Original Article

e-learning and digital media

Distance learning technologies and their legal regulation in the Republic of Kazakhstan

E-Learning and Digital Media
2024, Vol. 0(0) 1–15

DOI: 10.1177/20427530241231842
journals.sagepub.com/home/ldm
Sage

Nurlan Apakhayev and Indira Mussabekova
Department of Legal Disciplines, Kainar Academy, Almaty, Republic of Kazakhstan

Dina Bugybay
Department of Law, Caspian University of Technologies and Engineering Named After Sh. Yessenov, Aktau, Republic of Kazakhstan

Kaldarbek Kuandykov
Department of Customs, Financial and Environmental Law, Al-Farabi Kazakh National University, Almaty, Republic of Kazakhstan

Kuanysh Koishybaiuly
Department of Legal Disciplines, Kainar Academy, Almaty, Republic of Kazakhstan

Abstract

This study addresses the pressing relevance of implementing distance learning technology in the Republic of Kazakhstan across various educational levels, guided by the framework of legal regulation. The study aims to investigate the benefits of using diverse distance learning technologies in modern education, improving access, motivation, and flexibility while fostering environmental awareness and societal prosperity. The chosen methodology is based on the diagnostic testing method to assess and analyze the educational needs and preferences of students. The study involved 100 participants, ranging in age from 19 to 26, from the Abai Kazakh National Pedagogical University. The study shows important signs and criteria for incorporating distance learning into legal rules in a way that works. These include factors related to the environment, motivation, cognition, analysis, and culture. This transformation of education aligns with real-life situations, adapting to changing circumstances and allowing students to select distance learning when necessary. The implementation of modern technology in distance education facilitates profound knowledge acquisition while accommodating evolving personal circumstances, ultimately fostering a conducive environment for continued high-quality education at cognitive and social levels.

Corresponding author:
Nurlan Apakhayev, Department of Legal Disciplines, Kainar Academy, 7a Satpayev Str., Almaty 050013, Republic of Kazakhstan.
Email: apakhayevnurlan0@gmail.com

Keywords
Continuity of the educational process, knowledge, organization of training, pedagogy, personality-oriented approach

Introduction

The present stage of society's development actively invites the use of innovative technical achievements. They ensure the expansion of the means of pedagogical application in the field of education (Arias et al., 2018). They make available many forms of expanding knowledge at the level of a full-fledged educational process within the framework of using various pedagogical tools in the field of technological developments (Lee et al., 2019). The main tasks facing the field of pedagogy at the level of legal solutions can be gradually implemented at an accessible level with a distance learning system (Frazer et al., 2017; Gürer et al., 2016). With a competent component of knowledge presentation, the main prerequisites of a communicative, cognitive, targeted, and evaluative nature can be reflected, which, at the level of developing theoretical and practical skills, will allow students to master the necessary cognitive and informational training (Bolliger and Halupa, 2018). The remote option is becoming increasingly popular due to its priority components. Being introduced into the educational process at the level of generally accepted and legally existing full-time and part-time forms, distance learning can be recognized at the level of one of the main forms of learning (Affouneh and Raba, 2018).

According to Li et al. (2023), the term "distance learning technology" refers to the use of electronic or digital learning tools, including the Internet, email, television, and other audiovisual communication media, to deliver learning when the instructor and students are in different physical locations. It is a planned learning process that employs distance learning technology to reach students sitting in different parts of the world. The research by Abuhassna et al. (2020) aimed to investigate the factors influencing students' academic achievements and satisfaction with using online learning platforms, based on Transactional Distance Theory (TDT) and Bloom's Taxonomy Theory (BTT). The findings showed that students' background, experience, collaborations, interactions, and autonomy positively affected satisfaction, while the students' application, remembering, understanding, analyzing, and satisfaction positively influenced academic achievements. The authors recommended that administrators focus on course structure design, instructor training, and student familiarization to enhance the effectiveness of online learning platforms.

In turn, Deacon et al. (2022) studied the organizational factors of infusing educational technologies in universities. The identified organizational factors are structured into three main categories: (1) leadership and strategy; (2) infrastructure and resources; and (3) recognition and motivation. The review aimed to further the scholarly understanding of the organizational layer involved in digital change as well as provide concrete recommendations for practitioners. Educational institutions are advised to enable and support bottom-up and opinion leadership, priorities investing in providing a stable infrastructure and further resources such as funding and technical support, and rework institutional promotion structures to promote a successful implementation of educational technologies that can be supported and strengthened by high educational institutions (HEIs) to keep satisfaction and involvement high.

Bekmanova et al. (2021) aim to enhance personalized learning in higher education through a flexible model for blended and distance learning. This model involves creating an individualized learning path based on pre-training assessments, comprising mandatory and optional modules. The

personalized training model utilizes promising data science methods such as ontological modeling and production rules, along with statistical evaluation, to significantly enhance the learning model in higher education. A study by Seilkhan et al. (2022) was conducted to research the effect of the pandemic on the Kazakhstani educational process. The main issues identified were the organization of laboratory classes and examinations and the dependence of students on the virtual world. At the same time, Bokayev et al. (2021a, 2021b) examine the experience of Kazakhstan in implementing distance/online learning during the COVID-19 pandemic. The study finds that the government of Kazakhstan has faced significant issues in the transition to distance/online learning due to weak internet infrastructure and a lack of effective interaction with all stakeholders, as well as biased statistical and analytical information.

