

# Mobile Learning and Readiness of Ongoing Foreign Language Teacher Candidates for Future Retrospective Studies

Bora Başaran<sup>1,2</sup>

<sup>1</sup> Educational Attache of Frankfurt, Ministry of National Education Turkey, Turkey

<sup>2</sup> Kennedyalle 115 PO box 60596, Frankfurt, Germany

Correspondence: Bora Başaran, Educational Attache of Frankfurt, Ministry of National Education Turkey, Turkey & Kennedyalle 115 PO box 60596, Frankfurt, Germany.

Received: January 4, 2022

Accepted: January 17, 2022

Online Published: January 19, 2022

doi: 10.5539/elt.v15n2p9

URL: <https://doi.org/10.5539/elt.v15n2p9>

## Abstract

Due to technical advancements, humanity has seen a variety of sociological transformations. In historical terms, the move to sedentary life may be categorized widely into two categories: industrial society and information society. It also indicates that these changes and advances are permanent in the educational and training contexts and that the link between teaching and technology is anchored and evolving. The specific differences of each student will be taken into account in future foreign language classrooms, as well as providing them with an active role, associating their learning, and equipping teachers with technical tools. This may be accomplished by submitting the future approach to educational settings to teacher candidates. The readiness is an essential factor, as the quality of preparation of teacher candidates and technology itself. Further technical breakthroughs have affected our everyday lives, the formation of new vehicles utilized in educational contexts, and the development of new methodologies, including today's smart tablet computers from the abacus. Today's research reflects the need to consider the potential effects of the Covid pandemic from a broader viewpoint. According to this perspective, rather than being viewed as an event, the integration of technology into education should be seen as a process influenced by variables other than only technological development. It is critical to assess the current situation in light of the history of technology and the existing situation in the present and changes throughout time as indicators of future developments. However, the extent of current data on the usage of mobile technology, which falls under the category of mobile technology, limits the reach of a retrospective cohort study (also called a historical cohort study or with a more general name longitudinal cohort study). The purpose of this study is to present data for future Longitudinal Cohort Studies by illustrating the degree of readiness of ongoing Anadolu University, Faculty of Education German as a Foreign Language Teacher Candidates.

**Keywords:** mobile learning, technology-based foreign language teaching, mobile learning willingness, German teaching, retrospective study

## 1. Introduction

Humanity has gone through many social changes throughout history due to technological advancements. When these social changes are considered in the context of history, they can be classified as transitions to resident life, industrial society, and information society. In education and learning contexts, the effects of technological advancements on social changes are also constant. This is a sign that the connection between education and technology is anchored and in continuous flux. A necessity brought with it the prerequisites for technological utilization in the Covid pandemic and instructional applications. In this regard, it has been critical for re-evaluations and forecasts of study outcomes that may include references to studies conducted before and after the pandemic. "What Schools for the Future" released in 2001 (OECD, 2001), is a document about the future of education. The Organization for Economic Cooperation and Development (OECD) proposed many possibilities for the future of schooling and education. This contribution to educational future thinking is also providing ideas today. Almost two decades after the publication, many of the essential parts are still debated. However, much has changed since the turn of 2000, both in education and in society as a whole. Procedures are not described in depth in this paper. The development tendencies in the original topic development tendencies of a reorientation of the education system or a departure of the education system were picked out and altered for this purpose during the evaluation. Consider the fundamental role of digital technology in connecting individuals and

enabling more tailored learning. In the current debate, the inquiry also suggests the relevance of individual motivation for learning achievement and considers informal and non-formal learning options. This research was carried out in the Spring of 2015-2016 at Anadolu University's Faculty of Education's German Teaching Department of Education. A total of 174 teacher candidates took part in this research. Before Covid, teacher candidates who took computer-assisted German courses were required to acquire technology interests and abilities in preparation for future professional demands, which included assessments and exercises for language instruction and the development of teaching materials. The classroom environment created for the research has enabled the observation of the readiness level. On the other hand, teacher candidates were given advice based on their individual responses to mobile technology that they may utilize in the classroom. It was believed that it would be recognized, as well as the optimal approach, program, and readiness for these needs. The information gathered in this study was also used to conduct a preliminary study amongst institutions with similar departments in order to conduct a more comprehensive survey.

