World Journal on Educational Technology: Current Issues

Volume 14, Issue 3, (2022) 884-896

www.wj-et.eu

Scientific and methodological foundations for the organization of the educational process in the conditions of distance learning

Zhuldyz Tashkenbayeva[1*] **,** S. Seifullin Kazakh Agro Technical University, Educational program «General disciplines». Addres: 010000 Zhenis avenue, 62., Nur-Sultan, The Republic of Kazakhstan, https://orcid.org/0000-0003-3319-3825

Aitzhan Abdyrov [2] Seifullin Kazakh agrotechnical University, Doctor of Education, Candidate of Technical Sciences, Deputy Chairman of the Board for Akademic Affairs -.010000, Zhenis avenue, 62., Nur-Sultan, Kazakhstan https://orcid.org/0000-0002-6852-0235

Gulzhan Muratova [3] Seifullin Kazakh agrotechnical University, Departmetn of Physical and Mathematical Sciences of Educational program «General disciplines»., 010000 Zhenis avenue, 62., , Nur-Sultan, Kazakhstan https://orcid.org/0000-0001-7131-577X

Gulnar Kaltayeva [4] Seifullin Kazakh agrotechnical University, Department of pedagogical sciences of Educational program «Vocational Education». Address: Republic of 010000, Zhenis avenue, 62, Nur-Sultan, Kazakhstan https://orcid.org/0000-0003-3223-9617

Aliya Koxegen [5] Saken Seifullin Kazakh Agrotechnical University, Department of Information and Communication Technologies, Educational program ««General disciplines»., 010000 Shakarima Kudayberdiuly Avenue 25/1-119. Nur-Sultan, Kazakhstan. https://orcid.org/000-0002-8994-4096

Laila Smailova [6] S.Seifullin Kazakh Agro Technical University, Department of Educational program «General disciplines»., 010000, A. Moldagulova street 29g., Nur-Sultan, Kazakhstan, https://orcid.org/0000-0003-3355-7502

Suggested Citation:

Tashkenbayeva, Z., Abdyrov, A., Muratova, G., Kaltayeva, G., Koxegen, A. & Smailova, L., (2022). Scientific and methodological foundations for the organization of the educational process in the conditions of distance learning. *World Journal on Educational Technology: Current Issues*. *14*(3), 884-896 https://doi.org/10.18844/wjet.v14i3.7369

Received from January 21, 2022 revised from March 22, 2022; accepted from May 15, 2022
Selection and peer review under responsibility of Prof. Dr. Servet Bayram, Yeditepe University, Turkey.

Abstract

The purpose of this research; It is the evaluation of scientific and methodological foundations for the organization of the educational process in distance education conditions with student views. The research was based on the qualitative research method. The participant group of the research consists of 125 university students studying in various cities and universities of Kazakhstan. Researchers developed a semi-structured interview form to collect data. As a result of the research, the majority of the students stated that they found the learning systems in distance education useful, that using the learning

[*] ADDRESS OF CORRESPONDENCE: Zhuldyz Taskenbayeva , S. Seifullin Kazakh Agro Technical University, Educational program «General disciplines». Addres: 010000 Zhenis avenue, 62., Nur-Sultan, The Republic of Kazakhstan,
Email Address: Zh.tashkenbaeva@kazatu.kz

systems in distance education had a great effect on student success, and that they found the measurement and evaluation applications of the learning systems in distance education advantageous. In line with the results of the research, it is recommended to eliminate technical problems, increase the reliability of distance education models in measurement and evaluation, and organize motivation seminars for students.

Keywords: Distance education, methodological foundations in distance education, university students.

