ПЕДАГОГИКА ЖӘНЕ ПСИХОЛОГИЯ

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Professional development of teaching staff in the field of innovative educational technologies

Abstract

The main problem: At the moment, the education system no longer has enough traditional tools for organizing classes, so there is a problem of actively using innovative products based on the use of a set of methods and techniques aimed at the effective development of practical skills, knowledge and mental abilities of students.

Objective: In the system of advanced training, it is necessary to develop the structure and content of courses that allow in a limited time to achieve the solution of an important task – the use of IT technologies in the educational process. The article is devoted to the goals and objectives of professional development of teaching staff in the application of innovative educational technologies in online learning.

Methods: The methods of analysis, synthesis and deduction were used in the article. The existing models of professional development in higher education institutions are described in detail.

Results and their significance: The practical result was the developed training program in the field of application of innovative educational technologies by teachers. The training program includes a system for developing interactive multimedia tasks and projects, the content of which stimulates independent and creative work to transfer the acquired knowledge and skills of students.

Keywords: advanced training courses, online training, innovative educational technologies, IT competencies.

Introduction

Currently, professionally relevant information is growing in an avalanche, and the «life cycle of knowledge» is shrinking at a rapid pace. In this regard, the system of advanced training of teachers of universities, colleges, as well as teachers of schools and lyceums needs to be developed ahead of schedule.

In order for a teacher to be competitive, advanced training courses must provide:

– the involvement of each teacher, regardless of his work experience and field of professional activity;

– continuity, which consists of the principles of continuity and systematicity;

– individualization of advanced training courses, achieved by adapting the teacher's education to the level of his competence and personal professional needs;

– providing a high-quality level of professional development for all employees in the field of education, regardless of the qualification category of the teacher, the type of educational institution in which he works (secondary school, gymnasium, preschool educational institution, extracurricular work center, college, university);

– maintaining a high level of scientific and methodological support throughout the entire professional development process.

All of the above goals and objectives, according to the author of the article, are aimed at ensuring compliance with the requirements for achieving the quality of modern education [1].

Materials and methods

The analysis carried out by the author of this article of the implementation of plans in the field of professional development of pedagogical staff of universities allowed us to identify the main models of professional development of teachers.

Model No. 1. Professional development is carried out in the traditional form, which is a 72-hour program of additional professional education organized on the basis of the university where the teacher works. Up to 20 % of university teaching staff annually go through this model of professional development. As a positive side of this model, it is possible to highlight the possibility of on-the-job training.

Model No. 2. Professional development, organized in the form of 72-hour programs based on leading universities. The disadvantages of this model include limited access to these advanced training programs. Only about 10-20 university teachers go through this model per year.

Model No. 3. Internships in Kazakhstani and foreign universities. Among the positive aspects of this model, it is possible to highlight the design or coordination of the internship program by both universities, the high motivation of students to master the training program, the development of conditions for the application of acquired knowledge and experience in professional activities.

Model No. 4. Advanced training programs with the inclusion of e–learning – online training. This model has been gaining popularity in recent decades, due to the rapid development of educational technologies that allow classes to be conducted in real time.

At the moment, there are factors of using online learning in the education system.

The following aspects are factors: the educational process has become resource-intensive; the availability and effectiveness of educational services has significantly decreased; the shortage of highly qualified specialists with high pedagogical skills has increased.

Results

To solve the problems that have arisen, reduce the resource intensity of the educational process and ensure the accessibility of learning, it is necessary to use innovative teaching methods, introduce modern pedagogical technologies and ICT into the educational process. In addition, new realities require teaching staff to have knowledge in the IT field, the use of ICT and online learning technologies, regardless of the type of professional activity [2].

In accordance with the project «Modernisation of Higher Education in Central Asia Through New Technologies» (HiEdTec) of the Erasmus+ program, an online advanced training course for teaching staff was held at the Innovative Eurasian University in spring 2020. The course was aimed at studying innovative educational technologies and didactic models. The trainers of the course have compiled a training program based on familiarization and training of teachers with ICT-based innovative educational technologies. Initially, the training took place in two stages. At the first stage, 10 trainers, active university teachers, were trained in an online format (Figure 1, Figure 2).

University teachers from various fields of pedagogical activity were selected to complete the training: These are educators, biologists, computer scientists, machine builders, economists, and e-Learning specialists. This approach was applied so that future coaches could take into account the specifics of teaching various disciplines. At the second stage, the trainers who completed the training courses trained 100 tutors in the use of innovative educational technologies and didactic models in the context of adapting education to the digital generation.