Rakhmetov et al. (2022) studied the educational platforms in Kazakhstan during the COVID-19 pandemic. The most popular platform used for distance education was Zoom, with some universities developing their own platforms or using well-known platforms like Zoom, Microsoft Teams, and Webex Cisco. The universities have provided adequate support in organizing training courses for teachers and other staff, as well as for students. The majority of universities have retained the salaries of their employees, and the cost of education has not changed significantly for most students.

The purpose of this study is to investigate the potential benefits and impacts of implementing multilevel and diverse distance learning technologies in modern education. The study aims to examine how these technologies can enhance the educational process, improve access to education for students from remote regions, and increase the motivation and success of learners across different age groups. The current literature lacks a comprehensive assessment of how diverse distance learning technologies can enhance the educational process, particularly in remote regions. Existing studies tend to focus on specific factors, such as student satisfaction or organizational aspects. The authors' study addresses the gap in research by emphasizing the holistic impact of distance learning technologies on motivation, continuous training, and educational access in underserved areas. This offers a novel perspective that has not been widely explored in prior research.

Literature Review

The results of diagnostic testing, detailed semantic clarification, and pedagogical observation allowed for the identification of aspects reflecting the indicators of the personal component in the successful achievement of the target definition according to various external circumstances. Such circumstances have multifaceted causal effects, both positive and negative, but in the aggregate of their functional parts, they create obstacles to achieving personal aspirations and goals (Hurlbut, 2018). Education is one of the main processes in the category under study. Its manifestations at all levels and all age categories proceed from the tasks set within its framework, considering this necessary at the level of the general situation in the field of education, to improve the system (Nestuly and Shara, 2023). The system includes parts that protect health and the environment at a good level of understanding, along with the internal development of these prerequisites. This would be the basis of the educational process, taking into account how long it lasts and how often it happens (Narayan and Singh, 2020).

Within Kazakhstan's legislative framework, distance learning has all the prerequisites for assuming a function that will ensure the efficiency of educational activities in non-standard situations when many issues that create obstacles arise, both at the personal level and at the level of the organization, as well as social, economic, and territorial ones, considering internal and external factors. This is necessary to create conditions for continuing or primary education, or retraining, and

to improve one's professional knowledge and skills at the level of applying a diverse range of forms and methods within the framework of distance education. In this way, the global problem that education faces at the research-to-practice level can be solved by putting in place high-quality, high-tech learning that includes current, new information in an easy-to-understand way. Information can be submitted simultaneously to different educational institutions to ensure timely access to familiarization with the information, which would create conditions for the possible training of all necessary categories of citizens (Almaiah et al., 2020).

At this stage of the introduction of distance education, leading universities will be able to afford to recruit some students – talented, gifted individuals who, for many reasons, cannot stay for a long time in the necessary territorial location corresponding to the location of the university. Such students can be accepted initially for a distance learning format, which highly qualified university teachers will be able to conduct at a high level. The considered trend will allow increasing the staff by solving certain issues with the employment of citizens, who, if necessary, can independently or within the framework of the development of pedagogical teams travel within the framework of business trips to the areas of residence of students who will be on distance learning so as to implement the necessary pedagogical aspects that require their personal presence (Sibirskaya et al., 2019).

In this area of studying and determining distance learning opportunities, many related issues that are of great importance for the younger generation will also be explored. They will be solved within the framework of the application of the distance education reserves under study. This will support a large motivational component of the manifestation at the level of personal social activity of the younger generation, schoolchildren, who will become aware of their capability of finding application for their talents, interests, aspirations, and hobbies at the level of their manifestation in future professional activities (Trakru and Kumar Jha, 2019).

This will ensure the population and admission to various universities at the level of remote location, considering the possibility of remote document management formats, evaluation factors by exam, and the necessary additional knowledge testing for admission. All this can be carried out at a highly successful level with a remote version of communication (Wingo et al., 2017). The accessibility in question has another important aspect, taking into account the necessary equipment and communication for passing this type of education. This can be implemented in libraries or even computer school classrooms, where smart, talented, but low-income citizens who receive various types of educational services with the factor of their distance can use these premises with the necessary equipment for a free personal visit. The technique will be used by them at the level of assistance of a caretaker of these classes who has knowledge of computer literacy and who will be able to explain and help with the organizational elements of registration, finding the necessary file, and training at the user level on the work necessary with the appropriate software that will provide students with knowledge and profession (Willett et al., 2019).

They will simultaneously take training sessions in the premises allocated for this purpose based on schools, libraries, or other local institutions that will be allocated for this at the organization level (Order of the Minister…, 2015). In some way, economic issues on the development of the regions will be resolved, as well as in the future with the prerequisites of the migration component, considering the availability of the necessary in the residence with the opportunity to study at the best universities and receive education at different levels (Hsu et al., 2019).

The role of stakeholders, including students, teachers, and educational institutions, has been a focus of research by Khibina et al. (2022). A study at the Kazakh National Women's Teacher Training University aimed to assess the level of distance learning organization and develop recommendations to improve educational and methodological work, including the use of library

resources in the context of distance learning. According to them, distance education systems in Kazakhstan have evolved from traditional distance learning to intelligent, flexible learning models based on web technologies, offering advantages such as classroom and platform independence. Recommendations were developed to optimize the work of university structures aimed at improving the efficiency of the institutes' work and psychological services.

