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## An Investigation of Social Studies Teacher Candidates' Use of Mobile Instant Messaging Within the Framework of the Technology Acceptance Model: The Case of WhatsApp

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### ABSTRACT

The aim of this study is to examine the acceptance of Social Studies teacher candidates for using short message services in education within the framework of the Technology Acceptance Model with the example of WhatsApp. The research was carried out in the case study model, one of the qualitative research methods, and the use of WhatsApp for educational purposes by Social Studies teacher candidates was evaluated with the findings obtained from the data collected from 30 pre-service teachers with an open-ended interview form created within the framework of the Technology Acceptance Model. The data were analyzed and interpreted using descriptive and content analyses. It was discovered that social studies teacher candidates used WhatsApp mostly for sharing about courses, chatting, sharing photos and videos, voice and video calls, and status updates/following people, and that their educational purposes were sharing information/announcements, talking about assignments, collaboration, exchanging ideas, and communication. It was observed that social studies teacher candidates found the use of whatsapp for educational purposes useful in terms of sharing information, exchanging news on developments related to courses, saving time, increasing communication and cooperation, creating group awareness, and exchanging ideas. The participants stated that the WhatsApp application was preferred in terms of economy, prevalence, functionality, and performance and that they would use it for educational purposes in their future professional lives, to establish teacher-student interaction, teacher-parent interaction, and student-student interaction.

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## **Sosyal Bilgiler Öğretmen Adaylarının Mobil Anlık Mesajlaşma Servisi Kullanımının Teknoloji Kabul Modeli Çerçevesinde İncelenmesi: WhatsApp Örneği**

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### **ÖZET**

Bu araştırmanın amacı Sosyal Bilgiler öğretmen adaylarının eğitimde kısa mesaj servislerini kullanmaya yönelik kabullerinin WhatsApp örneği ile Teknoloji Kabul Modeli çerçevesinde incelenmesidir. Araştırma nitel araştırma yöntemlerinden durum çalışması modelinde gerçekleştirilmiş olup, Sosyal Bilgiler öğretmen adaylarının eğitim amaçlı WhatsApp kullanımı Teknoloji Kabul Modeli çerçevesinde oluşturulan açık uçlu görüşme formu ile 30 öğretmen adayından toplanan verilerden edilen bulgularla değerlendirilmiştir. Araştırma kapsamında toplanan veriler betimsel ve içerik analizi yoluyla yorumlanmıştır. Araştırma sonuçlarından elde edilen bulgular incelendiğinde sosyal bilgiler öğretmen adaylarının WhatsApp uygulamasını en çok derslerle ilgili paylaşım, sohbet, fotoğraf paylaşımı, video paylaşımı, sesli görüşme, görüntülü görüşme, durum paylaşımı-kişileri takip etme amacıyla kullandığı, eğitim amaçlı ise derslerle ilgili bilgi/duyuru paylaşımı, ödev paylaşımı, işbirliği, fikir alışverişi yapma ve iletişim kurmak amacıyla kullandığı görülmektedir. Sosyal bilgiler öğretmen adaylarının eğitim amacıyla kullanımlarına ilişkin kullanışlılık algısına yönelik bulgular incelendiğinde öğretmen adaylarının en çok bilgi paylaşımı, derslere ilişkin gelişmelerle ilgili haber alışverişi, zaman kazandırması, iletişimi ve işbirliğini artırması ve grup bilinci oluşturması, fikir alışverişi açısından kullanışlı buldukları, ekonomiklik, yaygınlık, işlevsellik ve performans açısından whatsapp uygulamasının tercih sebebi olduğu ve ileriki mesleki yaşamlarında WhatsApp uygulamasını eğitim amacıyla öğretmen-öğrenci etkileşimi, öğretmen-veli etkileşimi, öğrenci-öğrenci etkileşimini kurmak amacıyla kullanacaklarını belirtmişlerdir.

