

## Application of information technologies in distance learning in the field of higher education

**Gani Issayev**<sup>1\*</sup> Khoja Ahmed Yasawi International Kazakh-Turkish university/Turkestan, Professional and Pedagogical College, 29, B. Sattarkhanov Street, 161200, Turkestan, Kazakhstan <https://orcid.org/0000-0002-5979-8278>

**Baimukhanbetov Bagdat**<sup>2</sup>, Khoja Akhmet Yassawi International Kazakh-Turkish University, Department Of Physical Education, SKO, B.Sattarkhanov Ave, 29, Turkistan, Kazakhstan, <https://orcid.org/0000-0001-5153-1088>

**Duisenbayev Abay**<sup>3</sup> Abai Kazakh National Pedagogical University, Department of Pedagogy and Psychology, Adress: 050010, Dostyk avenue, 13, Almaty, Kazakhstan <https://orcid.org/0000-0001-9144-2020>

**Sagimbayeva Aizhan**<sup>4</sup>, Abai University, Natural Geographical Institute, senior lecturer Department of chemistry Kazbek bi st., 30, A25D8F5 (050010), Almaty, Kazakhstan, <https://orcid.org/0000-0002-3445-8832>

**Lazzat Baimanova**<sup>5</sup> Sh. Ualikhanov Kokshetau University, Department of General Linguistics and Literature,. Educational program "Foreign language: two foreign languages", 020000, Abay Str. 76. Kokshetau, Kazakhstan, <https://orcid.org/0000-0002-0371-0898>

**Yegenissova Almazhai**<sup>6</sup>, Caspian State University of Technologies and Engineering named after Sh. Yessenov, Faculty of Pedagogy, Department of Pedagogical Technologies, Kazakhstan <https://orcid.org/0000-0002-1568-7912>

### Suggested Citation:

Issayev, G., Bagdat, B., Abay, D., Aizhan, S., Baimanova, L., & Almazhai, Y., (2022). Application of information technologies in distance learning in the field of higher education. *World Journal on Educational Technology: Current Issues*. 14(4), 1017-1024. <https://doi.org/10.18844/wjet.v14i4.7650>

Received from March 25, 2022; revised from May 12, 2022; accepted from July 15, 2022.

Selection and peer-review under responsibility of Prof. Dr. Servet Bayram, Yeditepe University, Turkey.

©2022 Birlesik Dunya Yenilik Arastirma ve Yayıncılık Merkezi. All rights reserved

### Abstract

Due to the COVID-19 pandemic that affected the world, education has switched to distance education. Education has transformed from face-to-face education to distance education. This situation caused educators and administrators who were unprepared to panic. Researchers need to increase research on distance education. In the distance education system, it is the most basic task of the teachers to increase the participation of students in the lessons, to teach the students with different techniques as in face-to-face education and to increase their motivation. It is very important to research and develop the techniques and systems used in distance education. In this context, the aim of this study is to determine the views of university students about the distance education process and to get their suggestions. In this study, the qualitative research method for the research data was used for the views and needs of the students studying at the university about the distance education system. The study group included 102 education faculty students studying at 3 different universities. The application was carried out within the scope of the 2020–2021 fall semester computer courses. The interview form developed by the researchers was used as a data collection tool within the scope of the research. While the interview questions were being prepared, the opinions of three experts were taken and the questions were finalised. Content analysis was used to analyse the data. The findings obtained as a result of the research are given in detail in the findings and results sections.

\* ADDRESS OF CORRSPONDENCE: Gani Issayev \* Khoja Ahmed Yasawi International Kazakh-Turkish university/Turkestan, Professional and Pedagogical College, 29, B. Sattarkhanov Street, 161200, Turkestan, Kazakhstan

Email address: [Gani.isaev@mail.ru](mailto:Gani.isaev@mail.ru)

## 1. Introduction

The integration of technology with education is provided by keeping up with today's age. Teachers who increase their proficiency in using educational technologies argue that knowledge is more effective and permanent when technology works together with education (Mishra, Koehler, & Kereluik, 2009). Educational technologies are extremely important in order to increase the influence of the teacher in the classroom in order to meet the education demand of crowded classrooms. While doing all these, we should not forget that technology is not an alternative to the teacher, but only a helper (Hizal, 1988, pp. 24–25, as cited in Turgut & İnce, 2022).