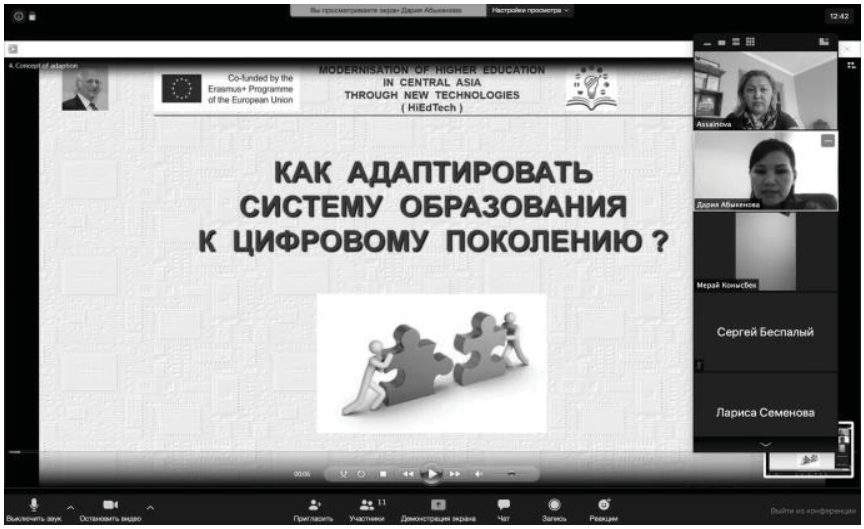

Figure 1 – Online refresher course

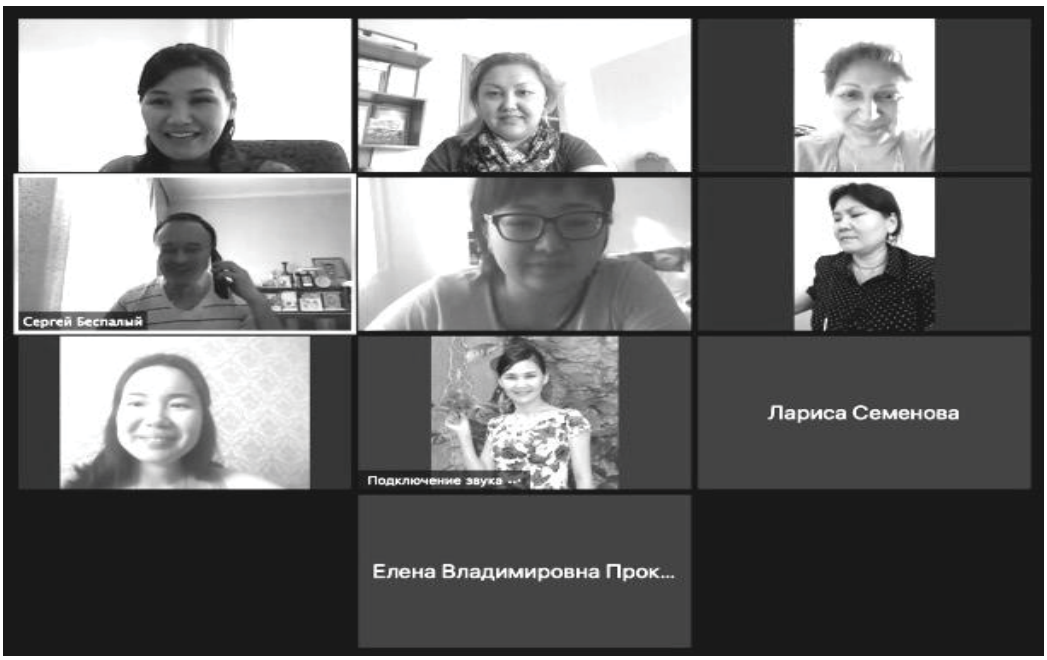

Figure 2 – Training of online course trainers

The author of this article acted as a trainer at online refresher courses (Figure 3). In the classroom, teachers were trained to teach classes online, develop video materials and use various Web 2.0 services in teaching.

