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The use of digital technologies in the process of training future foreign language teachers

This article reveals the content of the experimental work to test the effectiveness of the technology of using digital pedagogy in the training of future teachers of a foreign language and its final results. The authors conducted an experiment to determine the relevance of the use of digital technologies in universities. According to the content of the diagnosis, the determination of the level of quantitative literacy of future teachers in the experimental group and the control group was carried out on the basis of the system. During the experimental work, the primary diagnostics of the formation of digital literacy of future foreign language teachers were studied. In the course of the study, a survey of students studying in the specialty "Foreign language: two foreign languages" was conducted, a comparative analysis of the results of two stages of the pedagogical experiment was carried out, and the results of the experiment were determined.

Keywords: digital technologies, English language teachers, foreign language, open educational resources, multimedia, internet technologies, higher education, students.

Introduction

Today's progressive globalization process intensifies World competition, as a result of which countries have a significant advantage over each other, their competitiveness is now determined by innovation, information and technological forces and human capital. The transition of the world space to digital pushes the higher education system to become a catalyst for the digital transformation of the entire Kazakh society. Proceeding from this, one of the national priorities that our country adheres to – orientation to quality education, is a constructive attitude to the system of training future teachers in general.

In this regard, the trends in the development of educational technologies are aimed at Open Education, which allows students to acquire self-knowledge, self-actualization and self-development. It is noted that these areas are implemented within the framework of the state programs for the development of education in the Republic of Kazakhstan. On the one hand, due to the technological support of the educational process, teachers and students are fully responsible for the choice of information technology tools available in the conditions of Independent Education of students [1].

The main sign of scientific and technological progress in a modern country has moved to a new stage aimed at mass informatization of society. As the theory and practice of teaching show, a significant potential for the professional and personal growth of students acquires a new character of the use of digital technologies in teaching. In accordance with this, the basis of the modern education system is the massive use of digital information resources, and remote, mobile and cloud technologies in the educational process [2].

The use of digital technologies in an open educational space is accompanied by profound changes in pedagogical methods and approaches, in the educational process of teachers and students, which improves the quality of education, and allows the developing and improving the educational process.

Currently, one of the most pressing issues is the issue of educating students about a quality specialist who freely uses digital technologies. Therefore, each student should have a goal: "I will become a master of my craft in the future." It is clear that every student who takes this position will benefit our society.

The solution to this problem, given that reflexive competence in the use of information technologies by students, has its own place, we based the third trend on the reflexive competence of students based on the use of Information Technologies [3]. Changing the nature and form of the tasks to be solved reduces the effectiveness of traditional approaches to assessment and control. There is a transition from monitoring the correctness of an unambiguous answer to monitoring the chronology of changes in a product that is the result of mutual creativity.

As a result, the compliance of the result obtained with a certain norm (except for the case when the subject of research is a standard or normative document) is not assessed, the share of active participation of the individual in the group project and the readiness of the individual to reflect the results achieved are assessed. The result of the reflection and information technology tool is an electronic portfolio in the form of an author's site, blog, or forum [4]. Sometimes, due to the frequent change in technologies, the teacher is deprived of the opportunity to accurately evaluate them, and as a result, he cannot become an expert. Currently, students want to communicate with different regions of the world, exchange knowledge, and skills, and share creative and new ideas [5]. Here it is obvious that they face difficulties in choosing a course of study and programs that meet their needs. In such times, the effective use of digital educational resources helps a lot and makes a huge contribution not only to the choice of courses but also to their deep, comprehensive development.

In the first place, the field of modern education is working with the Internet, the ability to conduct projects and research through joint activities, and teaching the Internet environment. The Google team uses all participants in the educational process as information, joint work projects, communication and consulting tools, as well as means of self-expression. Google Docs is a service coverage in the form of an application (SaaS) show, it is a free package of web services, as well as an Internet service cloud storage file, a file sharing service developed by Google [6].

The documents created by the user are stored on a special Google server or can be copied to a file. This is one of the keys to the benefits of the program, access to the entered data is carried out from any computer connected to the Internet (access is also password protected). With Google Docs, teachers and students can work with disabled shared documents and projects, while teachers monitor and manage this work. Google Docs provides its online office, fully taking over the sharing of tools, spreadsheets, visual aids, PDFs and presentations to create text documents. The Google service website is a website builder with the ability to publish videos, videos, and documents.