**Anahtar Kelimeler:** Sosyal Bilgiler, Teknoloji Kabul Modeli, WhatsApp, Çevrimiçi Öğrenme, Uzaktan Eğitim

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### **MAKALE BİLGİSİ**

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## Introduction

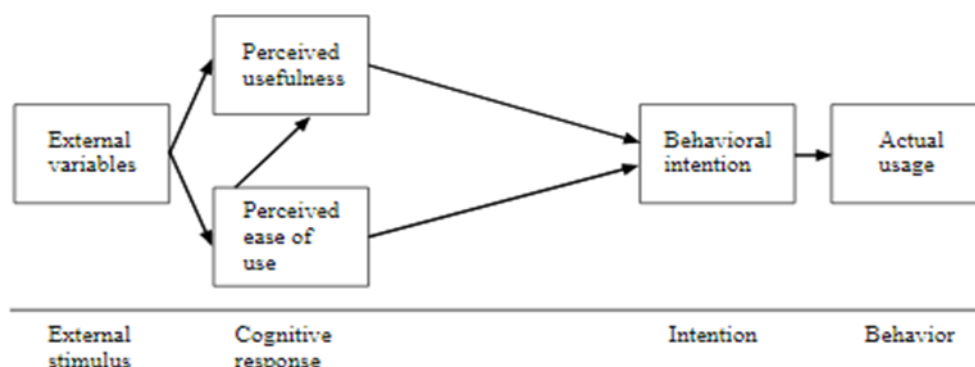
Because of the exponential advancement of technology, the use of computers and the internet has become a requirement, and mobile devices have added a new dimension to learning environments due to their ease of access and portability (Saran, Seferolu, & Çağiltay, 2009). Mobile technologies have become a part of everyday life by bringing a new potential to educational settings and have provided the opportunity to learn anywhere, anytime (Çakır, 2011). Parallel to the widespread use of mobile devices in everyday life, mobile learning content evolves daily. The facilitation of mobile devices to access information and interaction has also supported the use of these technologies in education (Demir & Akpınar, 2016). Modern people's social and economic lives have changed dramatically as a result of the progression of mobile devices and wireless technologies (El-Hussein ve Cronje, 2010). Mobile learning offers new opportunities for developing learning environments, such as linking people in the physical and virtual worlds, forming learning groups among people in motion, and delivering expert resources on-demand (Sharples, Arnedillo-Sánchez, Milrad & Vavoula, 2009). Mobile learning uniquely allows for personalized learning to take place anywhere, anytime. It can also be used to enhance, stimulate or diversify traditional lessons (Attewell, 2005). Traxler (2005) defined mobile learning as “any educational provision where the sole or dominant technologies are handheld or palmtop devices” (p. 262). Mobile learning allows the learners to construct knowledge and their own learning (Sharples, 2006).

According to the statistics made by We are social and Houtsite, 52% of the world's population is mobile internet users, 67% mobile device users and 53% mobile social media users. WhatsApp is also among the top three most popular social media platforms and ranks first among messaging apps (We Are Social, 2019). WhatsApp is one of the technological innovations commonly used in certain mobile phones and computers. Since smartphones became mainstream, several messaging applications have emerged and WhatsApp is the most popular among them (Yeboah ve Ewur, 2014). WhatsApp is an application that runs on almost all operating systems and devices. It has been available since 2010 and is considered a social network that allows users to easily access information. Its simple operating system has made it available to users of all ages and cultures, enabling communication with anyone who has a smartphone, has internet access, and installs the application (Sayan, 2016). The use of technological devices and environments in education is undoubtedly closely related to individuals' perception of this technology or environment. When the literature was reviewed, it was observed that technology acceptance and adoption were tried to be explained with models such as the theory of reasoned action and the technology acceptance model.

According to the technology acceptance model, two factors influence a user's decision to use a system: perceived ease of use and perceived usefulness. Perceived ease of use has a causal effect on perceived usefulness. For example, the design features of a technology directly affect perceived usefulness and perceived ease of use. Perceived usefulness; Perceived ease of use, which would improve the work of an individual if he used a system; It is the belief that if an individual uses a certain system, their physical and mental efforts will

decrease. Perceived ease of use directly affects perceived usefulness, because a system that is easy to use if all other conditions are equal allows the user to improve performance (Davis, 1985). The representation of the model is represented in Figure 1.

**Figure 1:** *Technology Acceptance Model (Davis & Vankatesh, 1996)*



When the literature was reviewed, it was discovered that many studies regarding the acceptance of technological applications for use in education were investigated within the context of the Technology Acceptance Model. As a result of the study examining the acceptance of Facebook for use in higher education by Sharma, Joshi, and Sharma (2016), it was seen that resource sharing was the most effective determinant in the decision to use Facebook in higher education, followed by perceived usefulness, perceived pleasure, cooperation and social impact. In addition, it has been determined that the most important predictors of Facebook's adoption are collaboration, resource sharing, perceived pleasure, social impact and perceived usefulness.. As a result of the study conducted by Sánchez, Cortijo and Javed (2014) to determine the perception of students towards the academic use of Facebook, it was determined that the most important factors affecting the adoption of Facebook are, in turn, social impact, communicating with other people or maintaining them.. In the study conducted by Chang, Yan, and Tseng (2012) on the acceptance of mobile learning in language education, the authors reported that perceived discomfort, perceived ease of use, and perceived benefit had a significant positive effect on attitude towards using. As the literature was reviewed, it was discovered that there were several studies conducted on the use of WhatsApp in educational environments (Susilo, 2014; Sayan, 2016; Hamad, 2017; Coleman & O'Connor, 2019; Madge et al., 2019; Chan, Yong & Harmizi, 2020; Al-Marroof, 2021). However, studies on the use and acceptance of WhatsApp application in Social Studies education are limited in the literature. Therefore, this study aims to investigate pre-service teachers' use of WhatsApp applications for educational purposes within the framework of Technology Acceptance model components. This study is expected to contribute to the field in determining the aims and acceptances of WhatsApp for educational purposes of Social Studies teacher candidates.

