Comparative Analysis of Mobile Learning Trends of Physical Education Teaching Students: Republic of Kosovo and Russia Example

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Shemsedin Vehapi[1(✉)], Elena V. Asafova[2], Klavdiya G. Erdyneeva[3], Andrey A. Tyazhelnikov[4], Sergei P. Zhdanov[5], Albina R. Shaidullina[6]
[1] AAB College, Industrial Zone Prishtina, Republic of Kosovo
[2] Kazan (Volga region) Federal University, Kazan, Russia
[3] Transbaikal State University, Chita, Russia
[4] I.M. Sechenov First Moscow State Medical University (Sechenov University), Moscow, Russia
[5] Plekhanov Russian University of Economics, Moscow, Russia
[6] Almetyevsk State Oil Institute, Almetyevsk, Russia
shemsedin.vehapi@aab-edu.net

Abstract—The aim of this research is to conduct a comparative analysis of the mobile learning trends of students of the physical education teaching department studying in The Republic of Kosovo and Russia. In this research, causal comparative research method was used. The study group consists of 40 students studying physical education teaching at various universities in Kosovo and Russia in the 2020-2021 academic year. A total of 80 students participated in the study. The research data were collected by the semi-structured interview form developed by the researcher and the data was analyzed by content analysis method. The research results reveal that students studying in both countries have a high mobile learning tendency. In addition, students from both countries have similarly defined the advantages and disadvantages of mobile device use in education.

Keywords—mobile learning, republic of kosovo, physical education teaching, Russia

1 Introduction

The transformation in this so-called mobile age affected the field of education as well as all areas, and made mobile learning seen as a new paradigm of our time [1]. In recent years, it has been observed that significant developments have been made in the field of "mobile computing". Major developments include the strengthening of laptops and tablet computers, the proliferation of mobile computers, portable media players and smartphones.

Wireless, GPRS connectivity, bluetooth, and infrared connectivity are increasingly being used to enable online connectivity using mobile devices on their own or in combination. In addition, significant advances are seen in information storage, transport and

transfer between different formats among mobile devices [2]. The integration of all these developments into education and the availability of them at almost every level of education has led to an increasing number of studies in this field in recent years.

1.1 Theoretical and conceptual framework

Increasing interest in theoretically learning-centered learning approaches, the transition from computer-aided education to virtual learning circles in terms of the educational environment, and technological changes with the gradual development of mobile devices and wireless technologies have made mobile learning a popular and interdisciplinary field of study.

When the relevant field is examined in the summer, it is seen that there is no finalized definition of mobile learning. In some researches, mobile learning is defined as a learning method that leverages the learning opportunities offered by mobile technologies regardless of the specific place and time of the learner [3]. In another study, however, the 1980s and 1 Although learning from mobile devices is defined as m-learning, it is stated that m-learning is not limited to using or learning to use a mobile device [4]. Mobile learning, which develops accordingly, is a term that refers to learning, which includes the use of a mobile device. These definitions provide a glimpse into the educational benefits of learning with mobile devices, as oversized learning occurs between time, subjects, people, and technologies [5].

The development of structures, tools and systems to meet the needs of individuals is the technology process. In order to catch up with today's age, individuals need to be trained as technology literate. An individual acquiring this skill knows what technology is, how it is shaped and how it affects society. Information technology literacy uses scientific methods to solve problems throughout an individual's life. As a result, it can better understand and interpret the interaction between society and the environment and have a scientific perspective [6]. Accordingly, it is seen as important to obtain student feedback on learning activities using traditional learning methods as well as mobile learning-based education model.

1.2 Related research

When the researches carried out in the field are examined, it is seen that a large part of the research indicates the spread of mobile learning in the field of education and the importance of the use of mobile technology.

In one study, researchers systematically reviewed and synthesized technology acceptance model studies related to mobile learning, aiming to conduct a comprehensive analysis of 87 research papers from 2006 to 2018. The main findings of the study are that most of the technology acceptance model studies related to M-learning focus on expanding the technology acceptance model with external variables, followed by studies that expand the model with factors from other theories/models. The main research problem, which is frequently discussed among all the studies examined, is the examination of the level of acceptability of M-learning among students [7].

In another study, the researchers discussed mobile learning readiness in two ways: the readiness of mobile technologies for educational processing and the readiness of teachers and students to use mobile in learning. As the researchers pointed out, the realization of mobile learning is very important as a basic preparation for users to have or access mobile technologies. However, the presence and availability of mobile devices in teaching environments does not guarantee that learners are ready for m-learning and will use m-learning [8].

