

TRAINING OF FUTURE PERSONNEL IN THE CONDITIONS OF DIGITIZATION OF EDUCATION AS A PEDAGOGICAL PROBLEM

Boborakhimova D.A.

TMI Senior Lecturer

<https://doi.org/10.5281/zenodo.7444806>

Abstract. In the article highlighted the analysis of some scientific research works on the problems of creating a digital educational environment in the process of personnel training and a number of issues that need to be solved.

Keywords: E-learning, digital learning environment, higher education.

ПОДГОТОВКА БУДУЩИХ КАДРОВ В УСЛОВИЯХ ЦИФРОВИЗАЦИИ ОБРАЗОВАНИЯ КАК ПЕДАГОГИЧЕСКАЯ ПРОБЛЕМА

Аннотация. В статье выделен анализ некоторых научных исследований по проблемам создания цифровой образовательной среды в процессе подготовки кадров и ряд вопросов, требующих решения.

Ключевые слова: электронное обучение, цифровая среда обучения, высшее образование.

One of the main strategic directions is the education of a self-developing person in the continuous education system, the introduction of information and communication technologies into the educational process in the context of the modernization of the education system [1,2]. Digitization of all areas of educational activity, introduction of information technologies, formation of a new digital information culture in the learner is gaining importance in the educational process. Digitization of education creates conditions for a positive change in the learning environment and requires the subjects of education to constantly master the types of digital activities. In such circumstances, it is natural that the requirements for personnel training change regularly.

Informatization of education is directing into the new information technology tools to educational goals, to establish the practice of processing educational and methodological support and its effective use. At the same time, informatization serves as a basis for the development of the distance education system. In the process of informatization, new information technology tools are widely used in the educational system.

Informatization of education, first of all, implies the following:

- systematic study, organization and use of modern means of computer technology, information and communication technologies;
- organization of future informatics teachers' independent work with information and communication technologies and training-methodical provision;
- to improve the educational process taking into account the new opportunities for the effective use of information technologies [3].

Digitization of the education sector primarily aims to train a person who have solid fundamental knowledge and can apply it in their work by mastering a comprehensive educational program. Scientific research aimed at solving this problem is being carried out intensively. In particular, a number of pedagogical studies have been carried out aimed at the development of information culture in pupils and students at various stages of education and the production of components or separate aspects of the system of teacher training in the field of application of

informatics and information technologies. In particular, D.M. Esonbaeva's candidate thesis on the topic "Non-traditional lessons on the basics of informatics and computer technology and their methods of passing" developed recommendations on the organization and conduct of non-traditional lessons in informatics education in 8-9 grades of general secondary schools, and the content of non-traditional lesson technologies -the essence is disclosed [4].

D.B. Abdurahimov's candidate's dissertation on the topic "Methodology of teaching informatics in vocational colleges in connection with the types of education" developed recommendations for training on the basis of the Internet and distance education in the field of informatics to improve the skills of junior specialists [5].

M.E. Mamarajabov's candidate's dissertation on the topic "Content and teaching methodology of the "Applied software" department of informatics in vocational colleges (Excel and Power Point programs)" Teaching topics "Excel and Power Point programs" in informatics and an e-textbook on the subject of "Excel program" a new generation educational methodical materials complex has been developed [6].

Scientific-methodological recommendations have been developed to raise the quality of computer education to a new level, to improve pedagogical software tools psychologically, pedagogically, and methodologically [7].

M.H. Lutfillaev's doctoral dissertation on the topic "Theory and practice of information technology integration in the improvement of the educational process of higher education (in the case of computer science and natural sciences)" researches the use of information technologies in the educational process of higher education in general, its theoretical, scientific-methodical and pedagogical foundations It is based on the fact that learning in general is an actual problem. The essence, content and structure of the integration of information technology components as a whole pedagogical system have been theoretically developed and applied to the educational process of higher education. This system has developed tools for the joint use of independent educational and informational teaching technologies, such as an electronic guide, a virtual booth, distance learning, a virtual library, and a pedagogical software tool [8].

