання про цифрові технології та ресурси у професійній діяльності. У ході дослідження було аргументовано важливість інноваційного підходу у розвитку цифрової грамотності студентів під час навчання в університеті. Крім того, проаналізовані сучасні дослідження з питань цифрової грамотності в освітній сфері дозволили виявити актуальні проблеми, що впливають на якість розвитку цифрових компетентностей студентів. У зв'язку з цим було розроблено та впроваджено в освітню програму вибірковий спецкурс.

Висновки. Дослідження показало, що інтеграція інноваційних методів та цифрових технологій у підготовку освітніх психологів значно підвищує їхню цифрову грамотність та професійні компетенції, про що свідчать результати експериментальних груп.

Ключові слова: інновації; освітня стратегія; інформаційні компетентності; диференційований підхід; комунікативні навички.