1. Introduction

Along with the innovations brought by technology, the understanding of education has completely changed, and educational resources have become more accessible, distributed and easily accessible with the developing technological opportunities. Thus, the first foundations of distance education were laid. Distance education, which has become widespread in order to meet educational opportunities and student needs without space and limitation, has become much more widespread in recent years and has become applied at all levels of education. Many educational institutions have started some courses through distance education, and then departments that offer diplomas only through distance education have been established. In field research, learning that can take place anywhere and at any time and remote access to information; It was emphasized that it was preferred by students in terms of providing flexible access in terms of time, space and speed (Chen & Tseng, 2012). Along with the Covid-19 pandemic process, the spread of the epidemic all over the world has made distance education practices mandatory.

1.2. Related research

With the rapid spread of the Covid-19 pandemic all over the world, continuing education activities on different platforms equipped with modern technology has become a priority task for educators. In this process, it was emphasized that it is necessary to act together in all countries around the world in order to produce high-tech, low-tech and non-technology solutions in order to ensure the stability of education and educators (Huang et al., 2020). istance learning; electronic teaching includes online teaching and computer-based teaching. Distance education is handled by dividing it into institution-based and formal education learning groups. Interactive communication systems in distance education; It is used to connect students with teachers and resources (Urdan & Weggen, 2000).

Students and teachers are far from each other, they connect with resources and interactive communication technologies; institution-based, structured distance education, which is also called formal education; constitutes an important part of education and training practices (Simonson et al., 2014). Many universities and schools in other levels of education in the world and in Kazakhstan have switched to distance education applications.

There are multiple models that are frequently used in distance education applications. The first of these is the technology acceptance model. It tries to explain the relationships between the technology acceptance model developed by Davis (1986) and used in many studies today, and the perception, attitude, intention and behavior of consumers so that they can accept modern technologies. In this model, variables such as perceived usefulness and perceived ease of use are defined as the factors affecting attitudes towards new technologies, intention to use new technologies, and behaviors. While the perceived usefulness of the variables in the model expresses the belief of people that their performance will increase when they use a new technology, the perceived ease of use indicates the thoughts of individuals using the new technology that it is beneficial to use this technology.

Another model is the information systems success model. The Information Systems Success Model was developed to explain behavioral patterns. This model provides a comprehensive framework for

measuring the performance of information systems. Six dimensions related to each other are defined in the model. These; system quality, information quality, service quality, usage, user satisfaction and net benefit. (DeLone and McLean, 2004). In addition to the technology acceptance model and the information systems success model; rational action theory, planned behavior theory, innovation diffusion theory, social cognitive theory, motivation model and finally technology acceptance and use theory are known as models and theories that are frequently encountered in the literature. According to the theory of rational action, an individual's behavior is influenced by his attitude towards the outcome of the behavior and the thoughts of other individuals in his social environment (Sheppard, 1988). Planned Behavior Theory is based on the idea that the individual behaves in a logical way, taking into account the mostly available information and taking into account the consequences of his actions. (Ajzen, 1985). In the innovation diffusion theory, people collect information about innovation and synthesize this information. After this process, a new perception about innovation is created. According to this perception, innovation is either accepted or rejected (Agarwal & Prasad, 1997).

Compeau and Higgins (1995) based Social Cognitive Theory, one of the most powerful theories in explaining the behavior of individuals, on the ability to use computers. Although this model is based on the use of computers, the structure of the model is generally suitable to be extended to explain information technology and its use. The Motivation Model, which supports the general motivation theory that tries to describe behavior in the field of psychology developed by Vallerand (1997), was used to explain the acceptance and use of new technologies. Finally, Venkatesh et al. (2003) developed the Unified Technology Acceptance and Use Theory in order to reinforce the previous studies on the technology acceptance model.

Based on the stated models, in this study, it was considered important to evaluate the scientific and methodological foundations for the organization of the education process in distance education conditions.

1.2. Related research

In his study, Sahu (2020) evaluated the problems of students studying at universities that were closed due to the Covid-19 pandemic and switched to distance education, the exams applied in distance education and the anxiety of students. In this study, it was stated that students' access to the Internet to receive education from the Internet at the same time around the world caused various technical failures and Internet infrastructure problems.