Thus, considering the above, all the parameters and features identified in this study were considered, and the effective components were analyzed separately. This, in its entirety, opens up the process of developing a model of organization and forming criteria within the framework of the use of distance education methods at all levels and for all categories of citizens, factoring in the available legal solutions in the legislative framework that allow for this.

Materials and methods

Participants

This pedagogical research involved 100 students enrolled in their 1st to 4th years at Abai Kazakh National Pedagogical University in the Republic of Kazakhstan. This number of students was chosen because the authors wanted to distribute full-time and distance learning students according to the percentage of students - 70% full-time and 30% distance learning. The age range of the participants was between 19 and 26 years old. Participants took part in the interview on a voluntary basis. No students were dropped out during the survey process or this study in general.

Research method

The research employed a diagnostic testing method based on the developments by Orlov (2023). This method enabled the assessment of participants' personal need levels to achieve educational results while considering external circumstances that might influence their motivation. It is through this methodology (scale) that it was possible to fully assess the improvement in relation to a particular goal set by the survey. The results of this scale show the extent to which the descriptions have succeeded in the process of studying distance technologies. A predefined key was used to evaluate the responses, allowing for the determination of personal needs related to the desire to achieve educational outcomes. The test also assessed the level of personal persistence and motivation in active interaction with educational components.

The evaluation process resulted in participants being categorized into high, medium, or low levels of manifestation in achieving their target aspirations, taking into account external factors affecting their motivation. Additionally, the study considered value motivations at the level of preserving well-being in the context of educational achievement.

Research materials

The research employed a mixed-methods approach, collecting qualitative data through a diagnostic test with 23 questions with "yes" or "no" responses and then quantitatively analyzing and categorizing the data to assess participants' educational aspirations and motivations. Since both Kazakh and Russian are spoken in Kazakhstan, the respondents' answers were translated into English and grouped according to the content of the survey.

The secondary materials included academic, legal, research, and methodological literature relevant to the organization of remote learning and legal literacy. These materials were used during the theoretical analysis conducted at the first stage of the study.

The research was conducted in three stages:

Theoretical analysis: a comprehensive review of existing legal, academic, research, and methodological literature related to the organization of remote learning and legal literacy; identification of the research problem, purpose, and methodological approach.

Testing and experimental work: administering the diagnostic test; analyzing the test results; formulating conclusions based on the data collected.

Conclusion and systematization: finalizing the research by summarizing the findings and conclusions derived from the previous stages; systematizing the results of the research and presenting them for further consideration and application.

Research paradigm

The proposed research paradigm centers on harnessing modern technological advancements in distance learning to enhance education. It explores the potential of diverse distance learning technologies to improve the educational process, foster productive pedagogical collaboration in remote regions, and increase motivation among learners. This paradigm underscores the importance of expanding educational access for individuals who cannot attend traditional full-time classes, potentially increasing university enrollments and teaching resources.

The research was conducted with the aim of establishing organizing parameters and criteria for improving factors in achieving educational objectives, particularly in the context of remote learning, and assessing the impact of external circumstances on these outcomes. The collected data were analyzed using standard methods of mathematical calculation and graphical representation to draw meaningful insights and conclusions from the study.

Results

The result of the study is the development of a model for the application of distance learning and the criteria for its support, allowing for the formation of an educated personality with value-based motivational components. Therefore, the research with the created model of the organization of distance learning and the parameters of the knowledge presented within it was introduced into the educational process in several stages. They included determining the significance of external obstacles, taking into account various life circumstances, both personal and public, for the realization of personal aspirations, things that spark interest in life and have personal importance, including education, which is at the beginning of all personal manifestations. This will be revealed based on the data obtained by the selected testing method, which provided results satisfying the above parameters, which were also clarified and expanded with pedagogical supervision and detailed clarification of the necessary information from respondents.

The obtained data were further subjected to statistical processing. The next stage involved the development and implementation of an important model based on the criteria described above for its subsequent implementation in the field of practical education. This allowed determining the level of its importance at a high, significant level in solving many of the above-described tasks in the field of education. The study covered 100 students. According to the results of the study, most students have an average and high need for success. This is presented in Figure 1.

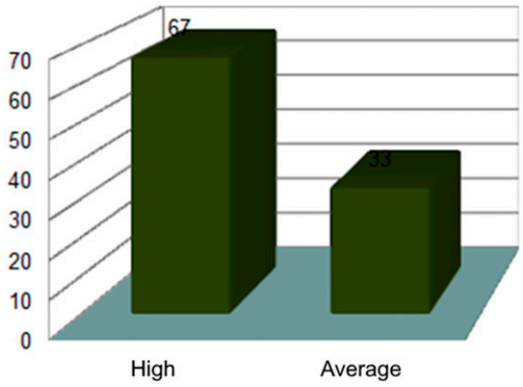

Figure 1. Distribution of students in percentage ratio depending on the level of need for success.

