Determining University Students' Views on Mobile Technology and Moodle Applications in Personalized Learning

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Abstract—The aim of this study is to determine the opinions of university students about mobile technology and Moodle applications, considering that university students continue their lessons through the distance education platform throughout the pandemic, mobile technology will turn into an advantage for them. Quantitative research method was used in the study. The research was conducted in the fall semester of 2021-2022. 270 volunteer university students that study in Kazakhstan participated in the research. In the research, 3-week online training was given to university students. In the research, the "Moodle & Mobile Technology" measurement tool developed by the researchers and compiled by experts in the field was used. The measurement tool was delivered and collected by university students via online method. The analysis of the data was made using the SPSS program, frequency analysis, t-test and anova test, and the results were added to the research with tables and comments. According to the results obtained from the research, it has been concluded that university students have a high opinion of mobile technology and module application.

Keywords—Moodle, mobile technology, personalized learning, distance learning platforms, university students

1 Introduction

It is known that the Covid-19 epidemic, which is accepted as a pandemic all over the world in today's conditions, deeply affects education and training activities, as it does in many areas [1]. With the effect of this situation, it is seen that formal education is suspended in schools and universities in our country and all over the world, and compulsory distance education is started [2]. Many students and teachers around the world have had to stay at home like other members of society. It is seen that the necessity of this transformation to be very fast at all levels of education complicates

the process [3]. The distance education approach, which was previously known to be more suitable for mobile technology education for university students, had to be implemented at all levels of education due to the epidemic, which is likely to last for a long time. [4]. It is known that even the institutions of different schools with online education and distance education experience face different difficulties in conducting their current academic activities remotely in a short time compared to university terms [5]. Two important difficulties experienced in higher education institutions in the transition to compulsory distance education in a short time were the need to quickly provide the necessary technological infrastructure for these applications and to increase the technical and pedagogical competencies of the users in these technologies. distance education in a short time [6]. It is foreseen that all teaching activities will be carried out over the internet with asynchronous and synchronous tools, but this has brought unexpected loads to the existing information infrastructures of higher education institutions [7]. It has been difficult to increase the capacities in technical infrastructures due to the inability to provide adequate supply for the rapidly increasing demand, unexpected costs, lack of experts and the uncertainty of the pandemic process. On the other hand, technology literacy of all higher education members, especially students and lecturers for general and distance education, had to be minimized in a short time [8]. Trainers with different experiences and attitudes in information and communication technologies have had to take fast, intensive and mostly online in-service seminars due to the pandemic. Especially in the spring of 2020, when the effects of the pandemic emerged, many faculties and students had to do many activities through distance education for the first time: digitizing and sharing course materials, synchronized processing of lectures over the Internet, online exams, etc. The difficulties, effects and solutions experienced in the transition to compulsory distance education and its implementation have been experienced at different levels in different universities [9].

The fact that distance education can be done easily with technological developments has led institutions and companies to conduct their education in this way. Online learning systems serve companies and institutions. It is known that systems such as Moodle, Blackboard and other learning management systems are used as instructional management systems used in this field [10]. Especially open source Moodle is a popular teaching management system used by universities. These instructional management systems have developed versions suitable for mobile use with the increasing use of mobile platforms [2]. In addition, with the updated version of Moodle's mobile application, mobile devices that provide easy access to students and the Internet become the first choice for accessing the Internet. Being always open and always with people puts this platform first in internet access [11]. While the developments in the mobile internet infrastructure of operator companies accelerate the use of mobile internet, the number of people using mobile internet is also increasing. As the capabilities and capabilities of mobile systems evolve in line with technological developments, more media can be viewed, played, and code stacks run [12]. This rich content infrastructure enables the development of many different sectors in the mobile field. The internet world, which users now access from mobile, has now had to make

mobile designs. Website designs that adapt and respond to the screen size have taken their place in the internet world [13].

