Determining University Students' Availability on Zoom

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Abstract—The general purpose of this research is to determine the readiness of university students studying in the computer engineering programme on the Zoom application. The quantitative research method was used in the study. The research was carried out in the fall semester of 2020-2021. The working group consists of university students studying in the computer engineering programme of various universities in Kosovo and Russian Federation. 420 university students participated in the research. For the research, university students were given 5 weeks of online training. A measurement tool called 'distance education applications' developed by the researchers was applied to the university students. The data were shared with university students on the Internet with an online questionnaire and their participation was ensured and collected. The collected data were analysed using the SPSS programme. It was concluded that the readiness status of the university students showed positive results, and the live lesson status of the female university students was higher than the male students. In addition, it was concluded that they got used to the system they used in the common lessons before, and that the training on this system affected them positively.

Keywords—computer engineer, Zoom application, distance education

1   Introduction

Distance education systems are frequently preferred by people who are not physically present at the university due to the workplace, working conditions or family responsibilities of people or students, who need space and time flexibility, and who want to continue their professional development. It is an option that comes to the forefront with the support of students, people in education, the opportunity for self-development to people of all ages and the equality of opportunity it offers [18]. However, with the COVID-19 epidemic that emerged in December 2019, the educational environment has changed significantly, as in all countries, all over the world, and it is seen that transitions to emergency distance education have begun to occur all over the world at an

unpredictable speed [15]. It has been observed that face-to-face education has been suspended due to this epidemic, which affects all students in the world, and it is seen that distance education, which is an answer, is preferred in order to continue education [7]. In the education system, for more than a year, it has been seen that distance education has continued at all education levels. Also, while evaluating the current COVID-19 distance education process, it is known that it is useful to distinguish this process from distance education activities, which are created as a result of long planning processes and require a special education design or instructional design process [8]. The combination of modern technologies and education has led to a trend that seems to be permanent in the field of education and understanding. While the virtual world develops rapidly, individuals also need to keep up with this change [13].

Along with the educational needs and distance education methods of university students, the understanding of teacher education and teaching approaches is also changing [10] – changing education methods in the 21st century, emergency education plans arising from compulsory situations, digital learning approaches etc. [4]. It is known that these practices lead to changes in the expectations and educational perspectives of teachers and university students [12]. It is also possible to carry out the distance education applications of the teachers remotely with the computer within this process. The teacher plans and maintains the dynamics of distance education independently of the place. In these applications, which perhaps point to the general vision of the next century, the candidates need to know how to use common computing technologies and be prepared for different learning–teaching scenarios [5]. Distance education is known as organising and transferring teaching–learning activities to electronic environment without the need for the teacher and student to be physically present in the same indoor area [2]. It is known that they make use of multimedia presentation systems such as email, virtual conferences and the Internet in distance education. With these materials and presentation systems, teachers and students can send questions and answers to each other [14]. With the COVID-19 pandemic, it is seen that distance education is now an indispensable part of life. All countries have decided that it is not right for schools, which is one of the places with the highest crowding, to provide face-to-face education and have switched to distance education at different stages and different levels. It is known that computers used in education and its use on distance education through computers have been discussed for many years as a previously known system of the COVID-19 pandemic [20]. In this study, it was aimed to determine the readiness status of university students studying in the computer engineering programme on the Zoom application. In this way, it is thought that there will be an increase in the knowledge level of university students about distance education systems.

The spread of distance education by showing itself in many fields and subjects has also affected formal education. It is thought that the use of technological developments will provide versatility to Zoom and training on other platforms [19]. The fact that any subject desired to be learned can be continued through live lessons without going to school or an institution provides many positive effects in formal education. As a result of the researches, a huge amount of data shows that distance education supports both the student and the educator. Other parts of this research will continue according to the purpose.

1.1 Related studies

In the scientific research of Aydın et al. (2021), it was aimed to describe the current qualifications of the distance instructors in the COVID-19 pandemic process; as a result, the qualifications that the distance instructors should have were determined and that these qualifications should be given to the distance education instructors within the framework of these qualifications were expressed [1]. In addition, they stated that the content and scope of seminars and awareness trainings are guiding for researchers, instructional designers and administrators. Their infrastructure and technology use cases should not be forgotten.

Suadi et al. (2021), in their study, stated that it is a suitable platform to deliver course materials to the instructors, and emphasised that the Zoom platform is suitable for the implementation of live lessons so that students can attend classes remotely and at the same time act in accordance with the COVID-19 health protocol [17]. As a result, they stated that the opinions of the university students about the Zoom application were positive and it shaped their work in this way. While it is seen that this research has a positive effect on Zoom, it is known that the most important situation is that university students do not fall behind in their education.