## Method

### Research Design

The case study method was employed in this qualitative study. Qualitative research can be described as "research in which qualitative data collection methods such as observation, interview, and document analysis are used, and a qualitative process is followed to reveal perceptions and events in their natural environment in a realistic and holistic manner". Case study is a research method that allows the researcher to investigate a phenomenon or event in detail focusing on how and why questions and without interfering with the subject (Yıldırım & Şimşek, 2011).

One of the important points in qualitative research is ensuring the validity and reliability of the study. In a case study, the evidence about the collected data is presented for construct validity while, for internal validity, the results and evidence about the inferences are clearly presented in a way that others can reach. External validity is obtained by proposing a theory or conceptual model based on the results and the reliability of the study is ensured by clearly presenting the processes followed in the research (Yıldırım & Şimşek, 2011). The validity of this study was provided by presenting evidence by making quotations from the collected data. The reliability of the study was ensured by expressing the path followed in the study clearly and clearly.

### Study Group

The study group consisted of 30 teacher candidates selected from Social Studies teacher candidates who were enrolled in a public university in the 2019-2020 academic year. In order to determine the study group of the study, convenience sampling (Yıldırım & Şimşek, 2011), one of the purposeful sampling methods, was used. Sample selection was based on voluntariness. Personal information about the participants is presented in Table 1.

**Table 1:** Demographics of the participants

		f	%
Gender	Female	17	56.6
	Male	13	43.3
Year	1. year	8	26.6
	2. year	7	23.3
	3. year	8	26.6
	4. year	7	23.3
How many years have you been using WhatsApp?	1-3 years	7	23.3
	3-6 years	20	66.6
	6-9 years	3	10
Time spent on Whatsapp (Daily)	0-1 hour	5	16.6
	1-3 hours	18	60
	3-6 hours	7	23.3
		30	100

According to Table 1, 56.6% of the teacher candidates participating in the study were female students and 43.3% were male students; 26.6% were 1st-year students, 23.3% 2nd-

year students, 26.6% 3rd-year students, 23.3% 4th-year students. Moreover, 23.3% of the teacher candidates participating in the study used WhatsApp for 1-3 years, 66.6% for 3-6 years, 10% for 6-9 years; 16.6% of them used WhatsApp daily for 0-1 hour, 60% for 1-3 hours, and 23.3% for 3-6 hours.

### **Data Collection Tool**

In this study, a questionnaire developed by the researchers and consisting of open-ended questions was used. While creating the data collection tool, the literature was first reviewed and the research questions were created according to the Technology Acceptance Model. The draft of the questionnaire was evaluated by a Turkish language expert in terms of language and expression. After the first revision, it was examined by an educational research expert and its final form was given in line with the expert's opinion. In the data collection tool, besides the demographic information of the students, there were 10 short answer and open-ended questions in total related to the duration of WhatsApp usage, usage purposes and, the questions created within the framework of the Technology Acceptance Model (usefulness, ease of use, intention to use, etc.).

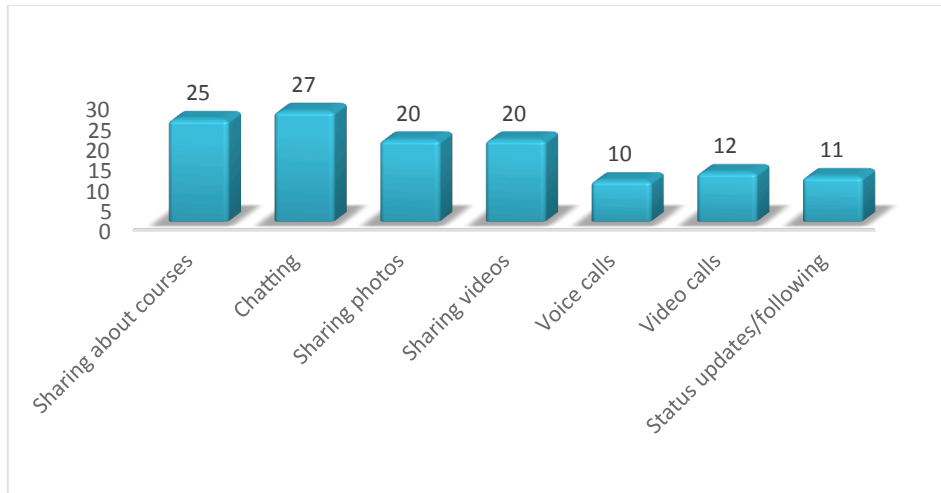
### **Data Analysis**

In data analysis, short answer questions were visualized in tables by calculating frequency and percentage values while descriptive and content analyses were used together for open-ended questions. Pre-service teachers were coded as S1, S2, S3... before the data analysis, and opinions of Social Studies pre-service teachers were included in content analysis. While analyzing the data, the answers given were coded and compared separately by the researchers, and according to the formula "(Consensus / Consensus + Disagreement)" proposed by Miles and Huberman (1994), it was determined that there was 92% agreement between the coders. According to Yıldırım and Şimşek (2006), in order to ensure reliability in such studies, compliance of at least 70% is required. In this context, it can be said that a high level of reliability has been achieved in the study.

