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DIGITAL EDUCATION DURING PANDEMIC AND SITUATION IN KAZAKHSTAN: CURRENT STATE AND FORECASTS

The Internet has changed all areas of human activity and education is no exception. A new term "digital education" has appeared with the development of Internet technologies in education. This article describes the main benefits of digital education associated with the Covid-19 pandemic, when people were forced to adjust their lives to the current situation in the shortest possible time.

The Covid-19 pandemic has disrupted the functioning of higher education around the world, including in Kazakhstan. The forced transformation of the educational process has become a big test for Kazakhstani universities both in terms of changing the entire format of education, and in terms of material support. At the same time, the activities of universities received a powerful incentive to reform the entire education system, when the digitalization of the educational process came to the fore. The article provides an overview of the platforms that have been developed during the described period (Zoom, Microsoft Teams, Google Classroom, Kundelik, etc.). Particular attention is paid to the analysis of the "univer.kaznu.kz" platform, which is a large-scale platform successfully tested by teachers, students and employees of al-Farabi KazNU before 2020 and developed during the quarantine period.

Keywords: virtual classrooms, online etiquette, digital transformation of education, distance learning, pandemic, quarantine, school online format, university online format.

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Пандемия жағдайындағы цифрлық білім алу және Қазақстандағы жағдай: ағымдағы жай-күйі мен болжамдар

Интернет адамзат қызметінің барлық салаларын өзгертті және білім беру саласы да өзгерістерге ұшырады. Оқытуда интернет-технологиялардың дамуымен бірге «цифрлық білім беру» жаңа термині де пайда болды. Бұл мақалада Covid-19 пандемиясы кезіндегі цифрлық білім берудің негізгі артықшылықтары сипатталған. Пандемия кезінде адамдар қысқа мерзімде өмірлерін қазіргі жағдайға бейімдеуге мәжбүр болды.

Covid-19 пандемиясы бүкіл әлемде, оның ішінде Қазақстанда да жоғары білім беру мекемелерінің жұмысын тоқтатты. Оқу процесінің мәжбүрлі трансформациясы қазақстандық жоғары оқу орындары үшін оқытудың барлық форматын өзгертуде де, материалдық қамтамасыз ету тұрғысынан да үлкен сынақ болды. Сонымен қатар, университеттердің қызметі білім беру процесін цифрландыру алдыңғы қатарға шыққан кезде бүкіл оқыту жүйесін реформалауға қуатты ынталандыру алды. Мақалада сипатталған кезеңде дамыған платформаларға шолу жасалады (Zoom, Microsoft Teams, Google Classroom, Kundelik және т.б.). 2010 жылдан бері әл-Фараби атындағы ҚазҰУ-дың оқытушылары, студенттері мен қызметкерлерінің жұмысы үшін ауқымды алаң болып табылатын «univer.kaznu.kz» платформасын талдауға ерекше назар аударылды.

Түйін сөздер: виртуалды сыныптар, онлайн-этикет, білім берудегі цифрлық трансформация, қашықтықтан оқыту, пандемия, карантин, мектептің онлайн форматы, университеттің онлайн форматы.

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Цифровое образование в условиях пандемии и ситуация в Казахстане: текущее состояние и прогнозы

Интернет изменил все сферы деятельности человечества и сфера образования не стала исключением. С развитием интернет-технологий в обучении появился и новый термин «цифровое образование». В данной статье описываются основные преимущества цифрового образования, связанные с пандемией Covid-19, когда люди были вынуждены в кратчайший период подстроить свою жизнь под сложившуюся ситуацию.-

Пандемия Covid-19 привела к сбою функционирование высшего образования во всем мире, в том числе и в Казахстане. Вынужденная трансформация учебного процесса стала большим испытанием для казахстанских вузов как в изменении всего формата обучения, так и в плане материального обеспечения. В то же время деятельность университетов получила мощный стимул к реформированию всей системы обучения, когда на первый план вышла цифровизация образовательного процесса. В статье представлен обзор платформ, получивших свое развитие в описываемый период (Zoom, Microsoft Teams, Google Classroom, Kundelik и др.). Особое внимание уделено анализу платформы «univer.kaznu.kz», которая является масштабной площадкой, успешной апробированной преподавателями, студентами и сотрудниками КазНУ им. аль-Фараби еще до 2020 г. и получившая свое развитие в период карантина.