Boerngen et al. (2020) stated in their study that distance education is formed to maintain personal teaching styles by being aware of students' needs; they also said that it is important to evaluate content delivery as a function of rural broadband availability [3]. However, they emphasised that the internet infrastructure should be adjusted well; in this context, it is seen once again that the Internet infrastructure should be adjusted and planned in the best way for the courses taught on the Zoom platform and other platforms, regionally and in other parts.

In light of the related researches, it can be said that the programme and the Internet infrastructure used should be adjusted in the best way in order for university students to receive better education. It is thought that the studies in the related research section will benefit the research.

1.2 Purpose of the research

The general purpose of this research is to determine the readiness of university students studying in the computer engineering programme on the Zoom application. In order to reach the problem situation in the research, answers to the following questions were sought:

1. What is the computer usage status of university students?
2. What is the smartphone usage status of university students?
3. Is there a significant difference in the distance education attitudes of university students according to the gender variable?
4. What are the opinions of university students about the Zoom application?
5. Is there a significant difference in the live lesson status of the university students according to the gender variables?

2   Method

In this section, the research method, study group, type and source of data, data collection tools and statistics used in the research are discussed.

2.1   Research model

In this section, the research model is mentioned; the research method used in the research is the descriptive method or the quantitative descriptive method. The main purpose of the research is to present a direct and simple description of any phenomenon [11]. In this research, the determination of the readiness status of university students on the Zoom application by means of scanning method were described according to the variables of gender, educational status and duration of education.

2.2   Working group/participants

The research was carried out on a voluntary basis and on 420 university students who continue their education in universities in Kosovo and Russian Federation in the 2020–2021 fall academic year and who voluntarily agreed to participate in the programme. The measurement tool used in the research was applied to the 420 university students and accepted.

Gender. In this section, the distribution of university students according to their gender is provided in Table 1.

Table 1. Distribution of university students by gender

Gender	Male		Female	
	F	*%*	*F*	*&*
Variable	162	38.57	258	61.43

As can be seen in Table 1, data were collected according to the gender variable of the university students participating in the research, and it is seen that 61.43% (258 people) are female students and 38.57% (162 people) are male students. In the gender section, the findings reflect the actual gender distribution.

Computer use cases. In this section, the computer usage status of university students in 1 day was asked and analysed, and detailed information is provided in Table 2.

Table 2. Computer usage status of university students

Computer Use Cases	F	%
1–2 hours	102	24.29
3–4 hours	153	36.43
4 hours or more	165	39.28
Total	420	100

As can be seen in Table 2, the frequency of the computer usage status of the university students during the day was examined and the information is provided. While 36.43% (153 people) stated that it was 3–4 hours, 24.29% (102 people) stated that it was 1–2 hours. In the section of computer usage situations during the day, the findings reflect the actual distribution.

Age status. In this section, the age status of the university students in the study group was examined and detailed information is provided in Table 3.

Table 3. Distribution of university students by age

Age Status	F	%
18–20	223	53.09
20–22	90	21.43
23–24	85	20.24
24 and above	22	5.24
Total	420	100

As can be seen in Table 3, the distribution of university students in the study group according to their age was discussed and the relevant information according to the age scale is provided. In this context, when Table 3 is examined, the highest (53.09%, 223 people) is in the 18–20 age group, 21.43% (90 people) is in the 20–22 age group, 20.24% (85 people) is in the 23–24 age group and 5.24% (22 people) is in the age group of 24 and above. In the age status section, the findings reflect the actual distribution.

2.3 Data collection tools

The data collection tool used in the research was created by the researchers; the data collection tool was examined and simplified by experts in the field of distance education. The personal information form called 'distance education practices' measurement tool developed by the researchers was used. The content validity of the developed measurement tool was examined by experts, five professors working in the field of distance education and computer science, and unnecessary items were removed from the measurement tool and rearranged.

Personal information form (demographic data). In the personal information form, information such as age, gender, computer use cases, smartphone use cases and Google Meet usage cases are included.

Distance education applications data collection tool. 16 items of the measurement tool consisting of 24 items were used and 8 items were extracted from the measurement tool, thanks to experts' opinions. The opinions of computer engineer candidates were sought on two factorial dimensions: 'predisposition to distance education applications' and 'live lessons' of university students. Cronbach's alpha reliability coefficient of the measurement tool as a whole was calculated as 0.91. The measuring points were 'strongly disagree' (1), 'disagree' (2), 'undecided' (3), 'agree' (4) and 'strongly agree' (5). The measurement tool was also collected from university students in the form of an online environment.