Wang et al. (2020) focused on distance education problems in their study during the pandemic process. In the research, it was stated that the problems experienced were mostly related to internet access. In addition, how the students were affected by the distance education process was also evaluated. It has been stated that students living in rural areas need the support of universities in order to receive education on equal terms with other students.

In the related literature, it is seen that there are studies in which evaluations are made on models in distance education applications. In his research, Dastjerdi (2016) evaluated the factors affecting the acceptance of information and communication technologies by students participating in distance education applications in terms of technology acceptance model. As a result, it has been determined that there are significant relationships between perceived usefulness and perceived ease of use and attitude, and between attitude and behavioral intention. Nagy (2018) evaluated satisfaction with education practices in line with the technology acceptance model in distance education. As a result of the findings obtained from the research, it was determined that the perceived benefit and attitude have an effect on the use, while the satisfaction is affected by the perceived ease of use and performance. In another study conducted by Ma, Andersson, and Streith (2005), it was determined that pre-service teachers' perceptions of the ease of use and usefulness of computers were highly influential on their intention to use the computer. Ozdogan and Berkant (2020) evaluated the distance education applied due to the pandemic from the perspective of student teachers and parents. As a

result of the research, it has been determined that distance education is independent of time and place, the convenience of being able to watch the lessons again, and the fact that it provides technology skills. Disadvantages in the research are listed as unwillingness of the students, unqualified assessment and evaluation, and technological problems.

Doghonadze et al. (2020) evaluated the experiences of adaptation during the transition to distance education with the opinions of teachers. Teachers from Azerbaijan, Georgia, Iraq, Nigeria, England and Ukraine participated in the study, and as a result of the study, it was revealed that there is no general preparedness for distance education and more work is needed to provide high quality distance education.

1.3. Purpose of the research

The purpose of this research; It is the evaluation of scientific and methodological foundations for the organization of the educational process in distance education conditions with student views. Accordingly, the research seeks answers to the following questions.

1. What are the views of university students on the usefulness of learning systems in distance education?

2. What are the views of university students on the effect of learning systems in distance education on learning?

3. What are the views of university students on the measurement and evaluation process of learning systems in distance education?

2. Method and Materials

This part of the research contains information about the method used in the research. Information such as the participant group of the research, data collection tools, data collection process and data analysis are also included in this section.

2.1. Research method

This research is a qualitative research. Qualitative research is a method that inquires about the problem it examines, interprets and tries to understand the form of the problem in its natural environment (Klenke, 2016). Qualitative research focuses on the details and depth of the information, rather than the generalization or universal dimension of the information, and the best way to express the studied phenomenon (Connelly, 2016). In this direction, the views of university students on the scientific and methodological foundations for the organization of the educational process in distance education conditions were evaluated in accordance with the in-depth qualitative research method.

2.2. Participants

The participant group of the research consists of university students studying in various cities and universities of Kazakhstan. University students participating in the research were selected on a voluntary basis. Demographic characteristics of university students are given in Table 1 and Table 2.

Table 1. Information on the faculties and classes of university students

Faculty	**Sınıf**				**Sum**
	1.Class	2.Class	3.Class	4.Class	
Engineering Faculty	3	21	10	16	50
Faculty of Health Sciences	-	6	3	6	15
Faculty of Education	2	8	4	13	27
Faculty of Social Sciences	2	9	22	-	33
Sum	7	44	39	35	125

Table 1 contains information about the faculty and class distributions of the university students participating in the research. Fifty of the students participating in the research are from the faculty of engineering, 15 of them are from the faculty of health sciences, 27 are from the faculty of education and 33 are from the faculty of social sciences. 7 of the students participating in the research study in the 1st grade, 44 in the 2nd grade, 39 in the 3rd grade and 35 in the 4th grade.