Ключевые слова: виртуальные классы, онлайн-этикет, цифровая трансформация образования, дистанционное обучение, пандемия, карантин, онлайн формат школы, онлайн формат университета.

Introduction

The Internet has transformed many facets of knowledge production and distribution from journalism to the music industry. Education is also in the early stages of a fundamental reconfiguration. Traditionally, most education has been spatially fixed and geographically limited. People have gone to schools in buildings in fixed location, students travel to a specific geographic location, they normally have to live within relatively close proximity to their schools or they have to live within the school itself. In this traditional approach, the number of students is limited by the number of people who can fit into the buildings and by the number of individual schoolrooms within the buildings. Space puts an upper limit on the number of students any single teacher can teach. Education under these conditions lacks economies of scale. These features make traditional education a bit like a schedule for television networks, with different channels of information packaged into programs that follow one after another in time.

The digitally networked environment frees education from its traditional spatial and temporal limitations. However, new constraints and limitations emerge that were always present in the traditional model but now become especially salient. A traditional model of education is a broadcast model where an expert teacher provides instruction to a group of students. The mode of communication is one-to-many. The digital networks offer alternatives to this model of one-to-many education; at the same time they extend and amplify it. Using digital networks means that geography no longer places an upper limit on the number of students that a teacher can reach. Students and teachers do not have to be in the same location for to communicate with the students. Teachers can speak to an indefinite number of students. Conversely, an indefinite number of students can take the same class. Secondly, educational institutions do not need to invest in buildings to house additional classes, or offices in which teachers work and plan lessons. Potentially, this lowers cost because few teachers can do the work that previously required many teachers. Moreover, educational institutions do not need to ration space and time as they do in traditional school buildings. Thirdly, educators do not need to schedule classes like programs on a television network. Students can play videos or access websites twenty-four hours a day. Yet freeing education from traditional limitations of time and space makes other constraints and limitations on education increasingly important and salient. Students can view online materials and videos when their schedule permits but they will enjoy relatively limited direct connection with and feedback from their teachers. The super broadcast model makes individual interaction between student and educator increasingly difficult, if not impossible.

Some forms of learning, but not all, may be well suited to such a model.

New Limitations. Although digital networks seem to remove limitations on access to education, new limitations emerge in the digital age, while other limitations, which already existed become increasingly salient. The first limitation is Internet access, a special case of the problem of the digital divide. Limited Internet access affects both the number of people who can gain access to digital education and the media that can be used. A second limitation is language. Language replaces geography as a major barrier to educational access. Schools can reach students all over the world as long as these students understand the language in which instruction is offered. Online enterprises will have to offer versions in different languages to expand their reach in global markets, to lower costs, many enterprises will decide to focus on the most widely spoken languages, such as English, Chinese, Arabic, or Spanish. This may reinforce the dominance of these languages over time. Digital education might also strengthen a single national language at the expense of minority languages. A third important limitation is control over architectures and standards. Especially when it involves multimedia, online education requires technological standards and platforms for producing and displaying content and facilitating communication and interaction among students and instructors. A fourth limitation, already mentioned, is scalability. As we have seen, only some aspects of education are successfully scalable online; other elements are likely to be labor-intensive and costly.

Education during pandemic. The COVID-19 is a highly infectious disease or illness caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), originated in Wuhan city of China, has already taken on pandemic proportions, affecting across all the continents (Remuzzi, 2020), mostly spread among individuals during close contact now resulting in millions of death. COVID-19 is referred as pandemic due to its severity and fierceness also as the greatest global health crisis since after centuries in human civilization. The onset of the novel coronavirus made everything from world economies to social rituals (Schulten, 2020) devastated. Lockdown is a state of the emergency protocol implemented by the competent authorities (in this case it is central and state governments) to restrict people from leaving their place of living resulting in mass quarantines and stay-at-home across the world since March 2020.