Rapid developments in information technologies affect the structure and form of education. Education is constantly evolving. Education has an important place in human life and is affected by the changes in life. If we consider today's economy in terms of information and technology, then the general purpose of the sums is to produce human resources by using information technologies in all fields from health to education (Ari, 2010; Zhang, De Pablos, & Xu, 2014).

The Internet has become one of the vital ways to make resources available for research and research learning in order to share and acquire knowledge for both teachers and students (Richard & Haya, 2009, as cited in Moore, 2016). In today's terms, distance education and technology-based e-learning cover the use of the Internet and other important areas and include technologies to produce materials for learning, teaching students and also organising lessons in an orderly manner (Fry, 2001). With the development in technology, educational institutions have started to use distance education in their courses. They also use advanced digital learning materials in these lessons (Jung, Wong, Li, Baigaltugs, & Belawati, 2011). Researcher have defined open and distance learning as an approach that focuses on facilitating access to education and training opportunities, freeing learners from the limitations of time and space and providing individuals with flexible learning opportunities. The most widely accepted definition of open and distance learning in recent years, by Moore and Kearsley (2012), is teaching and planned learning activities that require communication through various technologies and institutional organisations, where teaching usually takes place in a different place than where learning takes place (Moore, 2016).

E-learning covers a range of applications, learning methods and processes (Rossi, 2009; Uzunboylu and Kocakoyun; 2017). Therefore, the widely accepted definition of e-learning is that, according to Oblinger and Hawkins (2005) and Dublin (2003), there is not even a common definition for the term. Comments on these inconsistencies have conveyed that the more academic papers there are, the more definitions there can be of the term; however, Holmes and Gardner (2006) and Dublin (2003) have tried to find a common approach. According to Oblinger and Hawkins (2005), e-learning is an online course to use technology to deliver part or all of a course independent of the time and place of permanent courses.

Systems to be used in distance education provide an organisation with easier access to information sources, effective engine search and highly salvaged techniques for finding appropriate information (Alavi & Leidner, 2001). The meaning of the term e-learning proposes the following questions: For distance learners, does the course mean using a virtual learning environment? Do you support the provision of campus-based education? Is it referring to an online tool to enrich, expand and develop cooperation? or Is it purely online learning or a part of blended learning? Other researchers have also identified e-learning as a revolutionary approach (Mohammed, 2022), providing the workforce with the knowledge and skills needed to turn change into benefits (Jennex, 2005). For example, Twigg (2002) uses an e-learning approach that is interactive, repetitive, self-guided and can be customised. Welsh, Wanberg, Brown, & Simmering (2003) also called this term the use of computer networks and technologies, mainly through the Internet, to provide information and instructions to individuals.

Digital students in today's environments are very tactile and personal. Student use of mobile devices can be turned into applications for collaborative learning. Smartphones are becoming more accessible, penetrating and transforming every day social practices and space. These applications can be bundled with various text documents formats, audiovisual content with mini-videos, microblogging applications and social networks (Facebook, Twitter, LinkedIn etc.). Smartphones are no longer just a means of communication, but have become many things to people in social and work life and possibly a strong tool in the academy. Therefore, the average higher education in developed and developing countries is now trying to master its use in different educational processes, perspectives and teaching methods (Johnson et al., 2014; UNESCO, 2013).

More recently, the higher education system revealed that project data are useful in contributing to both retention and advancement, and a number of areas highlighted by researchers are essential to students' success to expectations, support, feedback and participation (Baxter, 2012; Schofield & Dismore, 2010; Tinto, 2009). It turns out that the main purpose of these programmes is that the programmes implemented at the university should be oriented to the expectations of the students. Much of the research carried out in the field of higher education is based on both long and short distances, institutions and campuses, which demonstrate the importance of retaining and advancing students. It is based on a complex combination of institutional, personal and biographical factors. But some points in a student's journey show that some influencing factors are more influential than others, whether the student stays in school or drops out (Johnson & Watson, 2004; Jones, 2008).

Another important advantage of distance education is adult education. Since individuals who have reached a certain age can benefit from formal education, and may contain some difficulties. However, with distance learning, these difficulties remain in the background. Regardless of age, adults also have the opportunity to get the education they aspire (Akyürek, 2020), providing them with the opportunity to learn distance education throughout their lives as granted.