1.1 Related studies

In the study of [14] the study aimed to examine the effect of Moodle, as an academic flow-based learning management system, on the writing skills of English learners, and as a result, they found that the writing skills of the students participating in the study were improved by using Moodle in their online virtual classroom instead of traditional methods. and also stated in their studies that Moodle application is beneficial for students.

It is expressed in the work of [15] within the framework of current trends in Higher Education, particularly the assurance, structuring and development of complete virtual courses on the web without the need for deep computer science knowledge. They aimed to be developed for the various teaching methods and learning trends available under conditions and facilities that allow virtual courses to be electronic, hybrid or mobile, and as a result, in their research they ensured the smooth structure and functioning of undergraduate and postgraduate virtual courses on the Moodle platform, and also while designing teaching activities. and they have reached the conclusion that it is more accurate to combine their digital resources with moodle in order to bring them together and develop them.

[16] are aiming to adapt their work in (2022) to the research facility of the Moodle platform, this year digitalize while designing and assembling their effectiveness and improving them. , research and as a result, working with the system Moodle, Moodle-based English Learning approach and also with the help of Moodle in the package, it is seen that students achieve better learning results in this area.

When the relevant research part is discussed and the articles and researches are examined, it is seen that there are values that the moodle application and mobile technology also positively affect the educational dimension in their lives. In this context, it is thought that the formation of the same values in the participant groups in this study will benefit and benefit the field writing.

1.2 Purpose of the study

In this study, it was aimed to determine the opinions of university students about mobile technology and moodle applications and to seek answers to the following questions regarding the related problem situation and general purpose.

1. How Are the Mobile Technology Usage Times of the Participant Groups Participating in the Study?
2. What is the Level of Knowledge of the Participant Groups Participating in the Study about the Moodle Application?
3. What are the Views of the Mobile Technology Groups of the Participants in the Study?

4. What are the opinions of the Participant Groups participating in the Study about the field of Moodle Application?
5. Is There a Difference between Moodle and Mobile Technology According to the Gender Criteria of the Participant Groups Participating in the Study?
6. Is There a Difference between Moodle and Mobile Technology According to the Age Criteria of the Participant Groups Participating in the Study?

2 Method

In this part of the research, the method used in the study, which will include the information given and seen in the method section of the researches about the type of data collection tools and the numerical values in the source based on moodle and technology, has been compiled according to the information given. the work has been edited.

2.1 Research methods

It is seen that research methods are used in the sub-dimensions of the research through the quantitative research model. from previous lifetimes to the present [17]. In this research, in or-der to determine the opinions of university students about mobile technology and moodle applications by using quantitative research method; gender was defined according to the vari-ables of education period.

2.2 Working group/participants

The participation groups included in the research are East Kazakhstan Technical. It is observed that it consists of 270 students continuing their education at the university institution. The measurement tool used in the study was applied to 270 participants with the help of an online questionnaire and accepted.

Gender. In this section, the differences of the university students participating in the research according to their gender are given in Table 1.

Table 1. Distribution of the Participants Participating in the Study according to Gender Variable

Gender	Male		Female	
	F	*%*	*F*	*%*
Variable	136	50.37	134	49.63

When the values on Table 1 of the study were examined, distributions were determined according to the gender variable of the participant groups participating in the study and the in-formation was examined and added to Table 1. In this context, it is seen that 50.37% (136 people) of male participants, while 49.63% (134 people) of female participants. In the gender section, the findings reflect the actual gender distribution.

Mobile technology usage times of the participant groups participating in the study. In this section, the times of using mobile technologies during the day for the audience participating in the research were investigated according to the problem situation of the research, and detailed information is given in Table 2.

Table 2. The Mobile Technology Usage Times of the Participants Participating in the Study During the Day

The use on mobile technology	1-2 Time		3-4 Time		5 and above hours	
	F	*%*	*F*	*%*	*F*	*%*
Variable	17	6.30	52	19.26	201	74.44

When Table 2 is examined, the group surveyed within a day of the days of mobile technology researched and detailed information are given in Table 2 time zones used in this context, Table 2 is examined, %6.30% to (17 people) using mobile technology for 1-2 hours, as they uttered, when %19.26 percent (52 people) they expressed using mobile technology in the range of 3-4 hours, and finally %74.44 percent (201 people) and over 5 hours to use mobile technology became, in this context, it is observed that he prefers using mobile technology in the range of 5 hours and above in the research period of the day December.