Literature review

As the COVID-19 pandemic spreads, there has been an increasing move towards teaching online because of shutting down of schools, colleges and universities for an indefinite time as the only option left (Martinez, 2020). Therefore, this is the time to gravely rethink, re- vamp and redesign our education system in much demanding need of unprecedented current situation. Informal and non-formal education is also tremendously affected. However, it is a well-established assumption that no pedagogical approach can replace the peak position of formal education due to having teacher-taught direct interaction. But, the after- math of COVID-19 crisis, online education became a pedagogical shift from traditional method to the modern approach of teaching-learning from classroom to Zoom, from personal to virtual and from seminars to webinars. Previously, e-learning, distance education and correspondence courses were popularly considered as the part of non-formal education, but as of now, it seems that it would gradually replace the formal education system if the circumstances enduringly persist over the time. Some of the most popular online communication platforms that would change the destination and direction of the whole education system across the world in post-COVID-19 circumstances are Start.me, Neo, Classtime, Classwize, Ted-Ed, Coursera, Google Classroom, Bak- pax, Pronto, Skillshare, ClassDojo, Edmodo, Blackboard Learn, Parlay, Docebo, Feedback Fruits, Udemy, WeVideo, WizIQ, Flipgrid, Codeacademy, Gynzy, Adobe Captivate, Seesaw, Edx, GoGuardian, Elucidat, Kami, Pluralsight, G Suite, Otus, Articulate 360, Floop, Future Learn, Hapara, Shift, Lectora Inspire, Kialo Edu, Buncee, LanSchool and many more. De-schooling society (Illich, 1971) seems relevant as the current scenario tries to keep our children away from the traditional formal education system and provide an opportunity to flourish on their curiosity. Lederman (2020) justly stated that due to the COVID-19 crisis teachers and students both find themselves in the situation where they felt compelled to embrace the digital academic experience as the summum bonum of the online teaching-learning process. Through digital intelligence (DQ Institute, 2019) teachers can cater children's digital skills which are on the brink of cyber risk into the educational opportunities to get success in future ventures especially in this pandemic where children are wholly dependent on online learning. The coronavirus is upending life

(EdSource, 2020) that caused an enduring threat to our educational institutions from kindergarten to tertiary level and day by day exacerbated the teaching-learning. Apart from the philanthropic efforts, some people hoped to parlay their enterprising skills into profit-making opportunities. For any innovative changes, external and internal, both forces are held responsible as Lewin (1958) discussed the three-step process (un- freezing →changing →refreezing) in his change management theory, which delineates the inherent process of any change. Unfreezing of traditional teaching-learning occurred during unforeseen circumstances out of COVID-19, which brought to the shift into online teaching because of anticipated uncertainties in pursuing the traditional mode. As of to- day's scene, it is quite impossible to take classes in regular mode amid the COVID-19 outbreak in which to maintain the social distancing is of paramount importance; hence undoubtedly online teaching mode became a necessity that brought an organization and individual both in a unfreeze phase. Unfreezing step provided an opportunity for motivation and readiness among system and stakeholders (Siegal et al., 1996). Besides, online teaching mode is providing the feeling of psychological safety to learning community in COVID-19 afflicting period. The second step is about changing process under which two options are left either to adopt a new online mode in practice in other institutions else- where or to innovate one's own. The research is always for a better implementable model. Here, notably, change is not an event but a dynamic process as a break in continuity. For any result-oriented change, we need to have a time suited outlook and a new mindset (Bridges, 1991) for online teaching mode at an individual and organizational level to supplement the transition phase. Tam and El-Azar (2020) advocated that "resilience must be built into our educational systems" and also indicated three trends that would be seen in future transformations viz. increasing educational innovations, emboldened public-private educational partnership and digital divide gap. After four months of online experiences, a paradigm shift has occurred with online teaching, gaining prominence to have \near permanence even after COVID-19 pandemic leading to refreezing. Refreezing step is inevitable for integrating technology in our teaching-learning process that enables us to teach students with the methods in which they would not only feel comfortable but also, they can match the demands of technology in 21st century.

Materials and methods

As the main methods of the research paper we highlight general scientific methods (observation, introspection) and methods and techniques of sociolinguistics (interview, survey, and interpretation). At this stage, we have reviewed the University`s Corporate Information System "univer system" (www.univer.kaznu.kz).