When the studies on mobile learning are examined, it is seen that mobile technologies are used in almost every field in educational environments and many studies have led to a positive increase in success [9].

Research on the use of mobile technologies in education is also varied. In the studies carried out with the aim of determining trends in the field of mobile learning, students, teachers and academicians were studied and the place and effect of mobile learning in education was tried to be evaluated using different methods and techniques.

For example, in one of these studies, mobile learning studies on mathematics between 2000 and 2014 were examined by meta-analysis method. In this study, which was reviewed by 48 studies, it was concluded that interest in mobile learning has increased over the years and mobile learning has become more common due to the development of technology [10].

In addition, in some researches in the field, traditional learning methods and mobile learning are considered comparatively. Compared to traditional learning, m-learning has been hooked on facilitating collaborative research processes, strengthening interaction between them and improving learning performance to encourage students' interest and participation [11].

Researches have also been carried out in which opinions have been taken and determinations have been made about what devices can be used in the process of spreading mobile learning. In these researches, devices that can often be used; laptops, tablet computers, wearables, mobile computers, netbooks, mobile phones, smartphones, personal digital assistant, portable mp3 player, ipad, ipod touch, portable gaming tools, USB sticks, palm devices have been stated [12].

Part of the research on mobile learning is the studies on scale development. In a 2011 study, researchers worked with 467 secondary school teachers to develop a mobile learning scale for teachers. The scale was prepared in the type of 5 likert and the KMO value was found to be .968. As a result of the factor analyses, it was observed that the scale consisted of 3 factors and 26 substances and 66,950% of the total variance was explained. The Cronbach Alpha value was calculated as 0.970 [13].

Another study conducted in 2013 improved the attitude scale for mobile learning. In this study, 427 undergraduate students took part. The KMO value of the scale configured in the 5-like type was found to be 0.913. As a result of the factor analyses, it was revealed that the scale consisted of 4 factors and 21 substances and explained 51.116% of the total variance. The Cronbach Alpha coefficient was calculated as.881 [14].

Today, the implementation or acceptance of mobile learning in teaching and research and other academic activities has been successful in some developed and developing countries of the world and has proven to be more efficient than traditional learning systems [15].

1.3 Purpose of the research

The aim of this research is to conduct a comparative analysis of the mobile learning trends of students of the physical education teaching department studying in The Republic of Kosovo and Russia.

Accordingly, the following questions were sought for answers;

1. What is the perspective of students on the use of mobile vehicles in learning?
2. What is the frequency of mobile vehicle use in learning students?
3. What are the students' views on the advantages of using mobile vehicles in learning?
4. What are the disadvantages of mobile vehicle use in learning?

2 Methodology

This section provides research model, participants, data collection tools and data analysis processes and methods.

2.1 Research model

In the study, causal comparative research method was used to examin how students' views on mobile learning trends constitute a hierarchical structure according to the importance levels of

The independent variables. In causal comparison research, there are at least two groups affected in different ways from the same situation, or two groups that are affected and unaffected by the presumed condition, and these groups are examined for some variables in order to determine the possible causes and effects of the current situation. Causal comparison research is similar to experimental research in terms of trying to explain the cause-and-effect relationship. However, unlike experimental research in these studies, the situation investigated is somehow linked to the manipulation of the researcher. The researcher, on the other hand, tries to determine the possible causes and influences of this situation [16].

2.2 Participants

The study group consists of 40 students who studied physical education teaching at various universities in The Republic of Kosovo and Russia in the 2020-2021 academic year and agreed to participate voluntarily in the study. In order to achieve healthy results in the comparison of the data, students with similar demographic characteristics were selected. Demographic distributions of students are given in Table 1 and Table 2 in the findings section.

2.3 Data collections tools

For use in the research, a mobile learning trends interview form was created by the researchers. This form is in the form of a semi-structured interview form and consists

of questions about the demographic characteristics of the participants, two closed-ended questions and two open-ended questions. When creating the semi-structured interview form, the relevant field was scanned in detail and various items were determined in order to determine the students' perceptions of mobile learning trends. Some measures have been taken by the researchers to increase the validity, clarity and comprehension of the prepared form. The prepared questions were checked by cognitive interviews with four students. Cognitive interviewing is a recommended method for preparing self-notification clauses in educational research [17]. In cognitive interview, the goal is not to get answers to questions from participants, but to learn what the participants think about the questions. Students who read the questions during the cognitive interview were asked to examine the questions in terms of clarity, clarity and format and to indicate whether they were suitable for the scope of the subject. He was also asked about the points that need to be corrected and the questions they think should be added. In the cognitive interview, the students reported that the questions in the form were clear, understandable and inclusive. The semi-structured interview form is provided in Annex-1.