## **Findings and Interpretation**

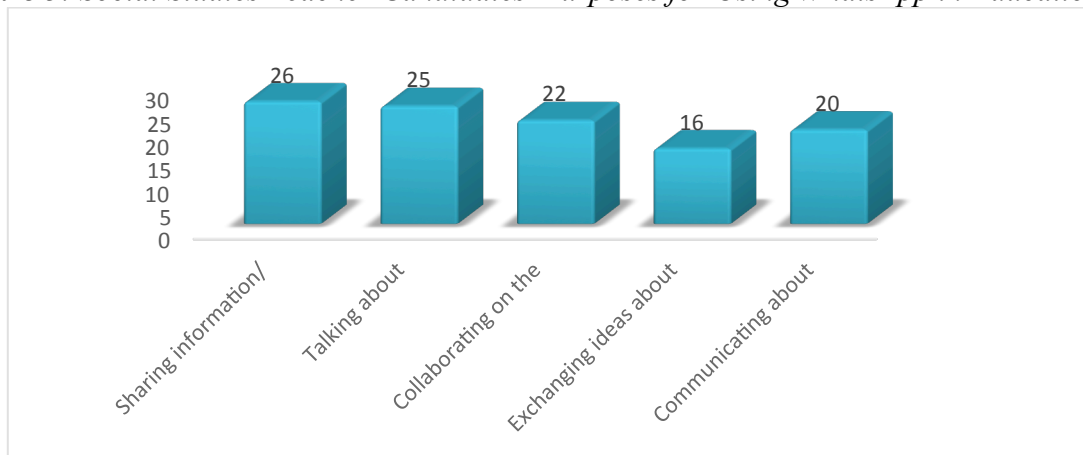
### **Findings and Interpretations Regarding the Purposes of Using WhatsApp™ by Social Studies Teacher Candidates**

*Figure 2: Social Studies Teacher Candidates' Purposes for Using WhatsApp*



As seen in Figure 2, the purposes of participant students for WhatsApp use were as follows: 25 students (83.3%) for sharing about the courses, 27 students (90%) for chatting, 20 students (66.6%) for sharing photos, 20 students (66.6%) for sharing videos, 10 students (33.3%) for voice calls, 12 students (40%) for video calls, 11 students (36.6%) for status updates/following people.

**Figure 3:** Social Studies Teacher Candidates' Purposes for Using WhatsApp in Education



As seen in Figure 2, the purposes of participant students for WhatsApp use were as follows: 26 students (86.6%) for sharing information/announcements about the courses, 25 students (83.3%) for talking about assignments, 22 students (73.3%) for collaborating on the courses, 16 students (53,3%) for exchanging ideas about the courses, and 20 students (66.6%) for communicating about the courses.

### Findings and Interpretations Regarding Perceived Usefulness

**Table 2.** Student views on the perceived usefulness of using WhatsApp for educational purposes

Perceived Usefulness	f	%
Increasing cooperation	6	7.8
Increasing communication	11	14.4
Time-saving	18	23.6

Information sharing	22	28.9
Exchange of information about course updates	16	21.05
Socializing	1	1.3
Cost-effective	2	2.6
Total	76	100

When Table 2 was reviewed, it was observed that students found WhatsApp very useful in terms of reaching the shares related to information and assignments in the fastest way possible. Most of the students stated that WhatsApp groups for educational purposes save time. It is stated that it is very convenient for prospective teachers to be immediately informed about the developments regarding the courses.

The teacher candidates stated that cooperation and group awareness increased thanks to the ability to meet with many people at the same time. Some student views about this are as follows:

S2: *“The groups we have formed about the courses enable us to be in constant communication, increase cooperation and group awareness.”*

S3: *“We can be informed about the courses in a short time, thanks to WhatsApp groups, we can easily share information about the lessons with all our friends.”*

It is stated that being a member of WhatsApp groups for educational purposes also increases communication between students. It is asserted that it provides the opportunity to exchange information and ideas in situations where students cannot go to school or on any other issue.