2.4   Application

The research was conducted with the help of universities in the Kosovo region and Russian Federation. An online education environment was prepared for 420 volunteer university students continuing their education in Kosovo and some Russian Federation universities and it was organised by showing it to experts in the field of education environment. Within the 4-week training programme, 'distance education', 'distance education systems', 'distance education practices' etc. were provided to the candidates of the computer engineer programme. Information such as online education was also given to university students in the form of online education, and performance assignments were given and requested from university students every week on this subject; the homework was prepared online in order to ensure that the subject will be better reinforced. After 5 weeks of education, the measurement tool and information form were applied to the university students and the data are given in the findings section in tables. The training is determined by five sections through the Zoom application programme, which is preferred by most universities, and each section is distributed over the weeks to be limited to a maximum of 90 university students; each training programme was processed in a total of 55 minutes, 40 minutes of which are training and 15 minutes of which are questions and answers. In the case of online education, on the other hand, university students were expected to participate in the training by using devices such as tablets, phones and computers with videos and microphones. The measurement tool applied to university students was collected by means of an online questionnaire and transferred to the SPSS programme after coding in the computing software environment.

2.5   Analysis of data

The data obtained from university students were analysed in the Statistics programme using frequency (f), percentage (%), mean (M), standard deviation (SD) and *t*-test. The data obtained from the programme are given in the findings section accompanied by tables and comments.

3   Results

In this section, the findings obtained as a result of the analysis of the data obtained in the research are added in the tables, and various interpretations are given in line with the findings.

3.1   Smartphone usage cases of university students

In this section, the smartphone usage status of university students is examined and the relevant information is provided in Table 4.

Table 4. Smartphone usage status of university students

Smartphone Usage Cases	F	%
1–2 hours	120	28.57
3–4 hours	140	33.33
4 hours or more	160	38.10
Total	420	100

As can be seen in Table 4, the study group of university students' use of smartphones during the day was examined. While the 4 hours or more group is seen having the highest value for using smartphones during the day, the lowest value is stated as 1–2 hours. In this context, Table 4 shows that 120 students use it for '1–2' hours and 140 students use it for '3–4' hours. 160 students used smartphones for 'over 4 hours'. It is important for students to use their smartphones for their education.

3.2 Distance education attitudes of university students by gender variable

When Table 5 is examined, the distance education attitudes of university students according to gender are examined and it was seen that there was a significant difference [$t(420) = -1.550$, $p < .05$]. When the distance education attitudes of university students are examined, it is seen that female students have a higher distance education attitude score ($M = 3.80$), while male students have a lower distance education attitude score ($M = 3.20$). In this context, in this study, it was found that female students had higher distance education attitudes than male students.

Table 5. Distance education attitudes of university students by gender

University students	Gender	N	M	SS	sd	t	p
Distance Education Attitudes	Male	162	3.20	.118	420	-1.550	.124[*]
	Female	258	3.80	.136			

3.3 Views of university students on Zoom application

When Table 6 is examined, it is seen that university students expressed their views on the Zoom application; although it can be seen that each answer has a different meaning, it can be said based on Table 6 that university students have a higher opinion of the Zoom application after education. 'I find it useful' and 'Spending time in Zoom application gives me pleasure' had a mean of $M = 4.71$. In addition, one of the most prominent statements of the research 'I can chat with my friends from the chat section in the Zoom application' had a mean of $M = 4.69$. While it was seen that the students' opinions about the Zoom application were quite high, another finding showed that 'I believe that I use the zoom application more effectively than other applications' had a mean of $M = 4.60$. Other findings were 'I can access lecture presentations via Zoom whenever I want' and 'I know how to open my camera in Zoom application'.

Table 6. Views of university students on the Zoom application

No	Distance Education System Opinions	M	S
1	I can use Zoom app easily	4.56	0.39
2	Spending time in Zoom app gives me pleasure	4.71	0.36
3	I can easily use live course materials in the live lesson in the Zoom application.	4.57	0.409
4	I know how to turn on my microphone in the Zoom app	4.15	0.75
5	I know how to open my camera in Zoom app	4.59	0.51
6	Raising hands in the Zoom application increases my interest in the lesson	4.46	0.70
7	I like the whiteboard app in Zoom app	4.45	0.60
8	Changing the image background in the Zoom application increases my sympathy for the application.	4.56	0.50
9	I can chat with my friends from the chat section in the Zoom application.	4.69	0.42
10	I can access lecture presentations at any time via Zoom.	4.59	0.39
11	I find grouping on Zoom effective and useful.	4.71	0.45
12	I do not experience any internet disconnection while using the Zoom application.	4.41	0.66
13	Being a moderator in the Zoom application increases my interest in the lesson.	4.41	0.59
14	I believe that I use the Zoom application more effectively than other applications.	4.60	0.54
15	Thanks to the Zoom application, I learned my hands-on lessons better.	4.42	0.63
16	I would like to see the Zoom application in my other lessons.	4.57	0.56
	Overall Average	4.40	0.61

When Table 6 is examined, it was found that university students participated in the Zoom application by voice; they did not experience any difficulties during the Zoom application; they wanted to see the Zoom application in their other lessons; and gave many other positive answers. In this context, it can be said based on the findings that the opinions of university students about the Zoom application are positive, since all the values in Table 6 have a positive meaning.