2.4 Data Collections Process

Students who agreed to participate voluntarily in the data collection process were sent via e-mail to the "Students' Mobile Learning Trends Interview Form" prepared by the researchers. It took approximately 1 month to ensure the return of the students who participated in the study and to obtain sufficient data.

2.5 Analysis of data

In the process of analyzing the data, the data collected primarily in writing was checked in terms of formality and spelling, and typos made in such a way as not to change the meaning and context were corrected in order to facilitate the examination of the data. Then the collected data was analyzed by content analysis method. Content analysis; to interpret the similar responses of the participants in a way that the reader can understand by combining them into certain categories [18]. Errors such as addressing inadequate results, themes based on closed

responses, misinterpreting data compromise the credibility of qualitative work. It is one of the measures that can be taken in terms of credibility to ask people who have general knowledge about the subject of research and specialize in qualitative research methods to examine the research in various dimensions. This method is called peer debriefing [19].

In this review, the expert looks critically at the processes from the pattern of the research to the data collected, their analysis and the writing of the results and gives feedback to the researcher. An independent researcher/colleague who has little contact with the study participants and knows the method of study, who can make adequate judgments about the comments, can be recruited for expert examination [20].

The reliability of the analysis of the data obtained from the interview form is associated with the harmony between the expert and the researcher. A university professor

in The Republic of Kosovo for the Turkish version of the form and a university professor in Russia for the Russian form have been designated as experts. Reliability of the research; formula; [Credibility = Consensus / (Consensus+ Disagreement) x 100]. It is stated that there is a desired level of reliability that the compliance is 90% or more [21]. As a result of the codings made by experts and researchers in the study, the reliability of the Turkish form was calculated as 96% and the reliability of the Russian form was 92%. Analysis of research data frequency (f) and percentage (%) calculations are given in the findings section.

3 Research findings

In this section, the analysis of the data collected by the "mobile learning trends interview form" used in the research is included.

In Table 1, demographic distributions of the students who participated in the study regarding age and gender are given.

Table 1. Age and gender distribution of students

Age	**Gender**				**Sum**	
	Female		***Male***			
	F	***%***	***F***	***%***	***F***	***%***
19-20	15	%18,7	7	%8,7	22	%27,5
21-22	30	%37,5	9	%11,2	39	%48,7
23-24	7	%8,7	5	%6,3	12	%15
25-26	6	%7,5	1	%1,2	7	%8,7
Sum	58	%72,5	22	%27,5	80	%100

27.5% of the students surveyed were 19-20, 48.7% were 21-22, 15% were 23-24 and 8.7% were between the ages of 25 and 26. It is seen that the majority of participants are between the ages of 21 and 22. In addition, 72.5% of the students in the study were female and 27.5% were male, and it was observed that female students participated more in the study.

Table 2 provided the demographic distribution of the students who participated in the study regarding the class distributions in which they studied.

Students studying physical education teaching in The Republic of Kosovo and Russia participated in the study. Table 2 distributes the students in which grade they are studying. 36.2% of students are in 1st grade, 25% in 2nd grade, 23.7% in 3rd grade and 15% in 4th grade. The students who participated in the study were mostly 1st graders, and the students who participated the least were 4th graders. It has been determined that they are class students.

Table 2. Class distributions of students

Classroom where Physical Education Students Study	Sum			
	F	***%***	***F***	***%***
Republic of Kosovo 1st Class	13	%16,2	29	%36,2
Russia 1st Class	16	%20		
Republic of Kosovo 2nd Class	11	%13,7	20	25
Russia 2nd Class	9	%11,2		
Republic of Kosovo 3rd Class	9	%11,2	19	23,7
Russia 3rd Class	10	%12,5		
Republic of Kosovo 4th Class	7	%8,7	12	15
Russia 4th Class	5	%6,2		
Sum	80	%100	80	%100

Table 3 contains students' views on the use of mobile vehicles in learning.