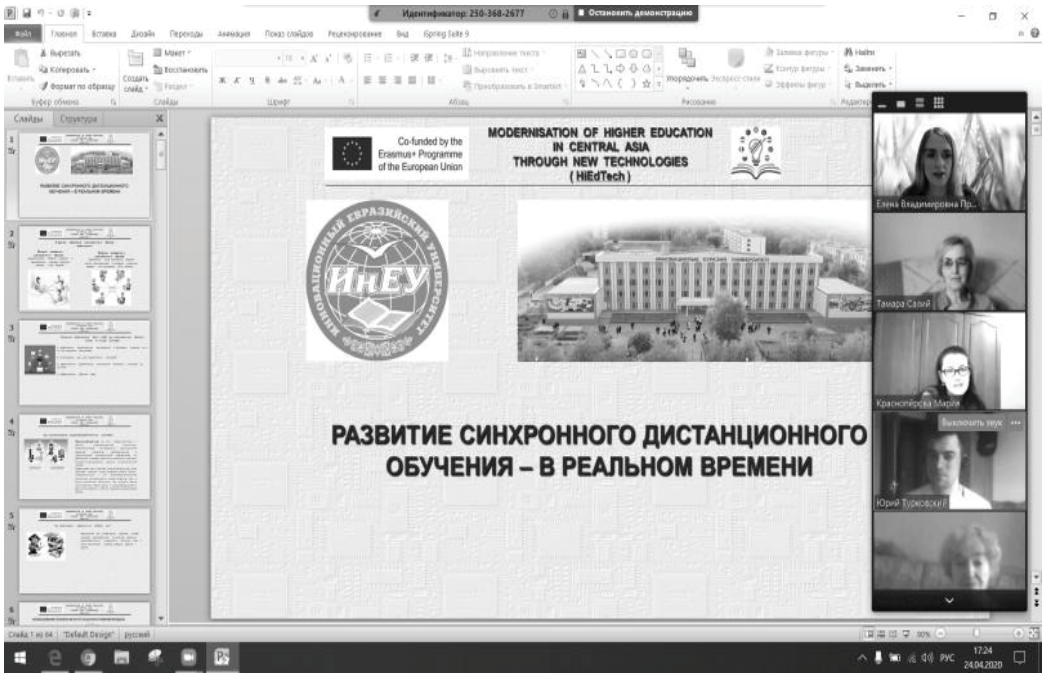

Figure 3 – Training of tutors in online courses

Discussion

As part of the online refresher courses for the teaching staff, the author of the article taught the cadets the rules for creating interactive presentations, how to use the video conference environment and virtual laboratories. In the practical part of the online courses, teachers learned how to develop and publish interactive multimedia textbooks on the subjects taught on the Internet (Figure 4). The teachers who studied at the online courses showed great interest in the Web 2.0 services being studied and began their practical application in online student education.