Table 2. Age and gender distribution of university students

Age	**Gender**		**Sum**
	Female	Male	
16-18 Ages	4	2	6
19-21 Ages	51	26	77
22-24 Ages	15	21	36
24 Ages and over	1	5	6
Sum	71	54	125

In Table 2, demographic information regarding the age and gender distribution of university students participating in the research is given. 6 of the students are in the age range of 16-18, 77 of them are in the age range of 19-21, 36 of them are in the age range of 22-24, and 6 of them are in the age range of 24 and over. Of the students participating in the research, 71 were female and 54 were male. A total of 125 university students participated in the research.

2.3. Data collection tools

Researchers developed a semi-structured interview form to collect data. During the development of the semi-structured interview form, the relevant researches in the field were examined, and accordingly, interview questions on scientific and methodological foundations were prepared for the organization of the education process in distance education conditions. The prepared interview questions were presented to 2 experts for their opinions. The semi-structured interview form, which was rearranged in line with the opinions of the experts, was applied to 5 university students. University students participating in the pilot study are not included in the study group of the research. During the pilot application, the students' understanding of the questions in the semi-structured interview form was tested. It was determined that the students found the questions understandable and the semi-structured interview form was made ready for application. The semi-structured interview form used in the research is given in Appendix-1.

2.4. Data collection process

In the process of collecting the research data, the university students who formed the study group of the research were reached via e-mail. Semi-structured interview forms were converted into Google form format and delivered to the students. In addition, the content, method, purpose and ethical principles of the research were explained in the e-mail. Semi-structured interview forms of 141 students who returned to the researchers were examined by the researchers. Since deficiencies were detected in the forms of 16 students, these students were excluded from the study. The data collection process took approximately 1 month.

2.5. Data collection analysis

Content analysis method, which is frequently used in qualitative research, was used in the analysis of the research data. Content analysis requires a more detailed examination of the collected data and reaching the concepts, categories and themes that explain this data. Content analysis focuses on collected data; Codes are extracted from the events and facts that are frequently repeated in the data set or that the participant emphasizes heavily. You can go to categories from codes and to themes from categories. In short, data (codes) that are found to be similar and related to each other are

interpreted by bringing them together within the framework of certain concepts (categories) and themes. In content analysis, the content of participants' views is systematically separated (Bengtsson, 2016). Based on this, the answers given by the university students to the semi-structured interview form were divided into themes, codes and categories by content analysis.

3. Results

In this part of the research, the answers given by the students to the semi-structured interview form were evaluated on the basis of confidentiality. The names of the researchers were kept confidential and given by coding method. Code matching was made for each of the students as “S1, S2, S3…”. The answers given by the students to the semi-structured interview form were given by creating frequency and percentage tables, and the teacher's opinions were given below the tables.

In Table 3, the question “Do you find learning systems in distance education useful?” Their answers to the question were evaluated.

Table 3. Opinions of students about finding learning systems useful in distance education

Theme	Category	F	%
I find it very useful	Ease of learning Ease of use	9	7,2
I find it useful	Ability to learn over time Usability over time	66	52,8
I'm undecided	Learning is neither easy nor difficult Neither easy nor hard to use	31	24,8
I find it useless	Learning disabilities Problems in use	13	10,4
I find it very useless	Difficulty in learning and use	6	4,8
Sum		125	100

In Table 3, the evaluations of the students who participated in the research regarding whether they find learning systems useful in distance education are given. 7.2% of the students stated that they found it very useful, 52.8% found it useful, 24.8% found it undecided, 10.4% found it useless, and 4.8% found it very useless. Teachers expressed ease of learning and ease of use as reasons for finding learning systems very useful in distance education. Learning over time and being able to use it over time were stated as the reasons for teachers to find learning systems useful in distance education, while learning neither easy nor difficult and using neither easy nor difficult were stated as reasons for indecision. While they found the learning systems useless due to the problems in learning and usage, they found it very useless due to the difficulties in learning and use.

The opinions of some university students who participated in the research;

S29: The thing that bothered me the most during the transition to distance education was whether I could get used to these systems. After the course process started, I saw that the technology support courses were both easy to learn and comfortable to use.