Table 3. Students' views on mobile vehicle use in learning

Student	I find it positive		I find it ineffective		I find it negative		Sum	
	F	***%***	***F***	***%***	***F***	***%***	***F***	***%***
Republic of Kosovo	32	%40	5	%6,2	3	3,7	40	%50
Russia	37	%46,2	2	%2,5	1	%1,2	40	%50
Sum	69	%86,3	7	%8,7	4	%5	80	%100

Students' views on mobile vehicle use are categorized as "I find it positive", "I find it ineffective" and "I find it negative". 86.3% of students stated that they found the use of mobile vehicles positive in learning. 8.7% of students found the use of mobile vehicles ineffective in learning, while 5% found it negative.

Compared to students studying in The Republic of Kosovo and Russia, it was observed that students studying in Russia found the use of mobile tools in learning relatively positive compared to students studying in The Republic of Kosovo. Students studying in the Republic of Kosovo have a higher attitude towards the ineffective or negative use of mobile vehicles in learning than students studying in Russia.

Table 4 contains the distribution of students regarding the frequency of mobile vehicle use in learning.

Table 4. Distribution of students regarding the frequency of mobile vehicle use in learning

Student	I always use.		I use it often		I sometimes use		I rarely use		I never use		Sum	
	F	***%***	***F***	***%***	***F***	***%***	***F***	***%***	***F***	***%***	***F***	***%***
Republic of Kosovo	12	15	11	13,7	8	10	6	7,5	3	3,7	40	%50
Russia	14	17,5	13	16,2	9	11,2	3	3,7	1	1,2	40	%50
Sum	26	32,5	24	30	17	21,2	9	11,2	4	5	80	%100

In Table 4, students' mobile vehicle usage frequency is categorized according to "I always use", "I use frequently", "Sometimes I use", "I rarely use" and "I never use".

32.5% of students said they always use mobile tools to learn, while 30% said they use them frequently. In addition, 21.2% of students said they sometimes used it, 11.2% said they rarely used it, and 5% never used a mobile tool to learn.

Compared to students studying in The Republic of Kosovo and Russia, the frequency of mobile vehicle use of students studying in Russia is partially higher than the frequency of mobile vehicle use of students studying in The Republic of Kosovo.

Table 5 provides students with their views on the advantages of using mobile vehicles in learning.

Table 5. Students' views on the benefits of using mobile tools in learning

Category and student opinions	**Republic of Kosovo**		**Russia**		**Sum**	
	F	***%***	***F***	***%***	***F***	***%***
Easy access to information						
SK11; I'll have the information I need at any time.	35	%43,7	31	%38,7	66	%82,5
SR32; Mobile tools allow me to easily access the information I need, without wasting time						
Sharing wealth						
SK17; When I want to know about something, there's no way I can't get it.	32	%40	27	%33,7	59	%73,7
SR9; Since the Internet has unlimited content, it provides a rich learning platform.						
Freedom of learning						
SK5; I have the freedom to investigate any information I want.	29	%36,2	9	%11,2	38	%47,5
SR14; It doesn't restrict the person. An independent learning event can be performed.						
Time and Space Independent Learning						
SK22; It gives the person the freedom of time and space.	22	%27,5	35	%43,7	57	%68,4
SR16; I decide for myself where and when to learn.						
Economics						
SK40; Tutoring is much cheaper than programs that complement learning deficiencies such as courses.	19	%23,7	5	%6,25	24	%30
SR31; It gives you free access to information.						
Technology integration into education						
S”K8; A learning method required by the digital age	6	%7,5	22	%27,5	28	%35
SR39; The use of technology in learning makes learning fun.						

The advantages of mobile vehicle use in learning are collected in 6 categories in line with the responses of the students. These are the ones that are going to easy access to information, wealth of sharing, freedom of learning, technology integration into time and space independent learning, economics and education. When the advantages of mobile vehicle use are categorized in learning, easy access to information with 82.5% is the most commonly expressed advantage. 73.7% sharing wealth, 68.4% time and space independent learning, 47.5% freedom of learning, 35% technology integration into education and 30% economics are shown as advantages. Compared to students

studying in The Republic of Kosovo and Russia, students in republic of Kosovo saw easy access to information as an advantage, while students in Russia expressed the highest advantage of mobile vehicle use in learning independently of time and space.

Table 6 provides students' views on the disadvantages of mobile vehicle use in learning.