According to the inventors, the purpose of the service is "to organize a common Internet space where users share information". The site of the Google service allows you to post various information, videos, Videos, Documents, etc. on the site and determines the parameter of penetration to the site. Google Video service, a video hosting service that hosts existing videos and a search engine [7]. This service allows safe posting and watching of videos, thanks to the cloud, many problems and losses can be avoided.

Teaching materials created taking into account the possibility of using digital educational resources, although primarily the responsibility of the teacher, is mandatory for students to know various aspects of this problem and act effectively. Therefore, we further propose the following directions for the effective use of digital educational resources by students:

- students should constantly improve their knowledge in the field of open educational resources and participate in their popularization. They should understand why these open educational resources are needed in the first place, know the guidelines for working with them, take into account the requirements of simple use, and use them at a professional level.

- encouraging students to publish publications on open educational resources; by publishing their materials, they get acquainted with the rules for using open educational resources, the procedure for copyright, and plagiarism.

- active participation in improving the quality of open educational resources based on social networks. Depending on their interests, students write their thoughts on issues such as which content materials are most effective and why. These actions contribute to the effective communication of students with the same interests and common thoughts in social networks.

- recognition of the progressive need for information technology in the process of higher education, as well as of crucial importance for students in need of special education. Students should participate in the selection of information technologies in their educational institutions that are accessible to all students and effective for education [8].

- encouraging students who have supported the creation of open educational resources. In particular, when developing individual training courses and curricula for students studying for master's and doctoral studies, it is necessary to take into account the direction of using open educational resources, if necessary, to support and encourage. It is obvious that as a result of the development and improvement of the education system, the content of the training is being updated. One of the main means determining the development of personality as a whole and its culture, in which human values accumulate, is the content of education. It can be analyzed from two points of view [9].

The first is academic subjects that reflect different fields of activity, and the second is those that are common to the entire field of activity and are considered from the point of view of the aspect, elements of any academic discipline - knowledge, business, skills, experience of creative activity. The updating of the content of the training was clearly manifested in the content of the normative documents of education – educational standards in the speciality, standard plans, curricula in disciplines, textbooks and educational and methodological complexes [10].

Therefore, the content of training should meet future teachers, creating conditions for its quality in education, general education and individual content of each subject. The problems of education in higher education institutions are becoming more and more urgent every day due to the requirements of global modernization and the information society, with more and more graduates every year. This led to the need to introduce into the educational process the disciplines “modern information technologies in an open educational space”, “theory and practice of distance learning” and the selection of the content of disciplines similar to information technology.

Experimental

Karaganda University named after E. A. Buketov and the Central Kazakhstan Academy were taken as a research platforms. Examinations of disciplines taking place according to the curricula of universities in the speciality “Foreign language: two foreign languages” were conducted.

As an experiment, disciplines similar in content were taken as “Digital technologies in foreign language education”, “Modern technologies in modern education”, “Theory and practice of distance learning”, “Computer technologies in science and education”, and “Open educational resources”.

Results and Discussion

Important for the defining stage of our research work was the analysis of the level of digital literacy to solve the problem of a specific situation of the formation of a quantitative teacher. In order to diagnose the level of formation of the quantitative profile at the initial stage of the experiment, we decided to use control and measuring materials consisting of 19 questions. According to the content of the diagnosis, the determination of the level of quantitative literacy of future teachers in the experimental group and the control group was carried out on the basis of the following system. Provides the necessary level of training with minimal costs for rapid adaptation to practical professional activity as a pedagogical change in the educational process in the experimental group. In the table below, we have compiled the structure and content of block-modular training in the technology of digital pedagogy application included in the subject course “Organization of distance learning in the higher education system”. For this purpose, the main lecture and practical part of the discipline were carried out in the order of the content plan “organization of distance learning in the higher education system”, and the technology developed by us was carried out in the lessons of independent student work (ISW) under the guidance of a teacher.

Table 1

The structure and content of block-modular training of the technology of using digital pedagogy implemented in the subject course “Organization of distance learning in the higher education system”

| № | Digital Pedagogy for English Teachers | ISW | ISWT |
|----|--|-----|------|
| 1 | What is Digital Pedagogy? | 1 | 6 |
| 2 | The Modern Practice of Pedagogical Approaches | 1 | 6 |
| 3 | Digital Lab: Case Study — Best Practices of Digital Pedagogy | 1 | 6 |
| 4 | Digital Skills | 1 | 6 |
| 5 | Digital Skills from Digital Pedagogy Perspective | 1 | 6 |
| 6 | Computational thinking | 2 | 9 |
| 7 | Digital Lab: Programming Language — Scratch | 2 | 8 |
| 8 | Teacher as Creator and Designer | 1 | 8 |
| 9 | Instructional Design | 1 | 8 |
| 10 | Flipped Learning Model | 1 | 8 |
| 11 | Balance in Virtual Learning | 1 | 6 |
| 12 | Digital storytelling | 1 | 6 |
| 13 | The Modern Practice of Pedagogical | 1 | 6 |

The issue of using the diversity of digital technologies in the process of training future foreign language teachers is important since digital technologies have become an integral part of the life of representatives of the modern digital generation.