S41: I find learning systems useful. It takes some time to learn, but once you solve it, you can use it easily.

S3: I can't say it's easy or hard. There are some difficulties while learning and using, but these can be eliminated. I must say I am undecided.

S88: The system is a bit confused. For this reason, I was constantly confused about what to do and how to learn. There is always a problem with the system. That's why I find it useless.

S114: I don't like learning systems. I find technology-based learning platforms of online education both very difficult and useless.

In Table 4, the university students participating in the research asked the question "Do you think that using the learning systems in distance education has an effect on the success of the student?" Their answers to the question were evaluated.

Table 4. Students' views on the effect of using learning systems well in distance education on student achievement

Theme	Category	F	%
I find it very effective	Increasing success Increasing motivation to learn	68	54,4
I find it effective	Supporting success Supporting learning motivation	27	21,6
I'm undecided	Not influencing success	11	8,8
I find it ineffective	Negative impact on success Negatively affecting learning motivation	17	13,6
I find it very ineffective.	Cause failure	2	1,6
Sum		125	100

In Table 4, the views of university students participating in the research on the effect of using learning systems in distance education well on success are evaluated. 54.4% of the students answered that they find it very effective in terms of increasing success and increasing learning motivation. 21.6% of the students stated that using learning systems well in distance education is effective on success, on the grounds of supporting success and supporting learning motivation. 8.8% of the students stated that they were undecided by stating that good use of learning systems did not affect success. 13.6% of the students stated that they were undecided about the effect of their learning system on success, due to its negative impact on success and negative impact on learning motivation. Finally, 1.6% of the students stated that learning systems are very ineffective on success because they cause failure.

The opinions of some university students who participated in the research;

S38: I think the more you know about technology, the greater the impact on success. I attend classes with interest and motivation. That's why I find it very effective.

S121: I find it effective. I think it both supports success and the better you use technology, the more enthusiastic you become.

S8: Learning systems in distance education have a somewhat complex structure. Teaching online is not like teaching in a classroom environment. I don't think it has much of an impact on success. But it also has its positive and negative sides. That's why I mean I'm undecided.

S71: Learning systems in distance education have a negative effect on success. It also makes me reluctant. Participating in classes does not create motivation to listen to the lesson.

S13: I fail on these systems. In my opinion, no alternative form of education can replace face-to-face education no matter what. For this reason, I find it very ineffective.

The question "Do you find the learning systems in distance education advantageous in the assessment and evaluation process?" of the university students participating in the research in Table 5 Their answers to the question were evaluated.

Table 5. Evaluations of students regarding the assessment and evaluation process of learning systems in distance education

Theme	Category	F	%
I find it very advantageous	Ease in exams Solidarity between students during the exam	42	33,6
I find it advantageous	Some comfort during the exam Exam motivation at home	36	28,8
I'm undecided	Equal conditions with face-to-face education Variation by course	21	16,8
I find it disadvantageous	Availability for technical problems Lack of exam atmosphere	18	14,4
I find it very disadvantageous	Unfair exam environment	8	6,4
Sum		125	100

In Table 5, the evaluations of the students participating in the research regarding the assessment and evaluation process of learning systems in distance education are given. 33.6% of the students answered that I find it very advantageous, 28.8% find it advantageous, 16.8% undecided, 14.4% find it disadvantageous and 6.4% find it very disadvantageous. The reason why the convenience in the exams and the solidarity between the students during the exam is very advantageous, the reason why the exam motivation is found to be partially comfortable during the exam and the exam motivation in the home environment, equal conditions with face-to-face education and the variability according to the course are stated as the reason for being undecided. Convenience to technical problems and lack of exam atmosphere were stated as disadvantageous and unfair exam environment as very disadvantageous.

The opinions of some university students who participated in the research;

S66: To be frank, we do the exams in cooperation with friends. Both the exams are easier and we solve the questions together in the exams. This is a very important advantage.