Table 6. Students' views on the disadvantages of using mobile tools in learning

Category and student opinions	**Republic of Kosova**		**Russia**		**Sum**	
	F	***%***	***F***	***%***	***F***	***%***
Technical Problems						
SK6; Lack of internet connection, interruption or failure to open the site	38	%47,5	30	%37,5	68	%85
SR1; Internet problems or running out of battery of the mobile device						
Lack of Learning Persistence						
SK19; Information is not permanent because it is easily accessible.	29	%36,2	21	%26,2	50	%62,5
SR15; As with face-to-face training, there is no learning. It's quickly forgotten.						
Information Pollution						
SK47; Not all the information accessed is reliable.	23	%28,7	35	%43,7	58	%72,5
SR30; There's information pollution on the Internet. It's hard to trust.						
Technology Addiction						
SK34; Trying to access every information through technology is kind of addictive.	8	%10	16	%20	24	%30
SR26; Constant mobile device use can cause addiction.						

The disadvantages of using mobile tools in learning are collected in 4 categories in line with the opinions of the students. These are the ones that are going to technical problems, lack of learning permanence, information pollution and technology dependence. While 85% of the students surveyed stated that technical problems were disadvantages, 72.5% defined information pollution, 62.5% did not have learning permanence and 30% defined technology addiction as a disadvantage. Compared to students studying in the Republic of Kosovo and Russia, students in the Republic of Kosovo stated that technical problems are the most

important disadvantage, while students in Russia defined information pollution as a primary disadvantage.

4 Discussion

In this study, the mobile learning trends of students studying in Republic of Kosovo and Russia were evaluated comparatively. The research findings suggest that students in the Republic of Kosovo and Russia find the use of mobile tools in learning positive.

When the field was examined in the summer, similar to the findings of this study, it was observed that there were studies that demonstrated that mobile learning was effective in improving the academic achievement of learners [22]. In a study examining the mobile learning attitudes of associate degree students in terms of various variables, it was found that the mobile learning attitudes of the learners were positive [23].

Students' views on the frequency of mobile vehicle use in learning; mobile tools are largely used by students in learning. In a different study, the use of technology by university students was discussed and it was concluded that the use of technology for social purposes was much higher than the use of it for learning purposes [24]. However, research shows that mobile learning has become increasingly common among university students in recent years [25].

Research results; It reveals that students studying in Russia in the use of mobile vehicles in learning tend to find mobile vehicle use positive and use it more frequently, in part because they learn more than students studying in the Republic of Kosovo. When the researches carried out in the field are examined; In a different study aimed at providing an overview of mobile learning and reporting current trends, results and barriers related to mobile learning, mobile learning applications in education in many countries were compared. Mobile learning applications in education in Canada, USA, Russia, Ukraine, Europe, Latin America, Africa and the Middle East, Asia and pacific regions were evaluated and the worldwide spread of mobile learning was discussed [26].

It focuses on the targeted goals targeted in Kosovo in the Republic within the scope of the training under the study of mobile gadgets learned by students. To provide the easiest transportation facility to use mobile vehicles in order to gain experience in the Republic of Kosovo. The benefit that it repeats the learning learned in Russia is independent of time and place. Structured mobile learning contributes to what you will learn as well as learning, sleeping between the student and the learning environment, which will emerge with a more personalized structure through mobile learning [27]. In another study, the advantages of mobile devices in teaching were categorized as rapid access to information, interoperability and portability [28].

Students' views on the disadvantages of using mobile devices in learning are divided into 4 categories. Students studying in the Republic of Kosovo reported opinions pointing out technical problems, lack of learning permanence, information pollution and technology addiction, respectively, from the most to the least. Students studying in Russia; again, when ordered from most to least, they showed information pollution, technical problems, lack of learning permanence and technology addiction as disadvantages. In a study in the literature, which includes student views on the use of mobile devices in education, the problems encountered while using mobile devices in practice were revealed. Problems that students frequently encounter in the research; small screen size, expensive internet access, and inability to view all kinds of content [28].

5 Conclusion

Mobile technologies support individual and collaborative learning thanks to their rapidly developing applications and easy network access, and give individuals the opportunity to

research, share and access information whenever they want. Research on the use of mobile devices in education and the findings of this research reveal that students' mobile learning tendencies are high. It is seen that the students of the physical education teaching department studying in the Republic of Kosovo and Russia have a positive attitude towards the use of mobile devices in education and mostly use them. When comparing the two countries, students in Russia use mobile devices more in education than students in the Republic of Kosovo. Students from both countries expressed their views on the advantages and disadvantages of using mobile devices in education under the same categories. This research reveals that the mobile learning tendencies of the students studying in both countries are similar.