S6: *“It provides information flow easily and speeds up communication and enables collaboration”*

S8: *“Even if I'm not at school, I can instantly be informed about everything, it allows me to access all kinds of information about the courses early.”*

S9: *“Thanks to the group we created with our classmates, we share slides, homework, lecture notes, information, etc., and exchange ideas on all kinds of issues.”*

S12: *“Being able to exchange information with more than one person at the same time is very convenient and saves time, and it also makes it easier for us to collaborate on group assignments.”*

S14: *“When there is an announcement, many people can be reached in a short time, we cooperate while sharing homework and task distribution. I am aware of the announcements in a short time. When there are topics I don't understand, my friend records and sends it to me and helps me understand it.”*

S27: *“I am currently a member of a group for the Public Personnel Selection Exam (an exam for teacher certification). Lecture notes and questions from different publications are shared in this group. In this way, I see the lecture notes and questions of many publications.”*

S19: *“Thanks to this application, we can transfer information to the people we want to reach, so I can get and share information in the cheapest and easiest way.”*

S25: *“I find the Whatsapp application useful, it makes our job very easy in terms of fast communication, storing information, sharing resources, question-answer, and group work.”*

A pre-service teacher stated that she wasted her time as a result of sharing unnecessary things:

S5: *“I find it partially useful because often unnecessary things are shared, which makes us waste our time.”*

### **Findings and Interpretations Regarding the Ease of Use**



**Table 3.** Student views on the perceived ease of use of WhatsApp for educational purposes

Perceived ease of use of WhatsApp	f	%
Cost	15	24.5
Functionality	16	26.2
Performance	12	19.6
Prevalence	18	29.5
Total	61	100

When Table 3 is examined, it is seen that teacher candidates find the WhatsApp application easy to use in terms of economy, prevalence, functionality, and performance. When the opinions of students on the subject are examined, the ability to talk to many people at the same time shows that WhatsApp groups provide many advantages in terms of education. At the same time, it is seen that the low cost of the application and its wide use is a reason for preference. As the preservice teachers stated that they did not experience any problems during file sending in the WhatsApp application and they were able to send the files very quickly, it can be said that they found the WhatsApp application good in terms of performance:

S20: *“It is a useful and practical application, it is a great advantage to be able to create a group, and it is great convenience that everyone has it”*

S18: *“Practical, useful and fast application. It is also affordable because our internet package is limited and WhatsApp does not use too many bytes.”*

S16: *“I find the feature of creating groups for courses very useful, it provides convenience in many issues, I can reach everyone because everyone uses WhatsApp.”*

S12: *“It is cost-effective and very fast to send files, and being able to communicate with many people in the group at the same time makes it very easy.”*

S24: *“I think it is a practical application because it is economical and enables fast communication with people. At the same time, being able to reach more than one person at the same time is very useful in lessons.”*

S9: *“I can reach many people at the same time and in a short time, I can share with less internet spending, being able to meet with many people simultaneously and seeing their comments allows us to develop different perspectives.”*

S26: *“It makes our job very easy to be able to send all kinds of documents such as images, pdf, videos without any problems. For example, my friends can take and send a photo of a lecture note that I do not have, and I get it in a short time.”*

S2: *“WhatsApp provides quick communication on all kinds of issues related to education, offers the opportunity to share homework/notes, and I think this situation provides better equality of opportunity among students.”*

#### *Findings and Interpretations Regarding Behavioral Intention to Use*

**Table 4.** Opinions of Social Studies teacher candidates regarding behavioral intention for using WhatsApp in education

Behavioral intention	f	%
To establish teacher-student communication	10	45.4
To establish teacher-parent communication	8	36.3
For student-student communication	3	13.6

To communicate with teachers about the courses	1	4.5
Total	22	100

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When Table 4 is examined, it is seen that prospective teachers stated that they will use the WhatsApp application for educational purposes the most for establishing communications of teacher-student, teacher-parent interaction, and student-student. In the sub-theme of teacher-student interaction, some preservice teachers stated that they will use WhatsApp to help students with the missing points in the lesson and to communicate with students on every subject.

S1: *“Yes, I intend to use it, I plan to support my students outside of school by forming a group”*

S16: *“Yes, I intend to use it, because I may have the opportunity to transfer information about topics that I cannot cover in the course in this environment.”*

S15: *“Yes, I intend to use it in my professional life. I can communicate with my students by using Whatsapp for assignments, activities, exams.”*

S22: *“Yes, I intend to use it, when I make an announcement, I can announce it to everyone in a short time or I can make the necessary explanation about the issues that they do not understand about the assignments, or the students can contact each other”*

In the sub-theme of teacher-parent communication, prospective teachers stated that they would communicate with parents on all kinds of issues such as requests, exchange of ideas, and homework assignments:

S20: *“I will use it in the school environment to exchange ideas with parents, share homework, book suggestions, and receive complaints and suggestions from parents.”*

S25: *“I plan to be in constant communication with parents in my teaching life, I can share detailed information about my students with parents via Whatsapp.”*

S9: *“I use it to communicate about students (complaints, suggestions, greetings, etc.) by forming a group with parents.”*

The preservice teachers stated that they will also use WhatsApp application for issues such as communication between students and exchange of information and ideas:

S30: *“... thanks to the class group that I will create, students can meet and exchange information among themselves, thus creating a collaborative working environment for them.”*

A pre-service teacher stated that she was against using Whatsapp too much and it wasted time in case of excessive use:

S18: *“I can use it when necessary but I am against using it too much because it sometimes wastes time when used for unnecessary things.”*

### **Conclusion and Discussion**

The findings of the study showed that 23.3% of the teacher candidates participating in the study used WhatsApp for 1-3 years, 66.6% for 3-6 years, 10% for 6-9 years. Also, 16.6% of the participants used WhatsApp daily for 0-1 hours, 60% for 1-3 hours, and 23.3% for 3-6 hours. Shambare (2014) reported that most of the participants used Whatsapp more than 3 hours a day. Prensky(2001) refers to today's students as "digital natives," claiming that video games, e-mail, the internet, smart phones, and text messages are all a part of their daily lives.

According to the findings obtained in the study, Social Studies teacher candidates use Whatsapp for sharing about the courses (83.3%), chatting (90%), sharing photos (66.6%), sharing videos (66.6%), voice calls (33.3%), video calls (40%) and status sharing / following people (36.6%). This result is similar to the results of the study conducted by Çağlak (2019) on university students. In the study conducted by Shambare (2014), it was also stated that the

participants mostly used WhatsApp to chat and to share pictures and videos. Sebetçi et al. (2018) reported that students generally used the WhatsApp application for sharing personal information/photo (63.3%), homework/project studies (59.5%), discussing (60.9%) and sharing (59.5%) subjects related to the course/homework and asking questions (72.3%).

When the data obtained from the research results were examined, Social Studies teacher candidates stated that they used WhatsApp for educational purposes in order to share information/announcements about the courses (86.6%), talk about assignments (83.3%), collaborate on the courses (73.3%), exchange ideas about the courses (53%, 3), and communicate about the courses (66.6%). This result is in parallel with the study conducted by Sebetçi et al. (2018). As a result of this research, it is seen that students prefer WhatsApp application very often (85.7%) in their education process. In the study conducted by Amry (2014), it was concluded that WhatsApp positively affected learning with the convenience it provides in matters such as information sharing.

When the findings regarding the pre-service teachers' perception of usefulness for using WhatsApp for educational purposes were examined, they stated that the pre-service teachers found the application most useful in terms of sharing information, exchanging news about the developments regarding the courses, saving time, increasing communication and cooperation, creating group awareness, and exchanging ideas. When the literature is examined, it is observed that WhatsApp supports group awareness and collaborative learning (Amry, 2014; Bouhnik & Deshen, 2014; Roy & Ray 2019), is very useful in sharing information and files (pictures, videos, pdf, etc.) (Adomi and Solomon- Uwakwe 2019; Ahad & Lim, 2014; Barhoumi, 2015; Bouhnik & Deshen, 2014; Gücüyeter & İskender, 2019) and is useful for fast communication (Barhoumi, 2015; Maden, 2019;). In the study conducted by Gasaymeh (2017), it was also determined that students find WhatsApp useful, easy, and fun for educational purposes. On the other hand, a pre-service teacher stated that she was against using the WhatsApp application too much except when necessary and that it wasted time in case of excessive use. When the studies on the subject are examined, it is seen that if Whatsapp is not used carefully, it causes wasting time (Blabst & Diefenbach 2017; Gon & Rawekar, 2017; Yeboah & Ewur, 2014).

Another finding of the study is that teacher candidates find WhatsApp easy to use in terms of economy, prevalence, functionality, and performance. When the opinions of students on the subject are examined, the ability to talk to many people at the same time shows that Whatsapp groups provide many advantages in terms of education. Moreover, WhatsApp is very popular among university students (Gasaymeh, 2017; Yeboah & Ewur, 2014) and reached two billion users by 2020 (WhatsApp, 2020). Whatsapp's features of simplicity, being low cost, and being widely used among teachers and students are shown as the reasons for preference (Bouhnik and Deshen, 2014). Since the preservice teachers reported that they had no trouble sending files in the WhatsApp application and that they were able to transfer the files easily, it can be concluded that they considered the WhatsApp application to be successful in terms of efficiency. This result is consistent with the findings of Maden (2019). concluded that all Turkish pre-service teachers used the WhatsApp application for reasons such as messaging convenience, common use, and functionality.

In the findings obtained from the research results, most of the teacher candidates stated that they would use Whatsapp for educational purposes in their future lives and stated that they would use it mostly for teacher-student interaction, teacher-parent interaction, student-student interaction. In the study conducted by Rosenberg and Asterhan (2018), it is seen that WhatsApp use in education has an important place in teacher-student and student-student interaction. In the research conducted by Çelenk (2003) on the role of families on student's

school achievement, it was concluded that the school achievement of the children of parents who meet with the school on a common program and regularly communicate and support their children in line with this common understanding was higher. According to Balcı and Tezel Şahin (2018) Whatsapp groups can be used for teacher-family interaction and communication, providing great convenience to teachers in communicating quickly and easily and informing parents collectively. Ocak (2019) also concluded that WhatsApp parent groups can be an effective tool for parents in primary schools if they are managed effectively by reaching a consensus on group rules when schools cannot meet the needs of parents.