The level of knowledge of the groups of participants participating in the research about the Moodle application. In this section, the knowledge levels of the participants who participated in the study about the problem situation of the research about the application of moodle have been investigated and detailed information is given in Table 3.

Table 3. The Level of Knowledge of the Groups of Participants Participating in the Re-search about the Moodle Application

Knowledge Levels of Moodle Application	I have information		I don't know		I have partial knowledge	
	F	*%*	*F*	*%*	*F*	*%*
Variable	63	23.33	159	58.89	48	17.78

When Table 3 is examined, in relation Moodle groups of participants surveyed were investigated and the application of knowledge about a problem state levels are given in Table 3, in this context, when Table 3 is examined, %23.33 percent (63 people) when choosing the option to have knowledge of, %58.89 percent (159 people), I don't have the information option, and finally %17.78 percent (48 people), it is observed that select the option I have information partially, the problem is I don't have the most information about the status of option was selected when the students Moodle, which will be described in this section can be seen.

Age status. In this section, the age status of the study participants was examined, and detailed information was given in Table 4.

Table 4. Distribution of the groups of participants participating in the study according to their Age Status

Age	18-21		22-26		27 and above ages	
	F	*%*	*F*	*%*	*F*	*%*
Variable	176	65.18	73	27.04	21	7.78

When Table 4 is examined, the data on the age status of the participant groups participating in the research were examined and the relevant information according to the age scale was added to the table. Considering the Table 4, 65.18% (176 people) are between the ages of 18-21, 27.04% (73 people) are between the ages of 22-26, and finally 7.78% (21 people) 27 years and over. In the age status section, the findings reflect the true distribution.

2.3 Data collection tools

In the data collection tool section, it is seen that first of all, information will be given about what kind of data collection tool will be used in the research. The data collection tool has been prepared by experts to increase the opinions of university students about mobile technology and moodle applications and the inappropriate substances have been removed from the research and the data has been shaken correctly. A personal information form called the "Moodle and Mobile technology" measurement tool, which was applied to the groups of participants participating in the study and developed by the researchers, was used. The scope validity of the developed measurement tool has been examined by experts with the title of 4 professors working on learning management systems and mobile technology platforms, and unnecessary items have been removed from the measurement tool and rearrangements have been made.

1. Personal Information Form (Demographic Data): In the personal information form; information such as age, gender, mobile technology usage and knowledge levels about moodle are included.
2. Moodle & Mobile Technology Data Collection Tool: In order to get information about the opinions of university students about mobile technology and moodle applications, a 5-point likert type questionnaire was prepared. 22 items of the measurement tool consisting of a total of 25 items were used and 3 items were removed from the measurement tool thanks to the expert opinion. The opinions of the participants participating in the research were ap-plied from two factorial dimensions, such as the situations of the participant groups participating in the study, such as "Moodle Usage" and "Mobile Technology". The Cronbach Alpha reliability coefficient of the measurement tool as a whole was calculated as 0.91. Measurement tool; "strongly disagree" (1), "disagree" (2), "I'm undecided" (3), "agree" (4) and "strongly agree" (5) in the form of rated. The measurement tool Moodle questionnaire was also collected from the people participating in the study in the form of an online environment.