Thus, the obtained research data showed that the trainees have a sufficient level that determines their motivational component to fulfil their personal potential. This allows achieving the goals in learning activities, where they manifest themselves at the level of personal capabilities. The revealed aspiration shows a high personal pursuit of manifesting themselves at the level of developed mental activity and the development of their talents. But along with the data, a detailed analysis of the results revealed a tendency to update information in a position with its value level of presentation. Information data is important for the preservation of a prosperous component of life, the formation of a student's personality at the level of their ecological culture, and value parameters for the implementation of the motivational and need spheres of individuals. This allows them to fulfil their personal needs at the level of preserving the prosperous component of life within the framework of creative and respectful behavior and social activity (Chick et al., 2020).

This need was identified based on the analysis of the obtained research data and pedagogical clarification. A criterion was identified, which indicated that a part (62%) of students desire to reach the goal at the level of achievement at any cost. This is relevant even considering the fact that personal activity will adversely affect others in terms of aspects of implementing it. In the sphere of the obtained parameter, the component of the need to prepare a model was determined, considering the presentation of knowledge at the level of the formation of moral criteria. They will set the direction of the boundaries of personal behavioral reactions, taking into account the preservation of a prosperous component of society and ecology. This is reflected in the current trends in the development of the world, including in the field of education in general. In addition, pedagogical clarification helps teachers figure out how much an outside factor is getting in the way of students meeting their goal prerequisites, even at the level of training, which some students can't do for a variety of outside reasons, as shown in Figure 2.

The processing of the received information in its generalization allows for discussing the need to introduce factors into the system of practical education. They would compensate for the identified positions on the row by achieving one of their most important indicators in life, such as getting an education that allows the younger generation to acquire a specialty. This will allow it to further self-actualize at a qualitative level, increasing the status of its life and guaranteed income. This, in large-scale consideration, is of great importance for the preservation and restoration of a prosperous component of the life of the entire society, raising the level of education of the population and the quality of life. Such conditions directly depend on the circumstances of an educational nature, in which the acquisition of knowledge at all levels will determine the future fate of the individual.

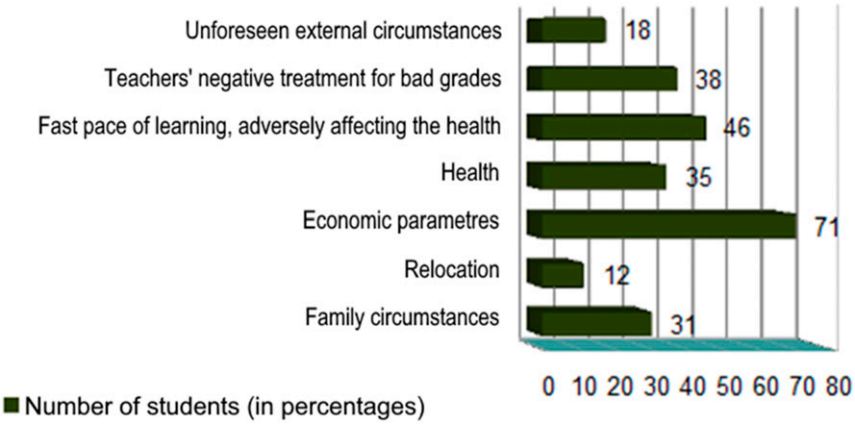

Figure 2. The reasons and the level of their significance, which prevents the respondents from passing the educational process of the educational environment at a qualitative level and successfully.

Talent and intellectual development will be revealed at the expense of future professional activity in the presence of internal aspirations. Due to external interference, which was presented based on the obtained research data, reasons were identified that were not related to personal motivation to continue studying or the availability of knowledge and talents. The reasons have an unacceptable criterion that will not allow the student to receive a full range of educational services. This is not acceptable in the sphere of modern capabilities and the technological component of the development of the world. This will allow the society to lose talented highly professional personnel who would be capable of improving the level of well-being of society along with the performance of their future professional work, fully unleashing their personal potential at the level of discoveries, achievements.

Thus, there would be an opportunity to qualitatively improve the welfare of society. In addition, along with this, discrimination occurs against a part of the younger generation who could not get an education, along with the highlighted reasons that do not depend on the knowledge, skills, and talents of the individual. Smart individuals who cannot get an education for no reason of their own live in worse conditions at a qualitative level of life support. This makes the life of society in general less favorable, and therefore these factors need creative correction based on the identified components (Kaplan and Haenlein, 2016). The correctness of the study was ensured by the fact that the characteristics and data parameters of the diagnosis and the developed model were comparable in the study. All this made it possible to develop distance learning criteria and a model of its organization at the level of existing legal parameters. They allow implementing this, which includes parameters from which the general level of presentation of knowledge and communication with students from the teaching staff will be provided. Remote learning can be on par with full-time and part-time education. Applicants will be able to enroll in it and subsequently receive a full-fledged education in any area within the parameters described above. Part of the developed organization highlights the need for students to freely switch from full-time to distance learning and back at the level of the educational process to the sphere of emerging reasons, both personal and external, that do not allow the student to attend classes full-time.