Therefore, an important condition should be the scientific substantiation of the principles of digital pedagogy online collaborative learning, mobile learning, reverse learning, project-based learning in small groups, practice-oriented learning, gamification, digital storytelling, conscious, comprehensively organized, and systematic.

Indicators of the formation of a quantitative teacher relying on the TPACK-SAMR model of the formation of components of a cognitive-emotional (harmonious) type of behaviour allow us to determine the trajectory of their progressive development.

When this condition is met, a constructive idea of the assessment levels of future foreign language teachers is formed. Given the topic and type of lesson, we constantly used the mobile app. In particular, we have achieved positive results in conducting all lectures in order to improve the quality of the lesson, and student's interest in the subject.

Students always kept in touch with the teacher or with their classmates through a mobile program when doing seminar assignments at home. This prompted the students to discuss the assignment with each other, to work in a team, and to work creatively.

This elective course is organized on the basis of lectures, practical classes, virtual seminars and independent work of students. The current and thematic control by the teacher was evaluated based on the results of the students' performance of tasks given at each practical lesson, demonstration of a lesson fragment compiled on the basis of ready-made computer programs, and individually developed didactic material based on open educational resources.

The form of final control is an exam. In addition, the portfolios prepared by students for the elective course are taken into account at the interim control.

- Examination of pedagogical training programs and other general-purpose technical training programs used in the study of our elective discipline;

- An example of ready-made didactic and methodological materials from open educational resources: lesson plans, educational handouts, presentations, drawings, tests, riddles and songs, web quests and another set of materials depending on the type of subject;

- A set of didactic materials for teachers and students created in the Microsoft Word program;

- A set of didactic materials for teachers and students created in the Microsoft Excel program;

- Didactic and educational materials in printed form compiled in the Microsoft Publisher program (bulletin, booklets, announcements, postcards, etc.);

- The website of the future teacher created in the Microsoft Publisher program;

- Multimedia presentation of the future teacher created in the Power Point program;

- Didactic materials created according to the program Hot Potatoes, Quandary, My Test (for school-children);

- Didactic materials independently compiled by a student using open educational resources and online programs (tests, crosswords, blogs, web quests, etc);

- A collection of lesson plans developed with the help of information technology (Internet lesson, virtual seminar, Lesson using a text editor, lesson with presentation, etc.);

- Development of a scenario for extracurricular activities using digital technologies (school evenings, quizzes, round tables, etc.);

- Show how to organize a virtual lesson based on cloud technologies. Hardware and software: computer, iPhone, Android, web browser (Google Chrome, Internet Explorer or Mozilla Firefox), Internet access, gmail.ru, Google account. Skills in using an online office.

In the study, the introduction of digital technologies into the educational process was widely used not only on the basis of a single subject but also in the discipline "Theory and Practice of distance learning" included in the curriculum. Students of pedagogical education at the lessons of the courses "modern information technologies in an open educational space", "Theory and Practice of distance learning" (<https://drive.google.com> we used Google, a cloud resource at the link/).

In addition to providing disk space, it is a tool that allows you not to resort to other additional tools for creating, editing, converting, and storing documents.

During the lesson, documents on Google Drive were opened by students using the Google Documents application and a text editor was not required, just a browser and an Internet connection were enough.

During classes, students typed text, created a spreadsheet, and processed and saved a file in one of several formats (PDF, DOC, ODF) – all this without additional help from the outside. Using the cloud during the lesson allowed you to access the following:

1. Create a shared disk of open space, which allowed you to organize a new form of the lesson, having access only to teachers and students. Organization of online exchange of documents is necessary for conducting classes, frequent replenishment of educational and methodological funds, implementation of practical tasks of students and virtual feedback.

2. The organization of the creative task execution environment in the general context.

For instance, in this case, the practical topic “using the capabilities of the social network in teaching academic subjects” is related to the creative practical work of students. The purpose of the practical work: the study of academic subjects using a social network. Students can place their reports in a folder created by them in an open information environment, as a result of which each student can get acquainted with the report of their classmates, apply their idea to solving their assignment and offer their own version [5].