S50: Since the exam is in the home environment, I think it is very nice to take the exam in a comfortable and motivated way in one's own room. That's why I find it advantageous.

S4: It changes from lesson to lesson. It may be advantageous for some courses and disadvantageous for some courses. The same is true for exams held in the classroom at school. That being the case, I was a little undecided.

S97: I find it disadvantageous. Because during the exam, I am constantly worried that the internet will be cut off, there will be a power outage or the system will freeze and my exam will be unfinished. Unfortunately, taking an exam in the classroom is not like experiencing that excitement.

S110: I know that students cheat in exams. I don't do it, but many students I know either take the exam with their friends or look for answers to the questions in the books during the exam. I think this is extremely unfair. Students who don't deserve it get high grades.

4. Discussion

The majority of the students participating in the research stated that they found the learning systems useful in distance education. Mitchell et al. (2005) conducted a study on student satisfaction with distance education experiences. In their research, they concluded that student satisfaction will provide competence in the use of learning systems in distance education. Freeze et al. (2010) evaluated students' views on distance education in their study and revealed that the quality of learning systems has a positive effect on system use. In addition, as a result of the research, it was concluded that using the system well is directly proportional to the system satisfaction. Bove and Conklin (2019) conducted a study on the technology acceptance status of university students. The importance of internet and technology experience in distance education was emphasized in the research. In addition, as a result of the research, it was determined that technology anxiety negatively affects student achievement.

The majority of the students participating in the research stated that using the learning systems well in distance education has a great impact on student success. In a similar study, Lim (2001) stated that having computer knowledge has a positive effect on student satisfaction and success. The effect of web-based distance education satisfaction on learning was emphasized in the research. In their study, Allen et al. (2002) concluded that there was no difference in the degree of satisfaction between students' distance education practices and face-to-face education practices. This means that students find distance education as satisfying as face-to-face education.

The students participating in the research expressed their views on the measurement and evaluation process of learning systems in distance education. The majority of the students stated that they found the measurement and evaluation applications of learning systems in distance education very advantageous and advantageous. In his study, Sorensen (2013) examined student attitudes towards online exams made through learning systems in distance education. As a result of the research, it was revealed that the students exhibited a positive attitude towards online assessment.

5. Conclusion

Both technological developments and the Covid-19 pandemic process have made distant ethics practices mandatory all over the world. The effective use of education systems by students in distance education conditions and their impact on learning have also taken place in education as an important agenda. There are multiple models that are frequently used in distance education applications. The common feature of these models is that they focus on the use of technology and the effect of learning models on success. From this point of view, scientific and methodological foundations for the organization of the educational process in distance education conditions were evaluated with the views of university students. As a result of the

research, the majority of the students stated that they found the learning systems in distance education useful, and that using the learning systems in distance education had a great effect on student success. In addition, university students participating in the research stated that they found the measurement and evaluation applications of learning systems in distance education advantageous. This situation reveals the conclusion that distance education applications are found positive by students in terms of scientific and methodological aspects. "AP09260956 Scientific and methodological foundations of the organization of the educational process of distance learning at the agricultural research university".

6. Recommendations

The results obtained from the research show that the majority of university students find learning systems useful in distance education. However, some of the students stated that these systems are useless due to internet outages and technical problems. In order to eliminate these problems, it is necessary to improve the internet infrastructures and to take the necessary interventions to eliminate the technical problems in learning systems. It is seen that some university students express their opinion that when using learning systems in distance education, it has a negative effect on success and reduces motivation. It is of great importance for universities to organize seminars at regular intervals to train learning systems and increase student motivation. In addition, it is seen that one of the reasons why students find distance education exams advantageous is the possibility of cheating. Learning systems and questions asked in exams should be arranged in a way that prevents students from cheating.