## 2. Literature Review

A retrospective study was carried out a posteriori, based on knowledge about previous occurrences as the main kind of naturalistic inquiry research methods in education (Arsenault and Anderson, 1998, p. 121). Most of the time, part or all of the information has already been collected and generated in the register. A retrospective study, unlike prospective studies, does not normally need individuals to be followed into the future and frequently takes less time to complete (Flick, 2004a, 2004b, 2009). Specific population clusters can be compared for one or more outcomes in retrospective research for grounded theory and historical research (Ary et al., 2002). Retrospective cohort studies demonstrate the advantages of cohort studies and offer different advantages (Cohen, L., Manion, L., & Morrison, K., 2007);

- a. They're carried out on a lesser scale.
- b. They usually take less time to finish.
- c. They are often less expensive because most resources are allocated to data collection.
- d. They are more suitable for examining a variety of outcomes.

Study designs based on the reference period and the reference period refer to the time frame in which a study explores a phenomenon, situation, event, or problem (Kumar, 2011). The teaching of foreign languages has changed dramatically since the turn of the millennium. Educational standards, task-based language learning, output orientation, competency orientation, and comparison examinations are only a few phrases that characterize today's debate on foreign language instruction. They show that, in addition to topic didactics or language teaching and learning research, other study disciplines directly or indirectly impact foreign language education by their techniques, conclusions, and terminology. Educational teaching methods theory, in particular, should be mentioned in this context since they open the door to uncharted territories of discourse.

### 2.1 *Methods in Language Teaching*

In recent years, there has been a significant shift in perspectives in the field of research methodology. Whereas in the past, primarily various theoretically and normatively legitimated methods of foreign language teaching changed and claimed to be the best and most successful method, the role of comprehensive mediation methods will be much more skeptical and embedded in the broad plateau of the various factors favorable or aggravating the learning process (Albert/Marx, 2016). As a result, the research area didactics/methodology is increasingly founded on empirical data rather than theoretical and normative assumptions or settlements. It is thus classified as an empirical research topic. This new scientific self-understanding finds expression not least in the concurrent prominent thought and discussion of empirical research methodologies appropriate for varied challenges (Settinieri et al., 2014) for a fair assessment of the broader discourse on education, schooling, and foreign language instruction. Foreign language didactics and teaching techniques in general and the classification of research-based ideas, results, and discoveries are significant prerequisites in these domains. The given timeline is meant to serve as an orienting aid for anybody seeking an introduction to or confirmation of new or conventional aspects of foreign language instruction concerning related sciences. The timeline provides a foundation for spontaneous, straightforward access in terms of broad conceptual direction and assuring knowledge. Because of the timeline's restricted reach and a very brief explanation of foreign language teaching techniques and individuals, it's evident that it can't and shouldn't be used in place of a textbook, topic didactics, or the scope of foreign language methodology in teaching. During the timeline's creation, it was impossible to mention or reference all of the sources that contributed to the final design of the entries.