In the course of these works, students were offered various options, and funds for teaching real computer science, computer literacy and a foreign language were used in the social network. Students presented various forms of educational activity in the lesson (Control work, control over independent work, study of theoretical material, performance of practical tasks), posting various information. As a result, due to the social network, students' communication skills have matured, the result of students' work was the formation of their knowledge base, teaching a new methodology in the interpretation of a certain topic in educational practice.

Subsequently, the students who used cloud servers declared their achievements as follows: during the classes, various games as individual, group, collective, independent were organized; sources of visual information (pictures, audio - video files), including access to wonderful information materials in multimedia form (in the figure, manual recordings, video clips, sound recordings, etc.); we managed to work from the point of view of the studied objects and processes (including, if it is difficult to get acquainted in practice), to present an image of the studied objects with three different virtual capabilities and in close relationship; timely monitor and summarize the teacher's own work performed by students at any time, automatically establish feedback, transfer knowledge and skills honestly, openly assess the ability to give interactive assignments; in the order of presentation of students, video editing, public access, asking questions on various topics, analyzing them, made sure that he identified the best work and voted for her; the teacher was able to track the task he gave, find out at what level the speed of execution for an individual student, and the result was analyzed during the lesson; in ease of use for students, the ability to access from any computer, tablet, mobile phone; store the information collected inside in any volume; user-friendly interface, file sharing, they can be viewed at any time and on any device.

Another important point is the results of the analysis of the results of students' work: providing students with a creative task, the teacher acts as a moderator when explaining a new lesson. Take, for example, the most valuable thing: when performing creative work, it is impossible to bypass cloud technologies, as well as when processing tasks together, the progress of the task becomes more interesting and attractive; in the educational process, a cloud fund is a convenient tool for the comprehensive development of students; we believe that it is convenient for any teacher.

At the end of the course, the students came to the conclusion: “In the future, I will definitely work in my school practice using cloud technologies”.

At the ascertaining stage, the primary diagnosis of the level of digital literacy of future foreign language teachers was carried out. Further, the subjects of the experimental group underwent an experiment using this technology. After the formative stage, an evaluation test was conducted again, the purpose of which was to determine the effectiveness of this technology in forming a quantitative profile of future foreign language teachers. Comparative analysis by measurement level is indicated in Table 2.

Table 2

Comparative analysis by measurement level.

| | | | Index_before_part | | | Index_after_part | | |
|-------------------|----|--------|--------------------------|---|-------------------------|-----------------------|-------------------------------|-------------------------|
| | | | Informative-reproductive | Active with elements of creative activity | Creative-transformative | Adaptive-reproductive | Active with creative elements | Creative-transformative |
| Experiment groups | CG | number | 12 | 16 | 1 | 12 | 16 | 1 |
| | EG | number | 5 | 25 | 1 | 1 | 20 | 10 |

In the table above, based on the comparative indicator of the assessment of the obtained quantitative literacy level index obtained after the experiment, 25 active subjects with creative elements in the experimental group received a level of 80.65 % after the experiment, and 9 subjects passed to the level of the creative modifier. The test results obtained after the formative stage were compared with the results of the primary diagnosis in the experimental and control groups demonstrated in Figure.