REFERENCES

Agarwal, R., & Prasad, J. (1998). A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information systems research*, *9*(2), 204-215. https://doi.org/10.1287/isre.9.2.204

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In *Action control* (pp. 11-39). Springer, Berlin, Heidelberg. https://link.springer.com/chapter/10.1007/978-3-642-69746-3_2

Allen, M., Bourhis, J., Burrell, N., & Mabry, E. (2002). Comparing student satisfaction with distance education to traditional classrooms in higher education: A meta-analysis. *The American Journal of Distance Education*, *16*(2), 83-97. https://doi.org/10.1207/S15389286AJDE1602_3

Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus open*, *2*, 8-14. https://doi.org/10.1016/j.npls.2016.01.001

Bove, L. A., & Conklin, S. (2019). Using the technology adoption model to assess faculty comfort with the Learning Management System. *Online Journal of Distance Learning Administration*, *22*(3), n3. https://eric.ed.gov/?id=EJ1228869

Chen, H. R., & Tseng, H. F. (2012). Factors that influence acceptance of web-based e-learning systems for the in-service education of junior high school teachers in Taiwan. *Evaluation and program planning*, *35*(3), 398-406. https://doi.org/10.1016/j.evalprogplan.2011.11.007

Compeau, D. R., & Higgins, C. A. (1995). Application of social cognitive theory to training for computer skills. *Information systems research*, *6*(2), 118-143. https://doi.org/10.1287/isre.6.2.118

Connelly, L. M. (2016). Trustworthiness in qualitative research. *Medsurg Nursing*, *25*(6), 435. https://www.proquest.com/openview/44ffecf38cc6b67451f32f6f96a40c78/1?cbl=30764&pq-origsite=gscholar

Dastjerdi, N. B. (2016). Factors Affecting ICT Adoption among Distance Education Students Based on the Technology Acceptance Model--A Case Study at a Distance Education University in Iran. *International Education Studies*, *9*(2), 73-80. https://eric.ed.gov/?id=EJ1090202

Davis Jr, F. D. (1986). *A technology acceptance model for empirically testing new end-user information systems: theory and results* (Doctoral dissertation, Massachusetts Institute of Technology). https://www.researchgate.net/profile/Fred-Davis-3/publication/35465050_A_Technology_Acceptance_Model_for_Empirically_Testing_New_End-User_Information_Systems/links/0c960519fbaddf3ba7000000/A-Technology-Acceptance-Model-for-Empirically-Testing-New-End-User-Information-Systems.pdf

DeLone, W. H., & McLean, E. R. (2004). Measuring e-commerce success: Applying the DeLone & McLean information systems success model. *International Journal of electronic commerce*, *9*(1), 31-47. https://doi.org/10.1080/10864415.2004.11044317

Doghonadze, N., Aliyev, A., Halawachy, H., Knodel, L., & Adedoyin, A. S. (2020). The degree of readiness to total distance learning in the face of COVID-19-teachers' view (Case of Azerbaijan, Georgia, Iraq, Nigeria, UK and Ukraine). *Journal of Education in Black Sea Region*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3904094

Freeze, R. D., Alshare, K. A., Lane, P. L., & Wen, H. J. (2010). IS success model in e-learning context based on students' perceptions. *Journal of Information systems education*, *21*(2), 173-184. Freeze, R. D., Alshare, K. A., Lane, P. L., & Wen, H. J. (2010). IS success model in e-learning context based on students' perceptions. *Journal of Information systems education*, *21*(2), 173-184.

Huang, R. H., Liu, D. J., Tlili, A., Yang, J. F., & Wang, H. H. (2020). Handbook on facilitating flexible learning during educational disruption: The Chinese experience in maintaining undisrupted learning in COVID-19 outbreak. *Beijing: Smart Learning Institute of Beijing Normal University*, *46*. https://iite.unesco.org/wp-content/uploads/2020/03/Handbook-on-Facilitating-Flexible-Learning-in-COVID-19-Outbreak-SLIBNU-V1.2-20200315.pdf