6 Recommendations

Experimental studies that reveal the effect of mobile learning are of great importance in terms of spreading mobile learning. In addition, the evaluation of mobile learning tendencies of students studying in different countries and in different disciplines will contribute to the improvement of the education quality of the studies in the field of mobile learning and the adoption of an education approach worthy of the technology age. In addition, identifying and analyzing the issues that individuals hesitate in accepting and using mobile technologies, therefore, is effective in eliminating the limitations in this regard.

7 References

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8 Authors

Shemsedin Vehapi is an associate professor of physical and sport education at AAB College, Industrial Zone Prishtina, Republic of Kosovo

Elena V. Asafova, PhD in Biology, Associate Professor of the Department of Pedagogy of Higher Education of the Institute of Psychology and Education at Kazan (Volga region) Federal University (18 Kremlyovskaya Street, 420000, Kazan, Russia). Her research interests are related to the methodology of teacher education, educational programs design, content selection. She has more than 100 published papers in Russian and International reputable journals (email: elasaf@mail.ru).

Klavdiya G. Erdyneeva is a Doctor of Education, Professor, Head of the Department of Pedagogy at Transbaikal State University (30 Aleksandro-Zavodskaya Street, 672030, Chita, Russia). She is also an Academician of the International Academy of Sciences of Pedagogical Education, Honorary Worker of Higher Professional Education of the Russian Federation. Her research interests are connected with the psychological and pedagogical foundations of health-preserving activity, genesis and theoretical and methodological foundations of pedagogy and psychology of vocational education. She has more than 100 published works in Russian and International journals (email: eridan58@mail.ru).

Andrey A. Tyazhelnikov is PhD in Medicine, Associate Professor of the Department of Medical and Social Expertise, Emergency and Outpatient Therapy at I.M. Sechenov First Moscow Medical University (Sechenov University) (8 Trubetskaya Street, 119991, Moscow, Russia). He has more than 80 published articles in Russian and International journals. His research interests are connected with health care education, health care educational technologies and environmental education (email: tyazhelnikov.kdp121@gmail.com).

Sergei P. Zhdanov, PhD in Law, Associate Professor of the Department of State and Legal Disciplines at Plekhanov Russian University of Economics (36 Stremyannyi Pereulok, 115093, Moscow, Russian Federation). His main scientific work and professional interests are related to law education, human resources and human development, professional training. Also, he actively develops and implements motivational programs. He has more than 50 articles published in different international journals (email: zhdanov120009@yandex.ru).

Albina R. Shaidullina is a Doctor of Education, Head of the Department of Foreign Languages at Almetyevsk State Oil Institute, Almetyevsk, Russia (2 Lenin Street, 423450, Almetyevsk, Russia). Her research interests for the last decade have been largely concerned with the problems of methodology in education and linguistics, e-learning environment and mentorship. She has more than 100 articles published in different international journals (email: albina-plus@mail.ru).

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Annex 1. Mobile learning trends interview form

<table>
<tr><th colspan="6">Mobile learning trends interview form</th></tr>
<tr><td colspan="6">This form; It has been prepared to make a comparative analysis of mobile learning trends of students studying in the Republic of Kosovo and Russia. It is of great importance that you answer sincerely, as it will directly affect the reliability of your answers to the research questions. Thank you in advance for your participation.</td></tr>
<tr><th colspan="6">Demographic Characteristics of Participants</th></tr>
<tr><td colspan="2">Gender :</td><td colspan="2">Female ( )</td><td colspan="2">Male ( )</td></tr>
<tr><td colspan="2">Age :</td><td>19-20 ( )</td><td>21-22 ( )</td><td>23-24 ( )</td><td>25-26 ( )</td></tr>
<tr><td colspan="2">Class of Study :</td><td>1st Class ( )</td><td>2th Class ( )</td><td>3th Class ( )</td><td>4th Class ( )</td></tr>
<tr><td colspan="3">What is your view on the use of mobile devices in learning?</td><td>I find it positive ( )</td><td>I find it İneffective ( )</td><td>I find it negative ( )</td></tr>
<tr><td rowspan="2">What is your view on the frequency of mobile use in learning?</td><td>I always use</td><td>I use often</td><td>I sometimes use</td><td>I rarely use</td><td>I never use</td></tr>
<tr><td>( )</td><td>( )</td><td>( )</td><td>( )</td><td>( )</td></tr>
<tr><td colspan="6">1. What are your views on the advantages of using mobile devices in learning?
……
……
……</td></tr>
<tr><td colspan="6">2. What are your views on the disadvantages of using mobile devices in learning?
……
……
……</td></tr>
</table>