### **Purpose of the research**

The use of technology in educational processes is very important. The distance education system is one of the technologies used in education. Distance education is not only provided by distance learning, but a mixed education system is used by providing both distance and face-to-face training with the hybrid method. The opinions of prospective teachers about the distance education system and the information technologies used in distance education are very important. For this reason, this study, which was carried out in three different universities, is to determine the views of pre-service teachers studying the Informatics course about the distance education system they use in higher education. Within the scope of this general purpose, answers were sought to the following sub-objectives:

1. What are your views on distance education in the teaching process? (positive)
2. What do you think about distance education and face-to-face education?
3. What does distance education mean to you (evaluate it in terms of negativity)

### **2. Method**

The aim of this research is to determine the views of the students studying in the education faculties of the university on the subject of distance education in the Informatics course. For this general purpose, the qualitative research method was preferred in order to explain the views in depth. The phenomenological design was chosen from the qualitative research methods. The advantage of the phenomenological design is that it is a qualitative research design that aims to highlight the perceptions and experiences of the participants according to their own perspectives (Ersoy & İncebacak, 2016).

## 2.1. Research group

The study group of the research consists of students studying at the education faculties of the university. Maximum variation sampling, which is one of the purposive sampling types, was used in the selection of the sample. The purpose of using this method is to reflect the diversity of individuals who may be a party to the problem in a small sample group at the maximum level (Yıldırım & Şimşek, 2018). A total of 102 students studying at education faculties of 3 universities participated in the research on a voluntary basis. The personal information of the participants is given in Table 1.

**Table 1. Demographic information**

Variable	Group	<i>f</i>
Gender	Female	61
	Male	41
University	U1	45
	U2	33
	U3	24

## 2.2. Data collection and analysis

In order to achieve the aim of this study, ethical committee permissions were obtained from the universities included in the study. The research data were collected using a semi-structured interview form prepared by the researchers by taking expert opinions. A pilot study was conducted to determine the clarity of the questions. After the experts and after the pilot evaluation, three questions were accepted as the research questions. The interviews were recorded with a voice recorder. The answers were approved by the group participating in the research. It is explained in detail using the content analysis method.

## 3. Findings

### 3.1. What are your views on distance education in the teaching process? (positive)

**Table 2. Distance education in the teaching process (positive)**

Theme	<i>f</i>
Education multiple possibilities	42
Technology assisted education	25
Learning anywhere	19
Different training opportunities	16

The opinions of the students studying at the faculty of education of universities about distance education were applied in the computer course. The positive aspects of the distance education system were asked. The multifaceted provision of education from positive opinions about distance education provides technology-supported teaching. The distance learning method provides students with the opportunity to learn anywhere. Everyone who has an electronic device receives training by sharing both live and by sharing content in the learning environment. Students at university institutions are a certain age group. For this reason, space-independent trainings are always advantageous.

Opinions of some of the university students are as follows:

‘Distance education from information technologies is very important, especially for colleges. Many of us are working and because we are working, we have to take time off from work to stay and go to school and take classes. There must be options for us. It would be much better if there were trainings from afar or face to face’.

### 3.2. What do you think about distance education and face-to-face education?

**Table 3. Opinions on distance education and face-to-face**

Theme	<i>f</i>
Face-to-face education	102
The education system that should be	72
High level of communication	42
Distance education	102
Necessary	61
Effective if applied correctly	48
Technical diversity should be ensured	31

When the students of the faculty of education of the university were asked about face-to-face training with distance education, they expressed positive opinions in both categories. They stated that face-to-face education is the education system that should be compulsory. This is because effectiveness is at the highest level. They also stated that distance education is advantageous, but it is necessary to use distance education effectively. They argued that teachers and students should know the techniques necessary for the use of distance education and that these techniques and trainings will be permanent.

Opinions of some of the university students are as follows:

‘Face-to-face education and distance education have both positive and negative aspects. Face-to-face education system is the education system that should be. Distance education can only support face-to-face education’.

‘The biggest advantage of face-to-face education is the interaction at the highest level during the lesson. The biggest advantage of distance education is that we can watch the repetition of the course many times and access the course materials whenever we want’.