Klenke, K. (2016). Qualitative research as method. In *Qualitative research in the study of leadership*. Emerald Group Publishing Limited. https://doi.org/10.1108/978-1-78560-651-920152003

Lim, C. K. (2001). Computer self-efficacy, academic self-concept, and other predictors of satisfaction and future participation of adult distance learners. *American Journal of Distance Education*, *15*(2), 41-51. https://doi.org/10.1080/08923640109527083

Ma, W. W. K., Andersson, R., & Streith, K. O. (2005). Examining user acceptance of computer technology: An empirical study of student teachers. *Journal of computer assisted learning*, *21*(6), 387-395. https://doi.org/10.1111/j.1365-2729.2005.00145.x

Mitchell, T. J., Chen, S. Y., & Macredie, R. D. (2005). The relationship between web enjoyment and student perceptions and learning using a web-based tutorial. *Learning, Media and Technology*, *30*(1), 27-40. https://doi.org/10.1080/13581650500075546

Nagy, J. T. (2018). Evaluation of online video usage and learning satisfaction: An extension of the technology acceptance model. *International Review of Research in Open and Distributed Learning*, *19*(1). https://doi.org/10.19173/irrodl.v19i1.2886

Ozdogan, A. C., & Berkant, H. G. (2020). Examination of stakeholder views on distance education during the Covid-19 pandemic period. *Journal of National Education,* *49*(1), 13-43. https://dergipark.org.tr/en/pub/milliegitim/issue/58895/788118

Sahu, P. (2020). Closure of universities due to coronavirus disease 2019 (COVID-19): impact on education and mental health of students and academic staff. *Cureus*, *12*(4). https://www.cureus.com/articles/30110

Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. *Journal of consumer research*, *15*(3), 325-343. https://doi.org/10.1086/209170

Simonson, M., Smaldino, S., & Zvacek, S. M. (Eds.). (2014). *Teaching and Learning at a Distance: Foundations of Distance Education*. IAP.

https://books.google.com.tr/books?hl=tr&lr=&id=qgUoDwAAQBAJ&oi=fnd&pg=PP1&ots=SQYjyLCBd4&sig=gfU8wJZ-kXqgWzfNXwGD1AAENgw&redir_esc=y#v=onepage&q&f=false

Sorensen, E. (2013). Implementation and student perceptions of e-assessment in a Chemical Engineering module. *European Journal of Engineering Education*, *38*(2), 172-185. https://doi.org/10.1080/03043797.2012.760533

Urdan, T. A., & Weggen, C. C. (2000). Corporate elearning: Exploring a new frontier. http://papers.cumincad.org/cgi-bin/works/Show&_id=caadria2010_015/paper/2c7d

Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. In *Advances in experimental social psychology* (Vol. 29, pp. 271-360). Academic Press. https://doi.org/10.1016/S0065-2601(08)60019-2

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478. https://doi.org/10.2307/30036540

Wang, C., Cheng, Z., Yue, X. G., & McAleer, M. (2020). Risk management of COVID-19 by universities in China. *Journal of Risk and Financial Management*, *13*(2), 36. https://www.mdpi.com/1911-8074/13/2/36

Annex 1. Semi-Structured Interview Form

Your gender:

Your age:

Faculty where you studied:

Class you're studying:

Question 1. Do you find learning systems useful in distance education?

Comment:……

……

Tick a box:

I find it very useful	I find it useful	I'm undecided	I find it useless	I find it very useless
( )	( )	( )	( )	( )

Question 2. Do you think that using learning systems well in distance education has an effect on student success?

Comment:……

……

Tick a box:

I find it very effective	I find it effective	I'm undecided	I find it ineffective	I don't find it very ineffective.
( )	( )	( )	( )	( )

Question 3. Do you find the learning systems in distance education advantageous in the assessment and evaluation process?

Comment:……

……

Tick a box:

I find it very advantageous	I find it advantageous	I'm undecided	I find it disadvantageous	I do not find it very disadvantageous
( )	( )	( )	( )	( )