2.4 Application

The uznab prepared according to the application dimensions to determine the views of university students on moodle and mobile technology and applications can be seen. Video conference and Google meet with the program participant groups determined in Kazakhstan to East Kazakhstan Technical University, Kazakhstan region by researchers who continue research, education and research with the help of people. Moodle mobile technology and use cases were determined with the help of live events, live and timely preparation on the course, prepared with the Google Meet video conference application program and this event was organized by showing it to the experts in the field. In the field of educational environment, when the activity part of the research is completed, it is aimed that university students will discover the moodle environment and have a good command of mobile technologies. During the 3-week training, activities related to the live narrations of the participating groups, such as "moodle environment", "mobile technology", etc. The information was transferred to the participants in the research as follows: distance education and participants were expected to participate in this topic every week. After the 3-week training, the data collection tool and the information form were applied to the participant groups through an online questionnaire in moodle, and the data were given in tables in the findings section. Education On most platforms used in the Google video conferencing app Part 2, and each Support distributed through the program will be capped at a maximum of 140 participants in a designated section, so it's set to be distributed in total to each event in the program next week. 45-minute training In the 60-minute 15-minute question-answer period, one of the groups participating in the online training was expected to take images using devices such as tablets, phones, computers and microphones. attend training. The measurement tool applied to the participant groups was collected through an online questionnaire, coded in calculation programs and transferred to the SPSS program.

2.5 Analysis of the data

In the analysis of the data, statistical data obtained from university students were analyzed in the Statistical program using frequency (f), percentage (%), mean (M), standard deviation (SS), t-test, One Way ANOVA with ira. Numerical values are given to the data obtained from the program in tables, accompanied by comments in the findings section.

3 Findings

In this section of the research, the numerical findings obtained as a result of the analysis of the statistical data obtained in the research have been added to this section in the form of tables, and various interpretations have been given in accordance with the findings.

3.1 Mobile technology opinions of the participant groups participating in the research

In this part of the research, the findings related to the mobile technology views of the participant groups are given on Table 5.

Table 5. Mobile Technology Opinions of the Participant Groups Participating in the Research

No	Opinions on Mobile Technology	*M*	*S*
1	I refreshed my knowledge in mobile technology and used mobile technology thanks to innovative training	4.34	0.61
2	Mobile technology has made me understand education better	4.46	0.63
3	Thanks to mobile technology, I understood the lesson better	4.31	0.75
4	It gave me pleasure to use the mobile technology he uses in different places, not in the classroom environment	4.21	0.65
5	Courses given using mobile technology increase the efficiency of students and courses	4.26	0.74
6	The lessons given using mobile technology allow me to express myself more easily	4.34	0.72
7	The use of mobile technology in the lessons increases motivation.	4.36	0.62
8	Mobile technology enables active learning	4.43	0.7
9	The presentations shared in the activities made through mobile technology offer different perspectives to the students	4.34	0.72
10	The questions shared in the activities with mobile technology enable the students to learn the lesson better	4.36	0.69
11	Mobile technology gives students the opportunity to offer richer content	4.26	0.74
General Average		4.33	0.68

When Table 5 is discussed, surveyed participants regarding their opinions of the statistical findings among groups of mobile technology, each answer carries a different meaning after the events of the participating groups, although this area that is high on the basis of the views of Table 5 can be said of the research, from the most obvious expression, "it helped me understand better education, mobile technology," *M*=4.46 finding was reached. In addition, it was found that one of the most obvious statements of the research is "I refreshed my knowledge in mobile technology and used mobile technology thanks to innovative education" *M*=4.34. It is seen that the views of participants surveyed groups of mobile technology is quite high, while other findings "courses using mobile technology allows you to easily ex-press myself more" *M*=4.34 finding was reached. Another finding of the research is that "Mo-bile technology provides active learning" It was found that *M*=4.43, finally, it is seen that the general average is found to be *M* = 4.33.

When examining the future of mobile technologies in the lives of the group of study participants Table 5 that you can use very easily and also, they can reach where you want it actively in their learning, they provide mobile technology, mobile technology, mobile technology that they found the courses they express themselves better among the findings are simple and useful. In this context, it can be said based on the

findings that mobile technology is positive for the participant groups because all the values in Table 5 have a positive meaning.

3.2 Opinions of the groups of participants participating in the research on the field of Moodle application

In this part of the study, the findings regarding the moodle application of the participant groups participating in the study are given on Table 6.