Situation in Kazakhstan. Like the whole world, Kazakhstan also faced the problem of the transition of education to online format because of the global quarantine. Naturally, many did not expect this pandemic and were not immediately ready for a new training format. However, all steps were taken to ensure that the educational system of Kazakhstan as smoothly as possible switched to online learning. Kazakhstani schools were the first who faced the transition to the new training regime. The coronavirus quarantine has literally put all families in the world in home isolation, including Kazakhstan. Suddenly, millions of families found themselves in a situation where regular education in schools was stopped and distance education came to replace it. But education will no longer be the same as it was before. Here are some observations about what has gone wrong in our system, how other education systems around the world are responding to quarantine and what we can do to improve the situation. The new training format has exposed several significant problems in the domestic educational system. Firstly, unlike traditional education, Kazakhstan has no legislative standards for distance learning. This means that we still have to develop appropriate educational programs that should be focused on distance learning. Secondly, the transition to distance learning under quarantine showed that the ICT training of teachers is not on a high level, especially in rural schools. Thirdly, with all the development of the technological sector in Kazakhstan, the level of technical support for the educational system was insufficient. This includes the level and speed of Internet connection, availability of equipment and computers in educational institutions, etc. Fourthly, there is the lack of domestic platforms for large-scale educational activities and the lack of digital content for online classes. Naturally, it was urgent to create materials, form programs, develop assessment criteria for evaluating students, introduce new instructions for conducting lessons, conduct special courses for teachers, and take into account the psychology of the students themselves, who have been under quarantine at home all this time. After a thorough

analysis of world experience and recommendations from UNESCO and the World Bank, Kazakhstan switched to distance learning via the Internet, television and radio, as well as by sending educational materials to settlements where there are no schools. Today, time has shown that, taking into account all the outstanding problems, school education in Kazakhstan was able to successfully switch to distance education. About 2.5 million students get their education in the schools in our country, and almost all of them are connected to the Internet. Also, during the widespread quarantine, such Internet platforms as "Daryn.Online", "Kundelik" and "BilimLand" were developed. School students can find instructional video lessons that fit the state curriculum on these platforms. They complete the necessary tasks at the end of each lesson. Students can ask teachers directly if questions arise about lessons. In addition to these platforms, teachers use foreign streaming systems such as Microsoft Teams, Meet by Google Hangouts, etc. One more achievement of distance education during quarantine was the development of educational lessons through the television channels "Balapan" and "El Arna". These television lessons were also relayed through the "Qazaqstan" channel, which allowed those school students who did not have time to watch TV lessons on time to watch them at a later time.

*The Situation in Universities***.** Like many businesses, universities were racking their brains over how to reopen, choosing different strategies for action. For instance, the Cambridge University conducted lectures online until at least the summer of 2021. Other universities, including Stanford, offered a mix of online and in-person classes, while the academic year has been extended to keep as few students on campus as possible at any given time. We have seen Covid-19 as a powerful economic blow to higher education from these samples. Dorm rooms were vacant; sports stadiums were empty, students were unhappy with the requirement to pay full tuition fees. "Teachers across the globe were largely unprepared to support continuity of learning and adapt to new teaching methodologies.

Results and discussion

If the situation in Kazakhstan schools required immediate actions, first of all, due to the fact that school students (especially schoolchildren of lower grades) are very sensitive to gaining knowledge and to any changes in the field of education, whereas students and teachers of colleges and universities reacted to large-scale quarantine with more psychological readiness. The easier transition of universities to distance learning was partly due to the fact that many universities have been practicing distance education for many years. However, there were also many problems with the transition of universities to online education. "A rise in contract cheating and academic file-sharing, and exam cheating were identified as particularly problematic". Many universities also have academic mobility programs for foreign students or those students who cannot directly attend the university classes for any reason. Therefore, from a technical point of view, the colleges and universities in Kazakhstan were more prepared for quarantine.

For example, Al-Farabi Kazakh National University has different platforms and the most important of them is **univer.kaznu.kz** – Corporate Information System for University Management. The "univer system" is a large arena for the work of students, teachers and staff. The site is presented in three languages (Kazakh, Russian, English) (picture 1) and the main page opens in the state language Kazakh, then you can choose the language that is convenient for you. Lesson scheduling, grading, online exams, downloading learning materials, term papers are just a few of the operations that can be done on this platform.

In addition, there are a number of electronic services for users of the system:

- Acceptance campaign, Personnel management, Management of access to corporate resources;

- News, Announcements, Regulatory Documents, FAQs, Recommended Links, Phone Book, Messaging, Profile Management, Mobile Application, Academic Debt, Financial Debt, Parental Access of e-Document Management;

- Orders and instructions on the movement of students, Orders for a scholarship, Sheets, Transcripts, References, Individual curricula, Diplomas and applications, etc. to support the educational process;

- Catalog of disciplines, Curricula, Academic calendars of the organization of the educational process;

- Management of teaching materials, Registration for disciplines, Journal of attendance and progress, Distance learning, Certification, Practice, Testing, Generation of exam tickets, Additional training.