At the same time, this format will ensure the continuity of the educational process. Moreover, students who are significantly behind in curriculum completion, not keeping up with the development against the background of its rapid pace, should be transferred to the distance learning

format. This allows them to complete the learning process in its full volume already at a more relaxed pace in an individual rhythm of learning knowledge, which involves studying the full amount of knowledge but in a longer period, considering an increase in the time of study for a year or two if necessary. This will be possible within the framework of the distance format of presenting knowledge, which provides, as well as full-time forms, an individual approach to teaching with the preparation of forms for study, but in individual, more extended periods, both studying the material and passing the necessary assessment tests and others. During the control part of the study, students were told about the new way of running classes based on the chosen criteria and the option of switching to distance education. They were also given some of these ideas to try out as a pedagogical experiment. All of the students who took part showed signs of increasing motivation and interest in learning activities. The selected criteria for achieving the goal were increased to their high values for all (100%) of the students studied.

It looks like the dynamic data shows that the pedagogical model that was made using technological advances is working well at highlighting the distance learning format in the pedagogical sphere with methodological requirements. This improves the value-information component in the study of various disciplines at different levels of students. This means expanding the range of educational services, improving the quality of education, and making it possible for all students to complete the study directions according to the chosen methods, regardless of the occurrence of unforeseen situations and circumstances that may prevent this. The above-described factors of the use of distance education will increase the level of education of the population, which will contribute to improving the development of regions by solving many significant issues not only in the field of education but also in the economy (Krishnamurthy, 2020). The trends of the modern world determine a significant level of development in the technological state of many spheres. Their application is important in the sphere of successful development in the modern world and innovative achievements of technological progress, which should be applied to expand opportunities and improve educational services at a practical level. Engineering achievements, which enable the implementation of the use of various remote technologies and methods, make it possible to create conditions for improving the educational process in the field of its practical application at a high level.

Due to many circumstances, this allows students to receive education at different levels, against the background of maintaining their health based on their physical, psycho-emotional, and social status, and against the background of compliance with both regulatory and modern education within the framework of current trends in the environmental orientation of education (Saykili, 2018). Additionally, according to the research, the developed model allows students to form motivation at a high level. This ensures a high level of formation of their mood for the educational process, which they will be able to complete after receiving a specialty, even due to unforeseen circumstances. This increases their interest in activity, self-education, and expanding knowledge in the studied disciplines, which also contributes to the development of a high level of communication and intellectual development, which will contribute to the formation of their professional personality at a high level of value motivations, building their professional activities for society (De Souza Rodrigues et al., 2020). Thus, the developed model of the organization of distance education and the criteria for presenting it within the framework of knowledge have proved to be effective and can be used in practice to improve and expand the scope of education in various subjects and disciplines at all levels of education, which is important for the entire field of pedagogy.

Discussion

Distance learning technologies have become increasingly important in the education sector, especially in the context of the ongoing global pandemic. In the Republic of Kazakhstan, the transition to distance learning has been marked by a series of challenges and opportunities as the government and educational institutions adapt to new educational formats and strive to maintain the quality of education (International Trade Administration, 2022).

The impact of online language learning in the era of COVID-19 was studied by Tlepbergen et al. (2022). The article discusses the problems of multilingual education and emergency remote learning in Kazakhstan. According to the survey results, 45% of students recognized online learning as more interesting than traditional learning, and 52% of respondents found distance learning more convenient. Berikkhanova et al. (2017) emphasizes the importance of the wide introduction of distance learning methods based on modern pedagogical, perspective information, and telecommunication technologies to meet the requirements of modern society and the immediate future. The use of digital technology and the Internet is essential for distance education, and there are recommendations to make them available throughout the country, create a single domestic learning platform in the Kazakh language, and develop an effective methodology for distance learning. In contrast to Berikkhanova et al. (2017), the author's study highlights the transformational potential of multilevel, diverse distance learning technologies in improving the quality of education by increasing motivation, meeting the needs of students from remote regions, and expanding access to higher education.

Also, the issue of distance education technology is explored in the Zainiyeva and Abzhapparova (2022) work. Universities have been forced to adapt to current events quickly, spend significant funds on accelerated digitalization, and often make decisions without taking into account the possible consequences. The sudden transition to online learning has opened great opportunities for innovation in virtual mobility, but it has also impacted the quality of instruction because infrastructure and people often lack it. The analysis of the formation of the system of distance education in Kazakhstan and abroad by Nurmukhametov et al. (2015) enables us to conclude the interdependence and interrelationship of correspondence and distant educational technologies. The use of computer and Internet technologies allows for a new stage in the development of distributed cooperation and integration of educational institutions in the organizational, educational, and scientific research areas in different regions of Kazakhstan and all over the world. Together with this and the author's research, their findings can mutually support each other, combining practical benefits and providing a more complete understanding of the use and implications of distance learning technologies in modern education.

Bokayev et al. (2021a, 2021b) examine the benefits and drawbacks of distance/online learning in Kazakhstan during the COVID-19 pandemic. The responses of the 31,300 parents surveyed, as well as in-depth interviews with 65 parents, are used to construct several regression models to better understand how parents perceive the educational quality of distance/online learning in today's circumstances. The regression results show that the age of the parent and the level of family income are positively correlated with the parents' level of satisfaction with the provided distance/online learning, while the number of children in a family is negatively related to the parents' satisfaction with the learning process.