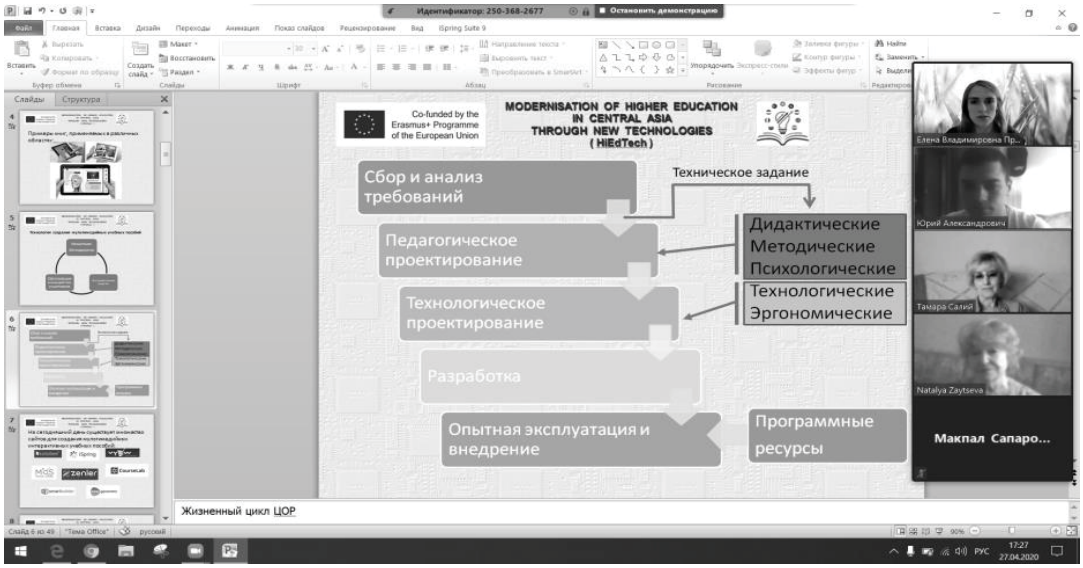

Figure 4 – Creation of interactive multimedia tutorials

The trainers have developed a refresher course, according to which teachers are trained annually in offline and online formats with mandatory issuance of certificates. The teaching staff studies technologies and methods of online learning, pedagogical design, learns to develop electronic educational resources and interactive multimedia textbooks, gets acquainted with the methodology of including virtual laboratories in the educational process.

In the spring of 2022, the trainers of the advanced training courses revised the training program and developed a new course «Information and communication technologies in the scientific and pedagogical activity of a teacher: technologies and methods of online learning and pedagogical design». This course is designed for 72 hours, lasting 5 academic weeks. The training format is full-time (22 hours) and distance (50 hours). The first week is devoted to the study of technology and methods of online learning, in the second week, cadets study pedagogical design, the third week includes sections on innovative and didactic models and gamification, during the fourth week, course participants are trained to develop electronic educational resources (Figure 5, Figure 6), during the training week 5, trainers teach how to use interactive multimedia tutorials in traditional and distance learning.

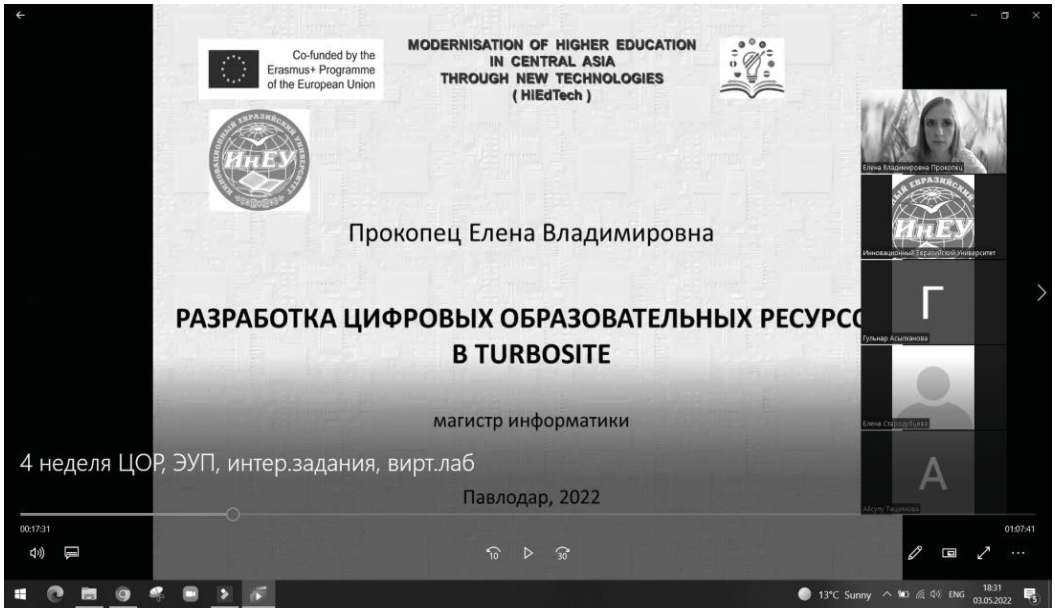

Figure 5 – Development of digital educational resources

Figure 6 – TechnologyforDER

Table 1 shows the program of the advanced training course for teaching staff.

Table 1 – The program of the advanced training course

Topic	in person	remotely
1 week. Technologies and methods of online learning		
Introductory lesson.Basic concepts of online learning, regulatory documents	1	
Technologies and methods of online learning	3	12
2 weeks. Pedagogical design		
Pedagogical design	4	7
3weeks		
Innovative and didactic models (STEM, inverted class, stream)	1	3
Gamification (gamification)	1	3
The use of distance learning technologies in inclusive education	2	4
4week. Electronic educational resources		
Development of MOEC	2	4
Development of video lectures	2	3
5week. Interactive multimedia teaching aids in traditional and distance learning		
Development of digital educational resources in the iSpring Suite	1	2
Development of digital educational resources in TurboSite	1	2
Development of electronic textbooks in Vectorian Giotto	1	2
Interactive tasks using LearningApps and Quizizz	1	2
Virtual laboratories and their application in the educational process.	1	6

At the end of the advanced training course, each student is given a certificate (Figure 4).