### **Suggestions**

The following recommendations have been developed in line with the results of the study:

- According to the results of the research, it was seen that teacher candidates thought to use WhatsApp in their professional life, especially in teacher-parent communication. Accordingly, research can be conducted on the use of text message services such as WhatsApp in teacher-parent communication and the opinions of teachers and parents.
- It is observed that studies on the use of applications such as WhatsApp in teacher-student and student-student interaction are generally limited to higher education. Studies for different educational levels can be conducted.
- Applications such as WhatsApp can be used for coordination, communication, and exchanging information between teachers.
- Teachers can create class groups to communicate with students and parents.

### **References**

- Adomi, E. E., & Solomon-Uwakwe, B. (2019). Work related Whatsapp groups as knowledge sharing platforms among Librarians in Selected Federal Universities in Nigeria. *Online Submission*, 1, 11-19.
- Ahad, A. D. & Md Ariff Lim, S. (2014). Convenience or nuisance?: The 'Whatsapp' dilemma. *Procedia-Social and Behavioral Sciences*, 155, 189-196.
- Al-Marroof, R. A., Arpaci, I., Al-Emran, M., Salloum, S. A., & Shaalan, K. (2021). Examining the Acceptance of WhatsApp Stickers Through Machine Learning Algorithms. In *Recent Advances in Intelligent Systems and Smart Applications* (pp. 209-221). Springer, Cham.
- Amry, A. B. (2014). The impact of Whatsapp mobile social learning on the achievement and attitudes of female students compared with face to face learning in the classroom. *European Scientific Journal*, 10 (22), 1857- 7431.
- Attewell, J. (2005). *Mobile technologies and learning*. London: Learning and Skills Development Agency, 2(4), 44-75.
- Balcı, A., ve Tezel Şahin, F. T. (2018). Öğretmen-Aile İletişiminde Whatsapp Uygulamasının Kullanımı. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi*, 38(2), 749-776.
- Blabst, N., & Diefenbach, S. (2017, July). *Whatsapp and Wellbeing: A study on Whatsapp usage, communication quality and stress*. In *Proceedings of the 31st British Computer Society Human Computer Interaction Conference* (p. 85). BCS Learning & Development Ltd..
- Bouhnik, D & Deshen, M. (2014). Whatsapp goes to school: Mobile instant messaging between teachers and students. *Journal of Information Technology Education: Research*, 13, 217-231.

- Chang, C. C., Yan, C. F. & Tseng, J. S. (2012). Perceived convenience in an extended technology acceptance model: Mobile technology and English learning for college students. *Australasian Journal of Educational Technology*, 28(5), 809-826.
- Chan, T. J., Yong, W. K., & Harmizi, A. (2020). Usage of WhatsApp and interpersonal communication skills among private university students. *Journal of Arts & Social Sciences*, 3(2), 15-25.
- Coleman, E., & O'Connor, E. (2019). The role of WhatsApp® in medical education; a scoping review and instructional design model. *BMC medical education*, 19(1), 1-13.
- Çağlak, U. (2019). Whatsapp, Whatsapp grupları ve Kullanım Alışkanlıkları: Üniversite öğrencileri üzerine bir araştırma. *Journal of International Social Research*, 12(66), 1307-9581.
- Çakir, H. (2011). Mobil Öğrenmeye İlişkin Bir Yazılım Geliştirme ve Değerlendirme. *Cukurova University Faculty of Education Journal*, 40(2).
- Çelenk, S. (2003). Okul başarısının ön koşulu: Okul aile dayanışması. *İlköğretim online*, 2(2), 28-34.
- Davis, F. D. (1985). *A technology acceptance model for empirically testing new end-user information systems: Theory and results* (Doctoral dissertation, Massachusetts Institute of Technology).
- Davis, F. D. & Venkatesh, V. (1996). A critical assessment of potential measurement biases in the technology acceptance model: three experiments. *International journal of human-computer studies*, 45(1), 19-45.
- Demir, K., & Akpınar, E. (2016). Mobil öğrenmeye yönelik tutum ölçeği geliştirme çalışması. *Eğitim Teknolojisi Kuram ve Uygulama*, 6(1), 59-79.
- El-Hussein, M. O. M. & Cronje, J. C. (2010). Defining mobile learning in the higher education Landscape. *Educational Technology & Society*, 13 (3), 12–21
- Gasaymeh, A. M. M. (2017). University students use of Whatsapp and their perceptions regarding its possible integration into their education. *Global Journal of Computer Science and Technology*. 17(1), 0975-4172.
- Gon, S. & Rawekar, A. (2017). Effectivity of e-learning through Whatsapp as a teaching learning tool. *MVP Journal of Medical Science*, 4(1), 19-25
- Gücüyeter, B. ve İskender, M. E. Yabancı dil olarak Türkçe yazma öğretiminde anlık mesajlaşma programlarının kullanımı: Whatsapp uygulaması örneği. *Sosyal Bilimler Araştırmaları Dergisi*, 14(2), 571-590.
- Hamad, M. M. (2017). Using WhatsApp to Enhance Students' Learning of English Language" Experience to Share". *Higher Education Studies*, 7(4), 74-87.
- Maden, A. (2019). Türkçe öğretmeni adaylarının mobil iletişim alışkanlıkları: Whatsapp örneği. *Elektronik Sosyal Bilimler Dergisi*, 18(72), 1797-1811.
- Madge, C., Breines, M. R., Dalu, M. T. B., Gunter, A., Mittelmeier, J., Prinsloo, P., & Raghuram, P. (2019). WhatsApp use among African international distance education (IDE) students: transferring, translating and transforming educational experiences. *Learning, Media and Technology*, 44(3), 267-282.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks, CA: Sage.
- Motiwalla, L. F. (2007). Mobile learning: A framework and evaluation. *Computers & Education*, 49(3), 581-596.
- Ocak, H. (2019). *Okul Whatsapp grupları: Ebeveynlerin anlık grup mesajlaşma deneyimleri üzerine bir çalışma*. Yayımlanmamış Yüksek Lisans Tezi. Boğaziçi Üniversitesi Sosyal Bilimler Enstitüsü
- Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the horizon*, 9(5), 1-6.