N.I. Taylakov's doctoral dissertation on the topic "Scientific and pedagogical foundations of creating a new generation of educational literature for a continuous education system (informatics course)" presented pedagogical requirements, criteria, structure, forms and types of educational literature for creating a new generation of educational literature as a whole integrated system researched as Pedagogical requirements and criteria for creating a new generation of educational literature have been developed. In the creation of a new generation of educational literature on the computer science course, together with the provision of scientific and practical theoretical information, rules, and concepts related to science, they should be created based on the age and psychological characteristics of the students, and the harmony based on a consistent sequence that prevents repetition in interdisciplinary communication. didactic principles relied on in the creation of educational literature have been improved, taking into account the rapid penetration of modern information technologies into education [9].

U.Sh. Begimkulov's doctoral dissertation on the topic "Theory and practice of organizing and managing the informatization of pedagogical educational processes" scientific-practical recommendations for the creation of the www.pedagog.uz portal aimed at gathering, systematizing, storing and delivering information-educational resources in the Internet system of pedagogical education in the republic presented and accordingly achieved the following results:

a single communication network of pedagogical education was formed on the basis of combined electronic educational and scientific resources; educational-methodical provision of distance education has been formed; a single database of graduates, an electronic system for ordering teaching staff, methodical application of young teachers, etc. have been developed [10].

F.M. Zakirova's doctoral dissertation on the topic "Theoretical and practical foundations of the methodical training of future informatics teachers in higher education institutions of pedagogy", the content of the methodical training of future informatics teachers in higher education institutions, the methodical system of the professional-methodical activity of informatics teachers in the modern education system was based and developed [11].

In A.I. Ashirova's candidate's dissertation on the topic "Creating a software shell from the subject of "Information system design" and using it in education (on the example of technical higher educational institutions)" a software shell was created from the subject of "Information system design" in technical higher educational institutions and a methodology for its use in the educational system was developed [12].

A.G. Eminov's candidate's dissertation on the topic "Methodology for developing the competence of future teachers in computer graphics" revealed the essence of the concept of "Competence of the teacher in computer graphics" and described literacy in computer graphics, the experience of displaying computer graphics in various standard and non-standard situations, motivation in computer graphics such elements as willingness to manifest are interconnected [13].

S.K. Tursunov's candidate's thesis on "Creation of electronic information resources in education and methodological basis of their introduction" developed the methodology of creating electronic information resources by teaching "Web design". Recommendations on the use of these experiences in the system of professional development and independent education of students have been developed [14].

M.R. Fayzieva's Doctor of Philosophy (PhD) dissertation on the topic "Creation of Web systems adapted to the educational process" includes the existing pedagogical functions of the higher education system, and the Web adapted to the educational process based on modern Web technologies, aimed at the implementation of integrated information-educational provision electronic information-educational resources were created based on system software and the improved content of "Web programming" science [15].

G.J. Abylova's Doctor of Philosophy (PhD) dissertation on the topic "Improving the scientific-methodical foundations of teaching computer science in the field of music education" to future music teachers, the structure, forms, and methods of teaching this course in the field of specialization and the methodology was developed and the scientific-methodical foundations of teaching computer science in the field of musical education were improved [16].

U.A. Nasritdinova's Doctor of Philosophy (PhD) dissertation on the topic "Methodology of using three-dimensional modeling tools in teaching computer graphics" developed methodical developments, a set of tasks, a multimedia electronic manual within the technology of imitation modeling of the methodical system of the "Computer graphics" learning process developed [17].

The research works analyzed above serve to improve the use of information technologies at various stages of education and to improve the digital environment of training future personnel.

New educational programs in informatics and information technologies are focused on the development of the personality of the learner, who is considered the main subject of education. This is clearly manifested in various directions of the development of the educational system: in the scientific justification of new approaches to the development of the content of the continuous educational system, in the creation of a new information-educational environment.