Figure 7 – Certificate of completion of the course

Conclusion

The current situation around the world has affected all areas of activity, including education. Today, special knowledge is required from teachers, regardless of the disciplines taught, simple skills to turn on the computer and go to Zoom are not enough. Teachers and teachers of schools should have knowledge, skills and abilities that contribute to the organization of the educational process of schoolchildren and students in a distance format at the proper pedagogical level. Teaching staff should acquire the necessary IT competencies and learn how to give assignments and work through the remote system of an educational institution. The author of this article came to the conclusion that conducting advanced training courses on innovative educational technologies will help to a large extent solve the above problems in organizing distance learning and traditional formats.

THE LIST OF SOURCES

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Инновациялық білім беру технологиялары саласындағы педагог қызметкерлердің біліктілігін арттыру

Аңдатпа

Қазіргі уақытта білім беру жүйесінде сабақты ұйымдастырудың дәстүрлі құралдары жеткіліксіз, сондықтан білім алушылардың практикалық дағдыларын, білімі мен ақыл-ой

қабілеттерін тиімді дамытуға бағытталған әдістер мен әдістердің жиынтығын пайдалануға негізделген инновациялық өнімдерді белсенді пайдалану мәселесі туындады.

Біліктілікті арттыру жүйесінде шектеулі мерзімде маңызды мәселені – білім беру процесінде ат технологияларын қолдануға қол жеткізуге мүмкіндік беретін курстардың құрылымы мен мазмұнын әзірлеу қажет. Мақала онлайн оқытуда инновациялық білім беру технологияларын қолдану бойынша педагог қызметкерлердің біліктілігін арттырудың мақсаттары мен міндеттеріне арналған.

Мақалада талдау, синтез және дедукция әдістері қолданылды. Жоғары оқу орындарында біліктілікті арттырудың қолданыстағы үлгілері егжей-тегжейлі сипатталған.

Автор жүргізген педагогикалық қызметкерлердің біліктілігін арттыру курстарын өткізу қажеттілігін талдаудың практикалық нәтижесі педагогтардың онлайн оқытуда инновациялық білім беру технологияларын қолдану саласында әзірленген оқыту бағдарламасы болды. Оқыту бағдарламасында негізгі танымдық құрамдас бөліктен басқа, интерактивті мультимедиялық тапсырмалар мен жобалар жүйесі ұсынылған, олардың мазмұны алынған білім мен дағдыларды біліктілікті арттыру курстарының тыңдаушыларының кәсіби қызығушылық саласына көшіру бойынша өзіндік және шығармашылық жұмысты ынталандырады.

Түйін сөздер: біліктілікті арттыру курстары, онлайн оқыту, инновациялық білім беру технологиялары, IT-құзыреттіліктер.

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Повышение квалификации педагогических работников в области инновационных образовательных технологий

Аннотация

В настоящий момент в системе образования уже недостаточно традиционных инструментов организации занятия, поэтому назрела проблема активного использования инновационных продуктов, основывающихся на использовании совокупности методов и приемов, направленных на эффективное развитие практических навыков, знаний и умственных способностей обучающихся.

В системе повышения квалификации необходимо разработать структуру и содержание курсов, позволяющих в ограниченные сроки добиться решения важной задачи – применению ИТ-технологий в образовательном процессе. Статья посвящена целям и задачам повышения квалификации педагогических работников по применению инновационных образовательных технологий в онлайн обучении.

В статье были использованы методы анализа, синтеза и дедукции. Подробно описаны существующие модели повышения квалификации в высших учебных заведениях.

Практическим результатом проведенного автором анализа необходимости проведения курсов повышения квалификации педагогических работников, стала разработанная программа обучения в области применения педагогами инновационных образовательных технологий в онлайн обучении. В программу обучения, помимо базовой познавательной составляющей, предложена система интерактивных мультимедийных заданий и проектов, содержание которых стимулирует самостоятельную и креативную работу по переносу полученных знаний и умений на профессиональную область интересов слушателей курсов повышения квалификации.

Ключевые слова: курсы повышения квалификации, онлайн обучение, инновационные образовательные технологии, IT-компетенции.

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