System administration services:

- Reference information management, Role policy, History of user actions, Data archiving, System configuration;

- Services of the social and educational process:

- Accompanying the student by the Curator-Ad-

visor, Accounting for events, clubs and public associations, Management of the social characteristics of the student.

- Services for monitoring, control and analysis of the educational process:

- Indicative plan, Rating of teachers, Rating of students, Questioning of users, Statistical reports, Analytical reports, Advanced search, Anti-plagiarism, Approval of documents, Control of violations.

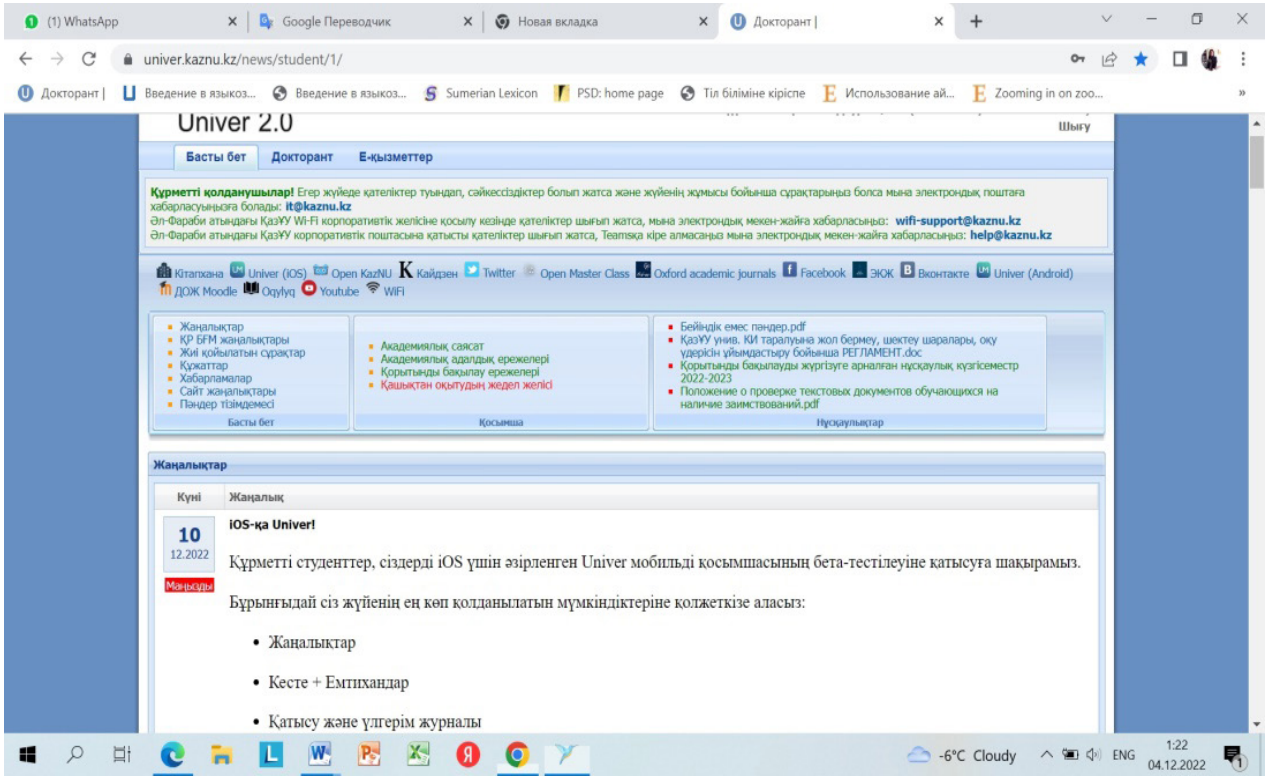
Electronic application services:

- Application for Deduction, Application for Transfer, Application for Academic Leave, Application for Business Trip;