The development of the internet has presented challenges for teaching and learning, especially in terms of instructors' rights and expectations to maintain an appropriate environment for educational objectives. The COVID-19 pandemic has amplified these concerns, as virtual teaching methods had to be widely adopted among instructors almost overnight. Deflem (2021) discusses the implications

of the advent of the internet and the widespread adoption of virtual methods of instruction during the COVID-19 pandemic. The author highlights the importance of educating students about appropriate, responsible, and safe behavior within a digital environment, as well as the responsibilities of teachers to ensure a safe and responsible digital environment for their students. By addressing these issues and implementing appropriate legal and institutional measures, it is possible to maintain the essence of education in society while adapting to the challenges presented by the internet and virtual teaching methods.

In France, there are several distance learning and online programs in technology studies. AcademicCourses.ca and OnlineProgram.ca list various distance learning programs in technology studies in France for 2023/2024. Additionally, Campus France Canada offers over 300 free online courses, some of which are provided in English (Wotto, 2020). The influence of emerging technologies on distance education is profound, with software technology providing a range of tools and resources that enhance the learning experience (Garlinska et al., 2023). In Canada, the United States, and France, higher education distance learning (HEDL) responses to technological transformations are diverse, and the COVID-19 crisis has triggered an online learning outbreak, leading to the evolution of distance learning in universities (Wotto, 2020).

During the COVID-19 pandemic and the war in Ukraine, distance learning has become a significant aspect of the education system. The main advantages of online learning in Ukraine include the ability to adapt the curriculum to individual needs, attract more participants during wartime, and simplify the learning environment (Ovcharuk et al., 2023). However, there are also disadvantages, such as the lack of necessary domestic conditions for some students and teachers, and the difficulty of studying certain topics in depth. The war has further negatively impacted education in Ukraine, affecting students' performance and mental health. The use of emerging technologies, such as software technology, video-assisted learning, and artificial intelligence in education, has had a profound impact on distance education, providing tools and resources to enhance the learning experience (Sytnykova et al., 2023). Teaching online in wartime has been described as stressful, and the war has made it harder for Ukrainian children to succeed in school (Perepelytsia, 2022). The education system in Ukraine is striving to address these challenges by providing full-time education for children in schools and ensuring access to learning gadgets with the help of international partners.

In conclusion, the adoption of distance learning technologies, accelerated by the COVID-19 pandemic and other external factors, has significantly impacted education systems in various countries, including Kazakhstan, France, Canada, the United States, and Ukraine. While many students have embraced online learning for its convenience and interest factor, it has also highlighted the significance of addressing issues related to infrastructure, accessibility, and the caliber of instruction. Furthermore, the integration of emerging technologies, such as software technology and artificial intelligence, has played a transformative role in enhancing the learning experience. However, the sudden shift to virtual learning has raised concerns about digital citizenship, online safety, and the well-being of students and educators. As education systems continue to evolve in response to these challenges, it is crucial to prioritize a safe and responsible digital environment and address the unique needs and circumstances of students and instructors.

Conclusions

At the level of modern technological processes, the use of multilevel, diverse distance learning technologies can considerably improve the educational process. Technologies expand their capabilities to present the necessary information. Additionally, for teachers and students from faraway

places to work together effectively, there needs to be a big boost in the motivation of the younger generation. This can be achieved by focusing on the personal qualities of smart and talented people of all ages. This will help students succeed in school and gain knowledge in a wide range of subjects and fields. Technological advantages at the distance learning level allow strengthening the educational side of the education of the population of remote regions or those who, for some other reason, cannot attend full-time classes. This will increase the number of accepting places in universities and expand the teaching staff.

Distance learning includes important criteria that allow the formation of value aspects of a person with a culture of caring for the environment and a prosperous component of society, such as environmentally oriented, motivational-value, cognitive-informational, analytical-active, and cultural-aesthetic criteria. The form of organization of distance learning, as the need arises at the personal level of the student, modifies the level of education, taking into account the passage of continuous training. If the situation improves or the student's desire is revealed, they can return to the full-time format of training. This choice can be made in free form in multiple quantities. Distance education faculties can be formed at all educational institutions, and students in various remote districts and localities can graduate in a remote format of admission, document management, and training. This will improve the entire educational process at the level of its improvement due to modern development. The materials in this article are useful for education workers at all levels, methodologists, and can be applied in practice, which will contribute to solving important tasks in the field of education.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Ethical statement

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. A study was approved by National Ethics Commission of the Ministry of Health of the Republic of Kazakhstan, No. 971-O.

ORCID iD

Nurlan Apakhayev https://orcid.org/0000-0001-7895-1859

Data availability statement

The data that support the findings of this study are available on request from the corresponding author.

References

Abuhassna H, Al-Rahmi WM, Yahya N, et al. (2020) Development of a new model on utilizing online learning platforms to improve students' academic achievements and satisfaction. *International Journal of Educational Technology in Higher Education* 17: 38. DOI: 10.1186/s41239-020-00216-z

Affouneh S and Raba AA (2018) Trends of the recorded lectures at An-Najah National University from the staff faculty perspectives. *Journal of Educational Research and Reviews* 6(5): 71–79.

Almaiah MA, Al-Khasawneh A and Althunibat A (2020) Exploring the critical challenges and factors influencing the E-learning system usage during COVID-19 pandemic. *Education and Information Technologies* 25(6): 5261–5280. DOI: 10.1007/s10639-020-10219-y

Arias JJ, Swinton J and Anderson K (2018) Online vs. face-to-face: a comparison of student outcomes with random assignment. *E-Journal of Business Education and & Scholarship of Teaching* 12(2): 1–23.