In our opinion, improving the content, methods and tools of teaching informatics in higher educational institutions of our country based on an innovative approach will allow to eliminate the following deficiencies in personnel training:

- incomplete professional training;
- the methodological, psychological, pedagogical and didactic foundations of the use of digital tools in the field of education are not sufficiently disclosed;
- insufficient formation of the skills of using information and communication technologies in solving problems related to the field in the future personnel;
- such as the inability to use software designed and based on the educational purpose during the educational process.

Therefore, the following factors requiring the need to improve the content of personnel training can be noted:

- the disparity between the level of training of personnel in higher education and the demands of modern society on the educational system;
- the existence of a need to carry out comprehensive studies that justify the pedagogical possibility of the digital educational environment in education and the need for the integrated use of information and communication technologies in the training of future personnel;
- non-availability of objective criteria systems, control and evaluation methods that diagnose the quality of professional training and readiness for professional activities of specialists.

Based on the above, it is worth noting that improving the content, methods, tools, strategy and methodology of choosing the organizational form of future personnel training is an urgent problem.

In the context of globalization, which covers informatization and integration of all areas of production, as an important driving force of economic development, the following system of additional requirements is put forward to the potential of intellectual education, including the level of professional competence of personnel:

- 1) to be able to find solutions to problems related to the profession by means of modern information and communication technologies;
- 2) improving the skill of choosing appropriate information technology tools in solving professional problems;
- 3) know the basics of mutual information exchange;
- 4) understanding the social content of the professional issues being resolved.

At the modern stage of education development, the use of information and communication technologies has become an integral part of the activity of educational subjects. Therefore, problems related to the introduction of information and communication technologies in education are increasing.

In particular, the following issues require an urgent solution:

1) creating an information-educational service industry based on legal and regulatory support, technological standards and information technologies in the educational system;

2) modernization of education, determining the content and teaching methods of the digital educational environment;

3) creation of textbooks, educational and methodological manuals in new digital distributors using multimedia and web technologies by ensuring quality control of information educational products and technologies;

4) providing the field of educational informatization with necessary personnel [18,19].

The rapid development of digital technology in the context of informatization is an important feature of the methodical system. In particular, in the conditions of informatization of education, to pedagogues of higher education, on the basis of the use of digital educational technologies, methods of organizing practical and cognitive activities of learners, improvement of teaching tools and methods; effective management of the educational process; a number of tasks are set, such as improving information-methodical supply.

REFERENCES

1. Ўзбекистон Республикаси Президентининг “Ахборот технологиялари ва коммуникациялари соҳасини янада такомиллаштириш чора-тадбирлари тўғрисида”ги ПФ-5349-сон Фармони // Ўзбекистон Республикаси қонун ҳужжатлари тўплами, 2018 й., 17-сон.
2. Ўзбекистон Республикаси Президентининг 2017 йил 30 июндаги “Республикада ахборот технологиялари соҳасини ривожлантириш учун шарт-шароитларни тубдан яхшилаш чора тадбирлари тўғрисида”ги ПФ-5099-сон Фармони // Ўзбекистон Республикаси қонун ҳужжатлари тўплами, 2017 й., 27-сон.
3. Калекеева Т.Т. Таълимни ахборотлаштириш шароитида бўлажак информатика ўқитувчиларини тайёрлаш муаммолари // Эжинияз Қосыбай улының 190 жыллык ҳәм Эжинияз атындағы Нөкис мәмлекетлик педагогикалық институтының 80 жыллык юбилейлерине бағышланып өткерилген «Эжинияз атындағы Нөкис мәмлекетлик педагогикалық институтының илим, билимлендириў ҳәм тәрбия мәселелерин раўажландырыўдағы орны» атамасындағы илимий-теориялық ҳәм әмелий конференция материаллары. – Нөкис: НМПИ, 2014 жыл. Б. 150-152.
4. Эсонбаева Д.М. Информатика ва ҳисоблаш техникаси асослари»дан ноанъанавий дарслар ва уларни ўтиш методикаси // Пед. фан. ном. ... дис. – Тошкент: Низомий номидаги ТДПУ, 2003. –143 б.
5. Абдурахимов Д.Б. Касб-хунар коллежларида информатикани таълим турлари алоқадорлигида ўқитиш методикаси // Пед. фан. ном. ... дис. автореферати – Тошкент: Низомий номидаги ТДПУ, 2007. –24 б.
6. Мамаражабов М.Э. Касб-хунар коллажларида информатика фанининг «Амалий дастурий таъминоти» бўлими мазмуни ва ўқитиш методикаси (Excel ва Power Point дастурлари мисолида) // Пед. фан. ном. ... дис. автореферати – Тошкент: Низомий номидаги ТДПУ, 2004. –23 б.
7. Ҳайитов А.Г. Умумий ўрта таълимда информатика ва ҳисоблаш техникаси асосларини ўқитишни компьютерлаштириш назарияси ва амалиёти // Пед. фан. докт дисс. автореферати. – Тошкент: 2006. – 38 б.