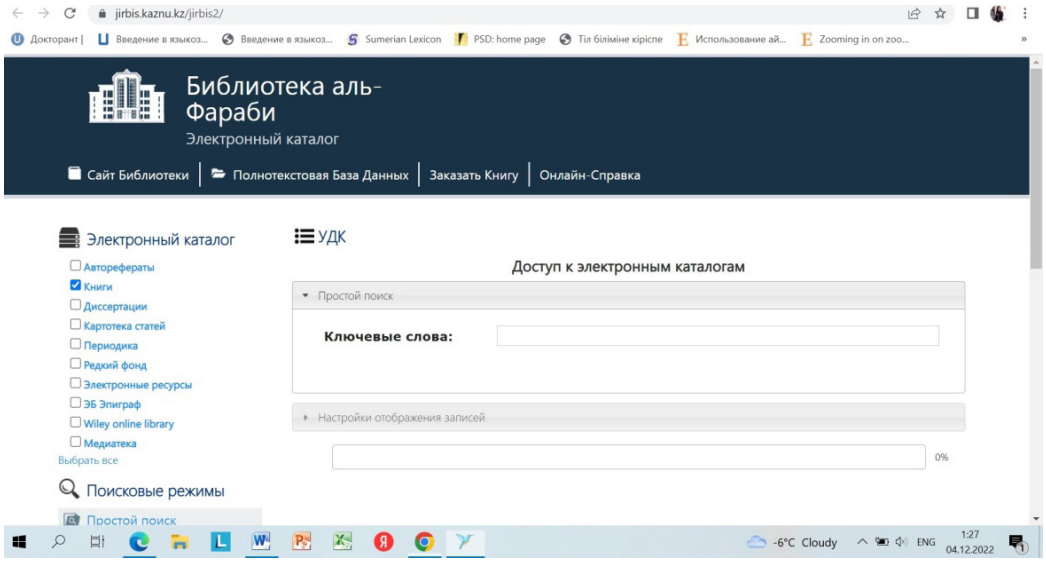
Integration services:

- Personnel management, Downloading data on payment, scholarships from the 1C-Accounting System, Integration of e-services with the "Directum" electronic document management system, Uploading data to the access control system, Uploading data on the educational process to corporate information resources, Providing a single entry into the Corporate information system;

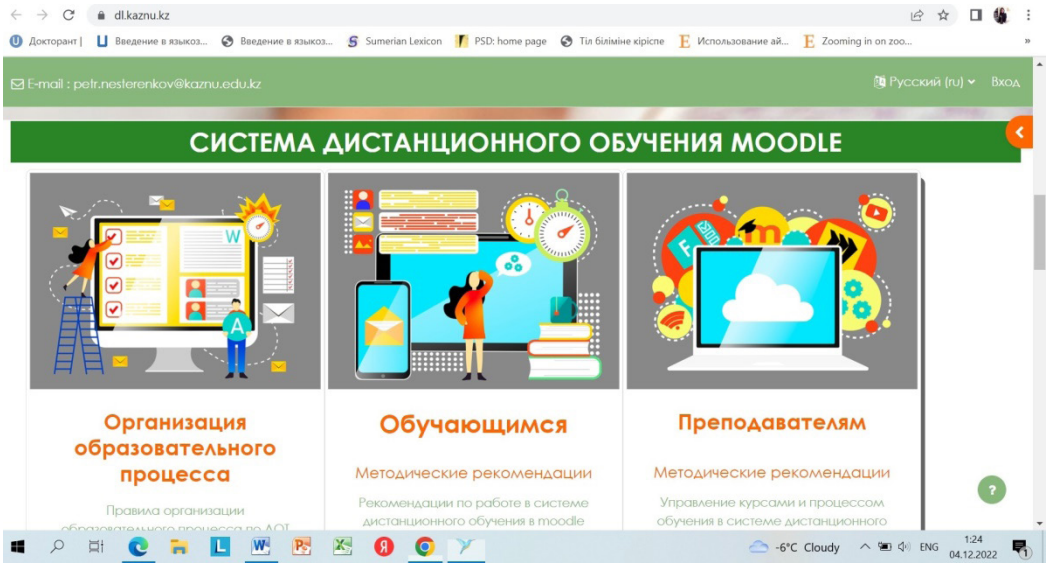
Also, being in the same place in the system, you can shift from one website to another, that is, links to other sites are given, and there are 13 of them: a library (picture 2), links to the site's mobile application (for iOS and Android), open KazNU (an online course site from leading university teachers), KazNU portal, university twitter, OPEN MASTER CLASS (these are exciting and accessible online courses of famous people in Kazakhstan), oxford academic journals, facebook, vkontakte, "moodle distance education system", youtube, wifi, "okulyk" distance learning system. "Moodle" (picture 3) and "okulyk" systems are also separate platforms where distance learning is carried out for KazNU students.