Bekmanova G, Ongarbayev Y, Somzhurek B, et al. (2021) Personalized training model for organizing blended and lifelong distance learning courses and its effectiveness in Higher Education. *Journal of Computing in Higher Education* 33(3): 668–683. DOI: 10.1007/s12528-021-09282-2

Berikkhanova GE, Gainullina FA, Berikkhanova AE, et al. (2017) Distance e-learning experience in the Republic of Kazakhstan (by the example of the Shakarim state university of Semey). *Espacios* 38(50): 1–34.

Bokayev B, Torebekova Z, Abdykalikova M, et al. (2021a) Exposing policy gaps: the experience of Kazakhstan in implementing distance learning during the COVID-19 pandemic. *Transforming Government: People, Process and Policy* 15(2): 275–290. DOI: 10.1108/TG-07-2020-0147

Bokayev B, Torebekova Z, Davletbayeva Z, et al. (2021b) Distance learning in Kazakhstan: estimating parents' satisfaction of educational quality during the coronavirus. *Technology, Pedagogy and Education* 30(1): 27–39. DOI: 10.1080/1475939X.2020.1865192

Bolliger DU and Halupa C (2018) Online student perceptions of engagement, transactional distance, and outcomes. *Distance Education* 39(3): 299–316. DOI: 10.1080/01587919.2018.1476845

Chick RC, Clifton GT, Peace KM, et al. (2020) Using technology to maintain the education of residents during the COVID-19 pandemic. *Journal of Surgical Education* 77(4): 729–732. DOI: 10.1016/j.jsurg.2020.03.018

de Souza Rodrigues MA, Chimenti P and Nogueira ARR (2020) An exploration of eLearning adoption in the educational ecosystem. *Education and Information Technologies* 26(1): 585–615. DOI: 10.1007/s10639-020-10276-3

Deacon B, Laufer M and Schäfer LO (2022) Infusing educational technologies in the heart of the university – a systematic literature review from an organisational perspective. *British Journal of Educational Technology* 54(2): 441–466. DOI: 10.1111/bjet.13277

Deflem M (2021) The right to teach in a hyper-digital age: legal protections for (post-)pandemic concerns. *Society* 58(3): 204–212. DOI: 10.1007/s12115-021-00584-w

Frazer C, Sullivan DH, Weatherspoon D, et al. (2017) Faculty perceptions of online teaching effectiveness and indicators of quality. *Nursing Research and Practice* 2017: 9374189. DOI: 10.1155/2017/9374189

Garlinska M, Osial M, Proniewska K, et al. (2023) The influence of emerging technologies on distance education. *Electronics* 12(7): 1550. DOI: 10.3390/electronics12071550

Gürer M, Tekinarslan E and Yavuzalp N (2016) Opinions of instructors who give lectures online about distance education. *Turkish Online Journal of Qualitative Inquiry* 7(1): 47–78.

Hsu H-C, Wang CV and Levesque-Bristol C (2019) Reexamining the impact of self-determination theory on learning outcomes in the online learning environment. *Education and Information Technologies* 24(3): 2159–2174. DOI: 10.1007/s10639-019-09863-w

Hurlbut AR (2018) Online vs. traditional learning in teacher education: a comparison of student progress. *American Journal of Distance Education* 32(4): 248–266. DOI: 10.1080/08923647.2018.1509265

International Trade Administration. (2022) Kazakhstan – country commercial guide. Available at: https://www.trade.gov/country-commercial-guides/kazakhstan-education-services-and-technologies

Kaplan AM and Haenlein M (2016) Higher education and the digital revolution: about MOOCs, SPOCs, social media, and the Cookies Monster. *Business Horizons* 59(4): 441–450. DOI: 10.1016/j.bushor.2016.03.008

Khibina N, Salimzhanova A and Khibina Z (2022) Problems and opportunities of distance learning in the context of the pandemic: case of one university in Kazakhstan. In: Proceedings of the 21st European conference on e-learning – ECEL 2022, P Fotaris and ABlake, Brighton, Academic Conferences International Limited, pp. 181–191. DOI: 10.34190/ecel.21.1.600

Krishnamurthy S (2020) The future of business education: a commentary in the shadow of the Covid-19 pandemic. *Journal of Business Research* 117: 1–5. DOI: 10.1016/j.jbusres.2020.05.034

Lee J, Song HD and Hong JA (2019) Exploring factors, and indicators for measuring students' sustainable engagement in e-learning. *Sustainability* 11(4): 985. DOI: 10.3390/su11040985

Li KC, Wong BTM and Chan HT (2023) Teaching and learning innovations for distance learning in the digital era: a literature review. *Frontiers in Education* 8: 1198034. DOI: 10.3389/feduc.2023.1198034

Narayan N and Singh SK (2020) Online learners' experiences and views towards online courses: a case study of the University of the South Pacific. *Directions: Journal of Educational Studies* 34(1): 29–41.