8. Лутфиллаев М.Х. Олий таълим ўқув жараёнини такомиллаштиришда ахборот технологияларини интеграциялаш назарияси ва амалиёти (Информатика ва табиий фанлар мисолида) // Пед. фан. докт. ... диссертацияси – Самарканд: Алишер Навоий номидаги СДУ, 2005. –236 б
9. Тайлақов Н.И. Узлуксиз таълим тизими учун информатикадан ўқув адабиётлари янги авлодини яратишнинг илмий педагогик асослари // Монография. – Тошкент: «Ўзбекистон миллий энциклопедияси» Давлат илмий нашриёти, 2005. – 160 б.
10. Бегимқулов У.Ш. Педагогик таълим жараёнларини ахборотлаштиришни ташкил этиш ва бошқариш назарияси ва амалиёти // Пед. фан. докт. ... дисс. автореферати. – Тошкент: 2007. – 38 б.
11. Закирова Ф.М. Теоретические и практические основы методической подготовки будущих преподавателей информатики в педагогических вузах // Дисс. докт. пед. наук.–Ташкент, 2008 – 312 с.
12. Аширова А.И. «Ахборот тизимини лойиҳалаш» фанидан дастурий қобик яратиш ва таълимда фойдаланиш методикаси (техника олий ўқув юртлари мисолида) // Пед. фан. ном. ... дис. автореферати. – Тошкент: Низомий номидаги ТДПУ, 2009. –28 б.
13. Эминов А.Ф. Бўлажак ўқитувчиларнинг компьютер графикаси бўйича компетентлигини ривожлантириш методикаси // Пед. фан. ном. ... дис. автореферати – Тошкент: Низомий номидаги ТДПУ, 2011. –22 б.
14. Турсунов С.К. Таълимда электрон ахборот ресурсларни яратиш ва уларни жорий қилишнинг методик асослари // Пед. фан. ном. ... дис. автореферати – Тошкент: Низомий номидаги ТДПУ, 2011. –26 б.
15. Файзиева М.Р. Ўқув жараёнига мосласувчи web тизимларни яратиш // Пед. фан. фалс. докт. ... дисс. автореферати. – Тошкент: 2017. –45 б.
16. Абылова Г.Ж. Мусиқа таълими йўналишида информатикани ўқитишнинг илмий-услубий асосларини такомиллаштириш // Пед. фан. фалс. докт. ... дис. автореферати – Нукус: Ажиниёз номидаги НДПИ, 2018. –48 б.
17. Насритдинова У.А. Компьютер графикаси фанини ўқитишда уч ўлчамли моделлаштириш воситасидан фойдаланиш методикаси // Пед. фан. фалс. докт. ... дисс. автореферати. – Тошкент: 2018. –50 б.
18. Юнусова Д.И. Инновации в предметно-методической подготовке будущих учителей математики. Сибирский педагогический журнал, 2008, №6. С.316-323.
19. Юнусова Д.И. Применение информационных технологий в подготовке педагогических кадров. Информатика и образование, 2008, №11. С.51-52.