### 3.3. What does distance education mean to you (evaluate it in terms of negativity)?

**Table 4. Distance education meaning (negativity)**

	<i>f</i>
Less participation in class	72
Not meeting expectations	35
Not used effectively	31
Low motivation	5

Feedback was received from 102 students in order to receive an education-oriented education in schools and universities. The students reported that there was a problem because their participation in the distance education application processes was continuous. Still, this is intended for educational institutions. They stated that they did not achieve success because they did not use the teacher and distance education system effectively. They stated that face-to-face trainings explain the aims of their training in distance education.

Opinions of some of the university students are as follows:

'In distance education, class participation decreases considerably during live lessons. At the beginning of the lesson, there may be distraction in other aspects. The answers I got from my biggest friends are that they just leave the class open and do other things in front of the computer during the live lesson'.

'The teacher sees distance education as a necessity for the student. In fact, when distance education is used effectively, it has been effective in many successful universities. However, the number of universities that use distance education effectively in our country is very low. The instructor of the course shares a note and reads that lecture, so students do not actively participate in the lesson'.

#### **4. Conclusion, discussion and suggestions**

The general purpose of this research is to determine the views of the students studying at the faculty of education in universities that are higher education institutions in the field of distance education. In the general results obtained within the scope of this general purpose, it has been concluded that students will be productive when distance education is used effectively. In the field of distance education, it is concluded that there is a lack of knowledge among teachers and students.

In the computer course, the views of the students studying at the education faculties of the universities on distance education were applied. The positive aspects of the distance education system were asked. Providing multifaceted education from the positive opinions about distance education provides technology-supported education. The distance education method offers students the opportunity to learn anywhere. Anyone who owns an electronic device receives education in any environment, both live and by sharing content. Students in university institutions are adults. For this reason, it is concluded that the education independent of the place is suitable for this student age group. Similar results emerged in the study conducted by Paydar and Doğan (2019). They determined the views of university students on distance learning environments. They obtained the results that the students were willing to carry out distance education because they found the distance education application useful and beneficial.

When the university's education faculty students were asked about distance education and face-to-face education, they expressed positive opinions for both. It has been concluded that face-to-face education is the education system that should be compulsory. It can be said that the reason for this is because the interaction is at the highest level in face-to-face training. They also stated that distance education is advantageous, but that distance education should be used effectively. It has been concluded that teachers and students should know the necessary techniques for the use of distance education and that these techniques and trainings will be permanent. From this finding, it can be said that distance education actually has a great effect on the teaching process.

Feedback was received from 102 students in order to receive education-oriented education in schools and universities. Students stated that they had problems due to their continuous participation in the distance education application processes. Still, this is aimed at educational institutions. They stated that they could not achieve success because they did not use the teacher and the distance education system effectively. Students state that face-to-face training explains the aims of the training they receive in distance education. Considering the results of this finding, activities can be performed to increase student participation in distance education. It is necessary to maximise the motivation of teachers and students in the distance education process. Karal, Cebi, and Turgut (2011) conducted a study, and it was determined that teacher candidates were not interested in distance education due to the fact that the teacher and the student were not in the same place, changed their perceptions and students got bored by the lesson, revealing that they were bored and distracted.

Suggestions have been developed as a result of this research. Since the information systems used in the distance education process are not adequately taught, it has emerged that the training of teachers and students in this field should be increased. By giving in-service training to teachers and students, problems can be eliminated by increasing students' interest in distance education systems.