Nestuly S and Shara S (2023) Distance learning as a relevant educational technology in higher education institutions. *Scientific Bulletin of Mukachevo State University. Series "Pedagogy and Psychology"* 9(1): 39–46. DOI: 10.52534/msu-pp1.2023.39

Nurmukhametov N, Temirova A and Bekzhanova T (2015) The problems of development of distance education in Kazakhstan. *Procedia – Social and Behavioral Sciences* 182: 15–19. DOI: 10.1016/j.sbspro.2015.04.729

Order of the Minister of Education and Science of the Republic of Kazakhstan No. 137 (2015). On approval of requirements for educational organizations to provide distance learning and the rules for organizing the educational process for distance learning. Available at: https://adilet.zan.kz/rus/docs/V1500010768#z7

Orlov YM (2023) Methodology Orlov Y.M. Test – questionnaire Need for goal achievement. Scale for assessing the need to achieve success. Available at: https://psycabi.net/testy/475-metodika-orlova-yu-m-test-oprosnik-potrebnost-v-dostizhenii-tseli-shkala-otsenki-potrebnosti-v-dostizhenii-uspekha

Ovcharuk O, Ivaniuk I and Leshchenko M (2023) Impact of school lockdown on access to online instruction during the war in Ukraine. *European Journal of Education* 58(4): 561–574. DOI: 10.1111/ejed.12589

Perepelytsia T (2022) Online learning and war: how pandemic experience can help Ukrainian education? Ilko Kucheriv "Democratic Initiatives" Foundation. Available at: https://dif.org.ua/en/article/distance-learning-en.

Rakhmetov M, Sadvakassova A, Saltanova G, et al. (2022) Usage and effectiveness of educational platforms in Kazakhstan during the Covid-19 pandemic. *World Transactions on Engineering and Technology Education* 20(3): 226–231.

Saykili A (2018) Distance education: definitions, generations, key concepts and future directions. *International Journal of Contemporary Educational Research* 5(1): 2–17.

Seilkhan A, Abdrassulova Z, Erkaebaeva M, et al. (2022) Problems of distance education in Kazakhstan during the COVID-19 pandemic. *World Journal on Educational Technology: Current Issues* 14(2): 380–389. DOI: 10.18844/wjet.v14i2.6913

Sibirskaya E, Popkova E, Oveshnikova L, et al. (2019) Remote education vs traditional education based on effectiveness at the micro level and its connection to the level of development of macro-economic systems. *International Journal of Educational Management* 33(3): 533–543. DOI: 10.1108/IJEM-08-2018-0248

Sytnykova Y, Shlenova M, Kyrpenko Y, et al. (2023) Teaching technologies online: changes of experience in wartime in Ukraine. *International Journal of Emerging Technologies in Learning* 18(18): 165–176. DOI: 10.3991/ijet.v18i18.40491

Tlepbergen D, Akzhigitova A and Zabrodskaja A (2022) Language-in-education policy of Kazakhstan: post-pandemic technology enhances language learning. *Education Sciences* 12(5): 311. DOI: 10.3390/educsci12050311

Trakru M and Kumar Jha T (2019) E-learning effectiveness in higher education. *International Research Journal of Engineering and Technology* 6(5): 96–101.

Willett J, Brown C and Danzy-Bussell LA (2019) An exploratory study: faculty perceptions of online learning in undergraduate sport management programs. *Journal of Hospitality, Leisure, Sports and Tourism Education* 25: 100206. DOI: 10.1016/j.jhlste.2019.100206

Wingo NP, Ivankova NV and Moss JA (2017) Faculty perceptions about teaching online: exploring the literature using the technology acceptance model as an organizing framework. *Online Learning* 21(1): 15–35. DOI: 10.24059/olj.v21i1.761

Wotto M (2020) The future high education distance learning in Canada, the United States, and France: insights from before COVID-19 secondary data analysis. *Journal of Educational Technology Systems* 49(2): 262–281. DOI: 10.1177/0047239520940624

Zainiyeva L and Abzhapparova A (2022) Distance education at universities during the COVID-19 Pandemic (on the example of the Republic of Kazakhstan). In: ICEDS '22: Proceedings of the 2022 3rd International conference on education development and studies, New York, Association for Computing Machinery, pp. 90–95. DOI: 10.1145/3528137.3528140

Author Biographies

Nurlan Apakhayev is a PhD in Law, Associate Professor at the Department of Legal Disciplines, Kainar Academy, Almaty, Republic of Kazakhstan. His research interests are educational processes, forms of education, legal literacy, and the social implications of distance learning.

Indira Mussabekova is a PhD in Law, Associate Professor at the Department of Legal Disciplines, Kainar Academy, Almaty, Republic of Kazakhstan. Her scientific interests are distance learning, personality-oriented approaches, and forms of organisation for distance learning.

Dina Bugybay is a PhD in Law, Researcher at the Department of Law, Caspian University of Technologies and Engineering named after Sh. Yessenov, Aktau, Republic of Kazakhstan. The fields of scientific interest are distance learning technologies, the legal framework for e-learning, the digital divide, and access to education.

Kaldarbek Kuandykov is a PhD in Law, Associate Professor at the Department of Customs, Financial and Environmental Law, Al-Farabi Kazakh National University, Almaty, Republic of Kazakhstan. His research interests are legal regulation in the Republic of Kazakhstan and distance learning methods within the framework of legal regulation.

Kuanysh Koishybaiuly is a PhD in Law, Senior Lecturer at the Department of Legal Disciplines, Kainar Academy, Almaty, Republic of Kazakhstan. His research interests are legal literacy, criterias of distance learning, accessibility, and inclusivity in e-learning.