Picture 1 – the main page of the "univer system KazNU"



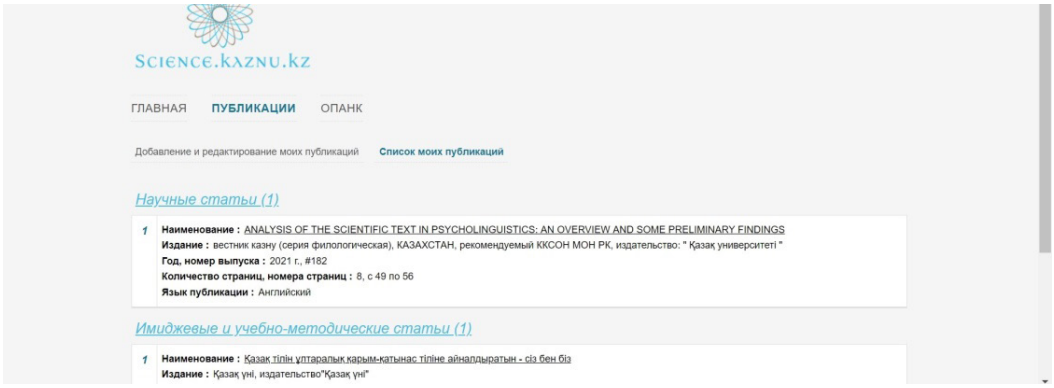
Picture 2 – the website of the Library KazNU



Picture 3 – the Moodle (distance learning system)

The university also has an information system “science.kaznu.kz”. The information system “Science.kaznu.kz” is designed to automate the management, accounting, analysis and monitoring of data related to the research activities of the university, including data on personal publications of university employees (articles, monographs, manuals, theses, etc.). The users of the system are university teaching staff, Department of Science and Innovation. The system supports such web browsers for work as Google Chrome, Mozzila Firefox. All scientific articles, monographs, abstracts, image articles, scientific books, textbooks are loaded and displayed in this system.

In general, the entire digital platform of the university is very well developed. It is very convenient for use by students, teachers and staff.



Picture 4 – the information system "science.kaznu.kz"

According to the famous Brazilian educator-innovator P. Freire, it is necessary to replace the traditional "cumulative education" with "problem-oriented", when students are engaged in real life problems. This moment is very important in the conditions of modern education in conditions of quarantine. He believes that learning will be much more successful if students formulate problems, including economic, social, and political ones based on their own experience and then solve them, using all the opportunities that the school provides them. P. Freire is sure that a properly organized education can free students from the suppression of the personality, therefore his educational concept is called "liberation pedagogy". The pandemic has been a great leveler in a way, giving all stakeholders (educators, learners, policy-makers and society at large) in developed and developing countries a better understanding of our current education systems "vulnerabilities and shortcomings". Covid-19 showed that we faced several educational challenges. In the system of education priorities, there are two series of incomparable concepts, goals, value orientations: on the one hand, a humanistic one, on the other, a technological orientation of education. Which of them is dominant is a question that does not receive a sufficiently clear and full-fledged answer in modern literature on the philosophy of education. Some authors believe that the most important goal of education is the acquisition of knowledge and skills by students, including the ability to think critically and creatively approach the knowledge gained. R. Nurtazina emphasizes: "The concept of "education" includes not only knowledge, skills and abilities as a result of training, but also the ability to think critically and be an active participant in the modern information field". Other researchers believe that the priority in education should be its humanization, rather than rationalization and technologies. In our opinion, the latter should develop only following the development of humanistic principles in the educational process.

Conclusion

The process of reforming the education system of the Republic of Kazakhstan has now identified fundamentally new requirements for the quality of education which affect all participants in the educational process at all levels. The current serious contradiction between the need for informational assistance to teachers and the lack of access to information for participants in the educational process predetermined the need to create a satellite channel for distance learning as one of the elements of the program for computerization of the education system as a whole. "The COVID-19 pandemic has created the largest disruption of education systems in history, affecting nearly 1.6 billion learners in more than 190 countries and all continents. Closures of schools and other learning spaces have impacted 94 per cent of the world`s student population, up to 99 per cent in low and lower-middle income countries". Thus, the global pandemic has already left its indelible mark on the history of all mankind. This pandemic will remain in the memory of more than one generation.

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