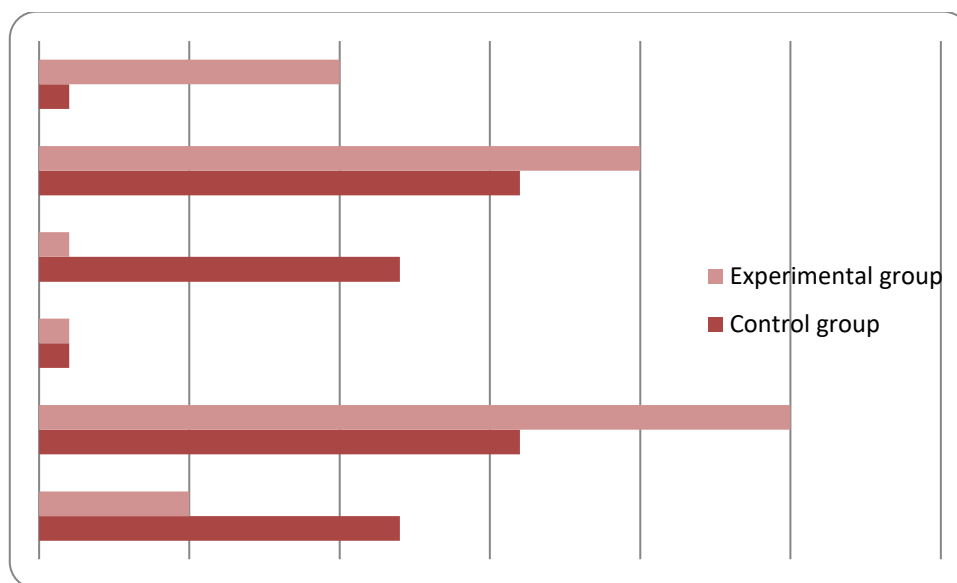


Figure. Results of the experiment

It was found that in the control group, despite the planned study of the discipline “Organization of distance learning in the school education system”, their digital literacy in accordance with the criteria-level characteristics set by the US remained unchanged.

We call the effectiveness of the technology we have carried out an axiological pedestal with an affective structure, a professionally-oriented action pedestal based on creativity and the guidance of learning in a small collaborative group and the fulfillment of special pedagogical conditions.

Overall, according to the results of the study, it follows that the prospects of digital technology in the educational process of a university are very great, and specialists of distance learning, undergraduates, doctoral students and students can resort to the help of this network in carrying out scientific research and Applied Analysis.

In this case, it is obvious that modern education for students, aimed at creating the same information environment will greatly contribute to improving the efficiency of the University's activities, increasing access and assimilation of knowledge, and their competitiveness in the labor market. These points prove that

the concepts of “modern information technologies in the open educational space”, and “Theory and practice of distance learning” are mutually compatible and correspond to the main content of the disciplines.

Conclusions

The use of digital technologies by students in higher educational institutions depends on the goals of teaching these disciplines, the content of the courses “Modern information technologies in the open educational space”, “Theory and practice of Distance Learning” has been determined.

Therefore, we have theoretically defined the content basis for the use of digital technologies by students in the open educational space. In this context, although the content of elective courses does not cover all the possibilities of using information technologies in the process of forming students’ professional skills, the most basic and current today is the idea of using modern information technologies (smart technologies, mobile, cloud technologies).

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С.Т. Абдрахманова, Ф.Б. Саржанова, Н.Б.Серикбаева

Болашақ шет тілі мұғалімдерін даярлау процесінде сандық технологияларды қолдану

Мақалада болашақ шетел тілі мұғалімдерін даярлауда сандық педагогиканы қолдану технологиясының тиімділігін тексеру бойынша тәжірибелік эксперименттік жұмыс жүргізу мазмұны мен оның қорытынды нәтижелері зерттелген. Авторлар жоғары оқу орындарында сандық технологияларды пайдаланудың өзектілігін анықтау мақсатында эксперимент жүргізген. Диагностика мазмұнына сәйкес эксперименттік және бақылау топтарындағы болашақ мұғалімдердің сандық сауаттылық деңгейін анықтау жүйе негізінде жүргізілген. Тәжірибелік эксперименттік жұмыс барысында болашақ шетел тілі мұғалімдерінің сандық сауаттылығының қалыптасуының бастапқы диагностикасы зерттелді. Зерттеу барысында «Шетел тілі: екі шетел тілі» мамандығы бойынша білім алатын студенттер арасында сауалнама жүргізілген, педагогикалық эксперименттің екі кезеңінің нәтижелеріне салыстырмалы талдау жүргізіліп, эксперименттің қорытындысы анықталды.

Кілт сөздер: сандық технологиялар, ағылшын тілі мұғалімдері, шетел тілі, ашық білім беру ресурстары, мультимедиа, интернет технологиялар, жоғары білім, студенттер.

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Использование цифровых технологий в процессе подготовки будущих учителей иностранного языка

В статье исследовано содержание проведения опытно-экспериментальной работы по проверке эффективности технологии применения цифровой педагогики в подготовке будущих учителей иностранного языка и ее итоговые результаты. Авторы провели эксперимент с целью определения актуальности использования цифровых технологий в вузах. По содержанию проведенной диагностики определение уровня количественной грамотности будущих учителей в экспериментальной и контрольной группах проводилось на основе системы. В ходе экспериментальной работы была изучена первичная диагностика формирования цифровой грамотности будущих учителей иностранного языка. Проведен опрос студентов, обучающихся по специальности «Иностранный язык: два иностранных языка», и сравнительно изучены результаты двух этапов педагогического эксперимента.

Ключевые слова: цифровые технологии, учителя английского языка, иностранный язык, открытые образовательные ресурсы, мультимедиа, Интернет-технологии, высшее образование, студенты.

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