- Rosenberg, H. & Asterhan, C. S. (2018). "Whatsapp, Teacher?"-Student perspectives on teacher-student Whatsapp interactions in secondary schools. *Journal of Information Technology Education: Research*, 17, 205-226.
- Roy, H. & Ray, K. (2019). "Whatsapp"-A supplementary teaching method in anatomy for first year medical students and students reflection on it. *International Journal of Scientific Research*, 8(7). 2277 – 8179
- Saran, M., Seferoğlu, G. ve Çağıltay, K. (2009). Mobile assisted language learning: English pronunciation at learners' fingertips. *Eurasian Journal of Educational Research*, 34, 97-114
- Sayan, H. (2016). Affecting higher students learning activity by using Whatsapp. *European Journal of Research and Reflection in Educational Sciences* Vol, 4(3), 88-93.
- Sharma, S. K., Joshi, A., & Sharma, H. (2016). A multi-analytical approach to predict the Facebook usage in higher education. *Computers in Human Behavior*, 55, 340-353.
- Sánchez, R. A., Cortijo, V. & Javed, U. (2014). Students' perceptions of Facebook for academic purposes. *Computers & Education*, 70, 138-149.
- Sebetci, O., Topal, A., Hanayli, M. C. ve Donuk, G. G. (2018). Perceptions of university students on Whatsapp in educational settings. *Route Educational and Social Science Journal*, 5(6), 63-76.
- Shambare, R. (2014). The adoption of Whatsapp: breaking the vicious cycle of technological poverty in South Africa. *Journal of economics and behavioral studies*, 6(7), 542-550.
- Sharples, M. (2006). *Big issues in mobile learning*. University of Nottingham, UK
- Sharples, M., Arnedillo-Sánchez, I., Milrad, M., & Vavoula, G. (2009). *Mobile learning. In Technology-enhanced learning* (pp. 233-249). Springer, Dordrecht.
- Susilo, A. (2014, June). Exploring Facebook and WhatsApp as supporting social network applications for English learning in higher education. Conference On Professional Development In Education (PDE2014), Widyatama University Indonesia, Open University Indonesia and Open University Malaysia.
- Topçu, E. ve Kaymakçı, S. (2018). Sosyal bilgiler öğretiminde menkıbelerin kullanılma durumuna ilişkin öğretmen görüşleri. *Erzincan Üniversitesi Eğitim Fakültesi Dergisi*, 20(1), 281-305.
- Traxler, J. (2005, June). *Defining mobile learning. In IADIS International Conference Mobile Learning* (pp. 261-266).
- Whatsapp, 2020. <https://blog.Whatsapp.com/> Erişim Tarihi: 20.02.2020
- We are social, 2019. <https://wearesocial.com/global-digital-report-2019> Erişim Tarihi: 24.02.2020
- Yeboah, J., ve Ewur, G. D. (2014). The impact of Whatsapp messenger usage on students performance in Tertiary Institutions in Ghana. *Journal of Education and practice*, 5(6), 157-164.
- Yıldırım, A. ve Şimşek, H. (2011). *Nitel araştırma yöntemleri*. Ankara: Seçkin Yayıncılık.