## References

- Akyürek, M. İ. (2020). Uzaktan Eğitim: Bir Alanyazın Taraması. *Medeniyet Eğitim Araştırmaları Dergisi*, 4(1), 1–9.
- Alavi, M. & Leidner, D. E. (2001). Knowledge management and knowledge management systems: Conceptual foundations and research issues. *MIS Quarterly*, 25, 107–136.
- Ari, Ü. (2010). *Fen bilgisi öğretmen adaylarının ve sınıf öğretmen adaylarının bilimin doğası hakkındaki görüşlerinin incelenmesi [Investigation of the preservice science teachers and preservice classroom teachers' views on nature of science]* (Yayımlanmamış yüksek lisans tezi). Fırat Üniversitesi, Elazığ, Turkey.
- Baxter, J. (2012). Who am I and what keeps me going? Profiling the distance learning student in higher education. *International Review of Research in Open and Distributed Learning*, 13(4), 107–129.
- Dublin, L. (2003). If you only look under the street lamps...Or nine e-learning myths. *The e-Learning Developers Journal*. Retrieved from <http://www.eLearningguild.com>
- Fry, K. (2001). E-learning markets and providers: Some issues and prospects. *Education Training*, 43, 233–239.
- Holmes, B. & Gardner, J. (2006). *E-Learning: Concepts and practice*. London, UK: SAGE Publications.
- Johnson, G. C. & Watson, G. (2004). 'Oh gawd, how am I going to fit into this?': Producing [mature] first-year student identity. *Language & Education: An International Journal*, 18(6), 474–487.
- Jones, R. (2008). Student retention and success: A synthesis of research. York, UK: The Higher Education Academy.
- Jung, I., Wong, T. M., Li, C., Baigaltugs, S., & Belawati, T. (2011). Quality assurance in Asian distance education: Diverse approaches and common culture. *International Review of Research in Open and Distributed Learning*, 12(6), 63–83.
- Karal, H., Çebi, A., & Turgut, Y. E. (2011). Perceptions of students who take synchronous courses through video conferencing about distance education. *The Turkish Online Journal of Educational Technology-TOJET*, 10(4), 276–293.
- Mishra, P., Koehler, M. J., & Kereluik, K. (2009). The song remains the same: Looking back to the future of educational technology. *TechTrends*, 53, 48–53.
- Mohammed, A. A. (2022). Assessing the success of the perceived usefulness for knowledge management systems: A case study of Iraqi higher education. *International Journal of Knowledge Management (IJKM)*, 18(1), 1–24.
- Moore, R. L. (2016). Interacting at a distance: Creating engagement in online learning environments. In *Handbook of research on strategic management of interaction, presence, and participation in online courses* (pp. 401-425). Hershey, PA: IGI Global.
- Oblinger, D. G. & Hawkins, B. L. (2005). The myth about e-learning. *EDUCAUSE Review*, 40, 14–15.
- Ordóñez de Pablos, P. (Ed.). (2014). *Assessing the role of mobile technologies and distance learning in higher education*. Hershey, PA: IGI Global.
- Paydar, S. & Doğan, A. (2019). Öğretmen Adaylarının Açık ve Uzaktan Öğrenme Ortamlarına Yönelik Görüşleri. *Eğitim ve Teknoloji*, 1(2), 154–162.
- Richard, H. & Haya, A. (2009). Examining student decision to adopt web 2.0 technologies: Theory and empirical tests. *Journal of Computing in Higher Education*, 21(3), 183–198.
- Rossi, P. G. (2009). Learning environment with artificial intelligence elements. *Journal of E-Learning and Knowledge Society*, 5(1), 67–75.
- Schofield, C. & Dismore, H. (2010). Predictors of retention and achievement of higher education students within a further education context. *Journal of Further & Higher Education*, 34(2), 207–221.
- Tinto, V. (2009). How to help students stay and succeed. *Chronicle of Higher Education*, 55(22), A33–A33, 31-34.
- Turgut, M. & Ince, M. (2022). Investigation of the relationship between teachers' use of educational technologies and nomophobia. *European Journal of Alternative Education Studies*, 7(1), 72–86.

- Twigg, C. (2002). Quality, cost and access: The case for redesign. In M. S. Pittinsky (ed.), *The wired tower* (pp. 111–143). Hoboken, NJ: Prentice-Hall.
- Uzunboylu, H., & Kocakoyun, S. (2017). A content analysis of master and doctorate thesis in the area of gamification. *International Journal of Innovative Research in Education*, 3(3), 143–154. <https://doi.org/10.18844/ijire.v3i3.1855>
- Welsh, E. T., Wanberg, C. R., Brown, E. G., & Simmering, M. J. (2003). E-learning: Emerging uses, empirical results and future directions. *International Journal of Training and Development*, 7(4), 245–258.
- Zhang, X., De Pablos, P. O., & Xu, Q. (2014). Culture effects on the knowledge sharing in multi-national virtual classes: A mixed method. *Computers in Human Behavior*, 31, 491–498.