3.4 Scores of university students' live course situations according to the gender variable

When Table 7 is examined, live lesson plans of university students according to the gender variable were examined and it was seen that there was a significant difference $[t(420)= -1.561, p<.05]$. When the scores of the university students for the live lesson are examined, it is seen that the average score of the answers given by the female students to the live lesson is M=3.75, while the male students have the live lesson points (M=3.22). In this context, in this study, it was found that female students had higher distance education scores than male students.

Table 7. Scores of university students' live course situations according to gender

University students	Gender	N	M	SS	sd	t	p
Live Lesson	Male	162	3.22	.120	420	-1.561	.125[*]
	Female	258	3.75	.140			

4   Discussion

Smyth (2021) aimed to examine the readiness for online learning among university students; as a result, it was concluded that female students were more satisfied with distance education learning than male students [16]. When this research was combined with the result of the research, it was found that female students had higher results on the distance education attitudes of university students. Elgohary (2021) aimed to make a comparative study between the impact of the COVID-19 pandemic on the Middle East countries and the information technology industry in Egypt, by reviewing the information technology achievements in Middle Eastern countries and Egypt [6]. They concluded that Turkey focused on the impact of the Middle East on the use of information technology in various sectors in terms of the leading digital countries of the Middle East (Saudi Arabia and UAE) and Egypt, and that informatics and distance education are very important. While emphasising the importance of information technologies and information technologies, it has been concluded that more students use computers during the day. In this context, it can be said in the discussion part of the research that information technologies and distance education are important for future research.

Maphalala, Mkhasibe and Mncub (2021), in their study, aimed to determine how online learning supports self-learning in a South African university through the zoom application; as a result, it was found that the majority of pre-service teachers faced various difficulties while adopting online learning and adopted distance education in this context; when combined with the result of the study, it was concluded that the students liked the lessons conducted over Zoom and their perceptions were high [9]. It is known that distance education systems are always with the students in their education, in this context, it can be said that there is a positive change in the learning of university students when the infrastructure is well prepared for distance education, and it is thought that this study, which is carried out in Kosovo and Russian Federation, in different countries, will contribute to the research and literature.

5   Conclusion

When the studies in the literature are examined, the first thing that catches the eye is the number of participants. The number of participants in the research is important because it directly affects the problem situation of the research. It is also known that the importance of computer use is very effective today; it is also known that computer use is directly proportional to education and it is important in improving one's self. While it can be said that the number of people in the study is quite high at 165, it has been determined that most of the students use computers during the day. Another result of

the research is the level of the use of smartphones during the day; it is thought that using this technology for science will always benefit the person while we carry the technology in our pockets. In this context, the study group of university students' use of smartphones during the day was examined and it was concluded that the group showed the highest value for 4 hours or more.

When another result of the research is considered, the findings on the distance education attitudes of university students according to the gender variable were examined; as a result, it was concluded that the distance education attitudes of female students were higher than male students, showing that that they use distance education systems very well. When another result is considered, students' opinions about Zoom are discussed; especially those expressing opinions and calculating values related to the problem situation given in the research. It can be concluded that the participants enjoyed spending time in the Zoom application; they could chat with their friends from the chat section in the Zoom application; they used the Zoom application more effectively than other applications; and they could access the lesson presentations via Zoom whenever they wanted. In this context, it has been concluded that university students have positive opinions about the Zoom application, since all values have a positive meaning. When the final result of the research is considered, university students' live lesson scores according to the gender variable were examined and it was concluded that university students' scores for live lessons were higher than female students' distance education scores compared to male students. While the high values of female students in the live lesson environment were given as the last result of the research, it was concluded that the values of male students were also high in this study. In addition, according to the results of the research, it was concluded that the students enjoyed this activity and education, used every material through the Zoom application and understood their lessons better, thanks to the Zoom application.

6   Suggestions

It should not be forgotten that in distance education systems carried out through distance education, not only the delivery of education, but also the measurement and evaluation of student success should be considered as a priority. In addition, it is recommended to repeat the research in another region in another time period in order to improve the subject and students in distance education.

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