Table 6. Opinions of the Groups of Participants Participating in the Research on the field of Moodle Application

No	Opinions on Moodle Application	M	S
1	The lessons I took with the Moodle application provided more lasting learning compared to the traditional classroom environment	4.34	0.65
2	The lessons I have taken on the Moodle application increase my interest in the lesson	4.41	0.63
3	I believe that the lessons given using the Moodle application increase success	4.41	0.63
4	It is more interesting to create activities in the lessons given using Moodle	4.34	0.69
5	Lessons taught using Moodle become more effective in collaborative learning	4.39	0.66
6	Lessons taught using Moodle increase the efficiency of students and courses	4.34	0.61
7	The lessons given using Moodle allow me to express myself more comfortably	4.36	0.73
8	The use of Moodle in lessons positively affects my motivation	4.34	0.65
9	The Moodle app enables active learning	4.41	0.63
10	The presentations shared in the activities made through Moodle offer different perspectives to the students	4.29	0.74
11	I believe that the questions shared in the activities with Moodle enable students to learn the lesson better	4.36	0.62
	Overall Average	4.36	0.65

Table 6 statistical research participants in relation to moodle on the application when examining the findings are among the groups participating in the each answer carries a different meaning, although after the events of Moodle that are high regarding the field of application on the basis of the views of Table 6 can be said of the research, from the most obvious ex-pression, "the lessons I learned on the course Moodle increases my interest in the app," and "using Moodle courses to help promote the success of I believe in the" M=4.41 finding was reached. In addition, it was found that one of the most obvious expressions of the research is "The lessons given using Moodle allow me to express myself more comfortably" M=4.36. Another finding of the research "Moodle learning environment compared to traditional class-room cours-es I took with the more permanent the app is provided" M=4.34, and "I believe that students learn better questions shared in the lesson activities with Moodle" M=4.36 finding was reached. In addition, another value of the research is that "presentations shared in activities through Moodle offer different perspectives to students" It was found that M=4.29, final-ly, it is seen that the overall average is found to be M = 4.36.

Table 6 shows that the groups of participants were able to follow the lessons related to the problem situation of the research using the moodle application, that they were able to do active learning with the moodle application, that their motivation increased by using the moodle application, that they enjoyed the activities given with the moodle application and that they received and reached a lot of positive information. In this context, it can be said based on the findings that all the values in Table 6 are useful in the field of moodle application of participant groups, as they have a positive meaning.

3.3 The Moodle and mobile technology status of the participant groups participating in the study according to gender criteria

In this section of the research, the moodle and mobile technology situations of the participant groups were examined according to the gender variable and whether there is a significant difference is given in Table 7.

Table 7. Technology Status of Participant Groups According to Gender Criteria

	Gender	N	*M*	SD	Df	t	p
Moodle and Mobile Technology Cases	Male	136	4.38	0.47	270	-523	.500
	Female	134	4.35	0.44			

When Table 7 was examined, the mobile technology and moodle situations of the participant groups were examined according to the gender variable and it was found that there was no significant difference according to the gender criterion. [t(270)= -523, p<.05]. When the mobile technology and moodle situations of the participant groups are examined, it is seen that the average score of the male participant groups in this area is (*M*=4.38), while the average score of the female participants in this area is (*M*=4.35). In this context, it can be said that there is no difference between the mobile technology and moodle scores of male participants compared to female participants in this study, the findings of the study can also be said Decisively.

3.4 The Moodle and mobile technology status of the participant groups participating in the study according to the age criterion

In this part of the study, it is seen that the One Way ANOVA findings were presented to the participant groups in order to determine the values of determining the moodle and mobile technology status according to the age criterion.

As can be seen in Table 8, there was no significant difference between the results of the comparison of the moodle and mobile technology status of university students for the age criterion. Dec. ($\chi 2$ (3)= 1.882; P=.135; P>0.05). Age of college students Moodle mobile technology and the criteria for judging the results of the comparison of the situations the highest value between the ages of 18-26 21yas than the lowest value in the range are in the range of age and above, and these values did not show a significant difference in the highest and lastly it can be said that the age range.

Table 8. Moodle and Mobile Technology Status of the Participant Groups Participating in the Study According to Age Criteria

Age	N	Rank Average	SD	X^2	P
18-21	176	38.5			
22-25	73	29.1	3	1.882	.135
26 and over	21	22.5			

4 Discussion

In 2021, [18] worked on the student's attendance, behavior and personality prediction model by offering students to Moodle log data to investigate the impact of factors impact the performance and sought to use, and as a result his or her contribution and to propose a framework for an intelligent learning environment moodle to work with the performance of the environment is symmetric, because it is seen that the statistics and the results of their own values reach compliant, when the result of the research is combined with this value, it is seen that the values of university students re-garding the moodle application are in a positive direction, in this context, it can be said that these technologies provide positive benefits to people receiving education.

The main purpose of [19] were to examine the relationship between language by Deciphering, improve the graphics of teachers 'self-efficacy and mobile education is aimed at studying, and as a result the level of self-efficacy of mobile technology and the level of training of Language teachers attitude I can do less unstable' they achieved in this context, the results of this research, when combined with the values the use of mobile technology in research, it is observed that the results they provide active learning is reached in, in this context, it can be said that the values of the studies carried out with mobile technology differ according to the time and place and the participant groups.

The work by [20], in the purpose of this article, is aimed at providing a description of various approaches to adaptive learning, and as a result, in the system Moodle e-learning courses, as well as Polish and Ukrainian students by using the Google Suite for Ms teams conducted for students in synchronous and asynchronous modes of the results arrived at, and also achieved the lessons they provide the benefits of this technology, in this context, when this value is combined with the values of the research, it is seen that the audience in the study is trained with google meet technology, and it is concluded that moodle applications benefit their courses synchronously within the system they use, it can be said that they benefit students in both values in this context.

Research carefully examined, and a common set of mobile technology to stay a step ahead of Moodle has been made in the education of students shows that, in this context, this re-search is of significant value in shedding light to this study there is no connection between the expectations of students, it can be argued as important for educators to always be one step ahead.

5   Conclusion

If the results of the research are taken into account, it is seen that the number of participants came first, in this context, as a result, it is seen that 270 people participated in this re-search, with another change, the excess of these people will benefit and benefit in the field summer. Another Value Study Group of the research participant within a day of time zones used in the days of mobile technology, researched, and as a result the range up to 5 hours and the above results have been achieved in the use of mobile technology, thus the problem is reached, it is observed that the results would be made a step forward. Another value of the research is that it has been investigated whether there are information levels about moodle application regarding the purpose of the research and it seems that it has been concluded that there are no information levels, an explanation of this value has been provided in the application environment and is given in other tables.

Another important result of the study of mobile technology researched opinions regarding their opinions of the participating groups participating in the survey, and as a result, participant of the groups that can use mobile technology mobile technologies in future lives, they can also very easily reach where you want and they provide actively in their learning, mobile technology, mobile technology courses they express themselves better in the simple, convenient and they found the results have been achieved. If research participants in relation to an-other value the opinions of Moodle implementation of research, researched, and as a result, the state dismissed the application to the research problem of the participating groups, they were able to follow the lessons using Moodle, moodle with the application of active learning that they are capable of, there's more of motivation by using the application, moodle, moodle is provided with the application knowledge and the activities that they enjoy and their many positive conclusions are reached, it is seen that take place. Another value of the research is that the mobile technology and moodle situations of the participant groups were examined according to the gender variable and it is seen that there is no significant difference according to the gender criterion, and it is also seen that the results of both gender values are high. The final value of the research is that it seems that there is no significant difference between the results of the comparison of the moodle and mobile technology situations of university students for the age criterion.

According to the results obtained as a result of the research, it was concluded that university students have a high opinion of mobile technology and moodle application.

6   References

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