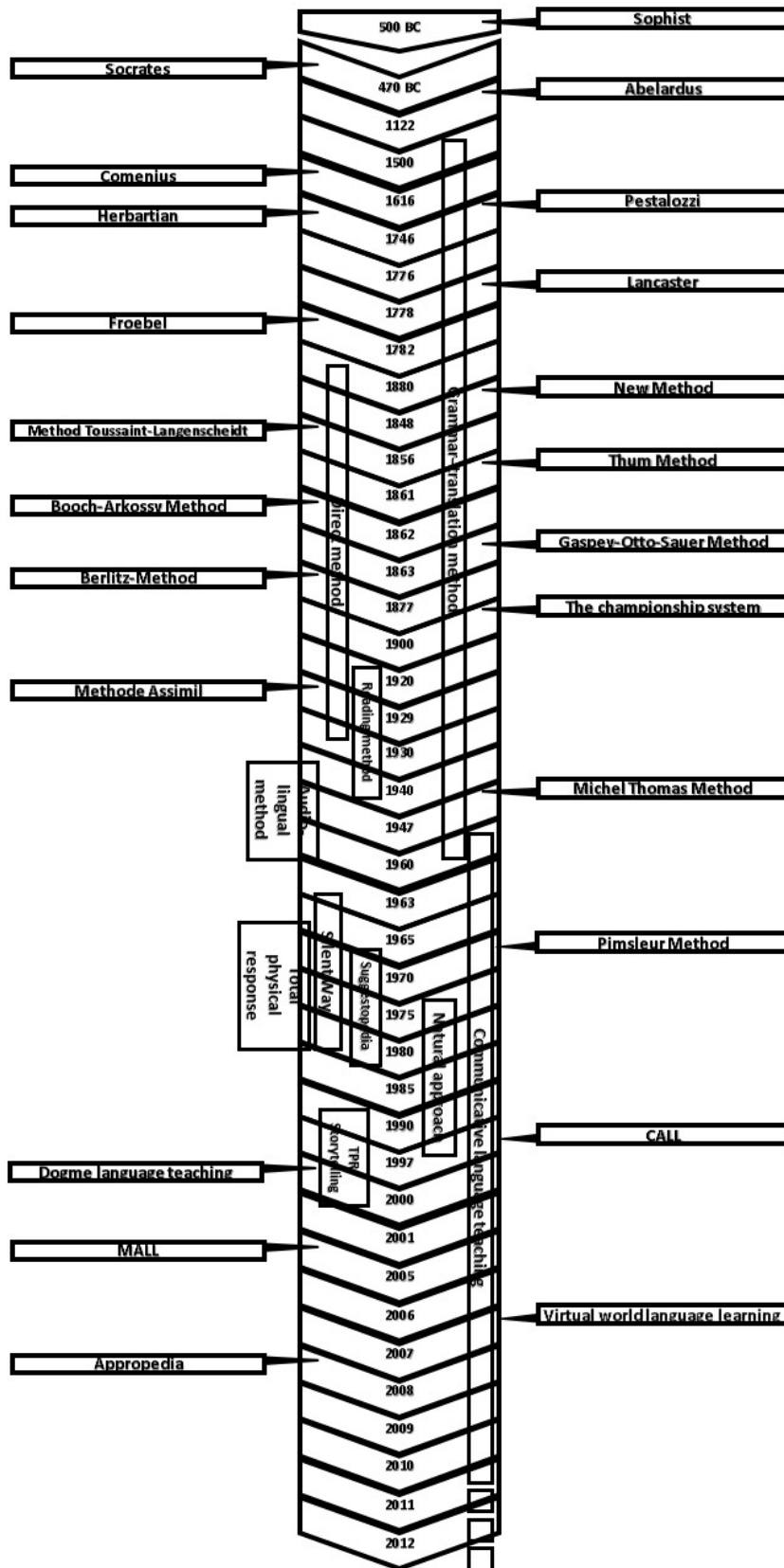


Figure 1. Timeline of Approach and Trends in Foreign Language Teaching

Despite claims to the contrary, the concept of a "language-teaching method"—a set of principles and procedures based on a theory of language and language acquisition—remains dominant in the professional literature, with task-based language teaching being the current method generally supported by methodologists. This article

proposes that language instruction be built on a set of principles and processes based on teachers' practical situated experience, reinforced by research, theory, and practice applicable to teaching and learning of any topic, including linguistics and applied linguistics.

### 2.2 Technology in Teaching

Mankind have altered the instruments utilized in the teaching settings and the teaching environments during the era of diverse technical breakthroughs from the abacus to the computers that enable today's advanced multiple processing possible. This change also led to the development of new teaching methods. From this perspective, technology integration in the classroom should be viewed as a process rather than an event. As a result, it's critical to look at the past and current state in the present and disclose future tendencies in a specific time interval. It is plausible that "teaching technologies" is to be regarded to understand the technique as the method itself as a notion of technologies employed for teaching purposes. One can develop a timetable without explaining the practices and trends along this timeline, a sample table similar to the following, in the historical context of instructional technology, such as Saettler (1990).

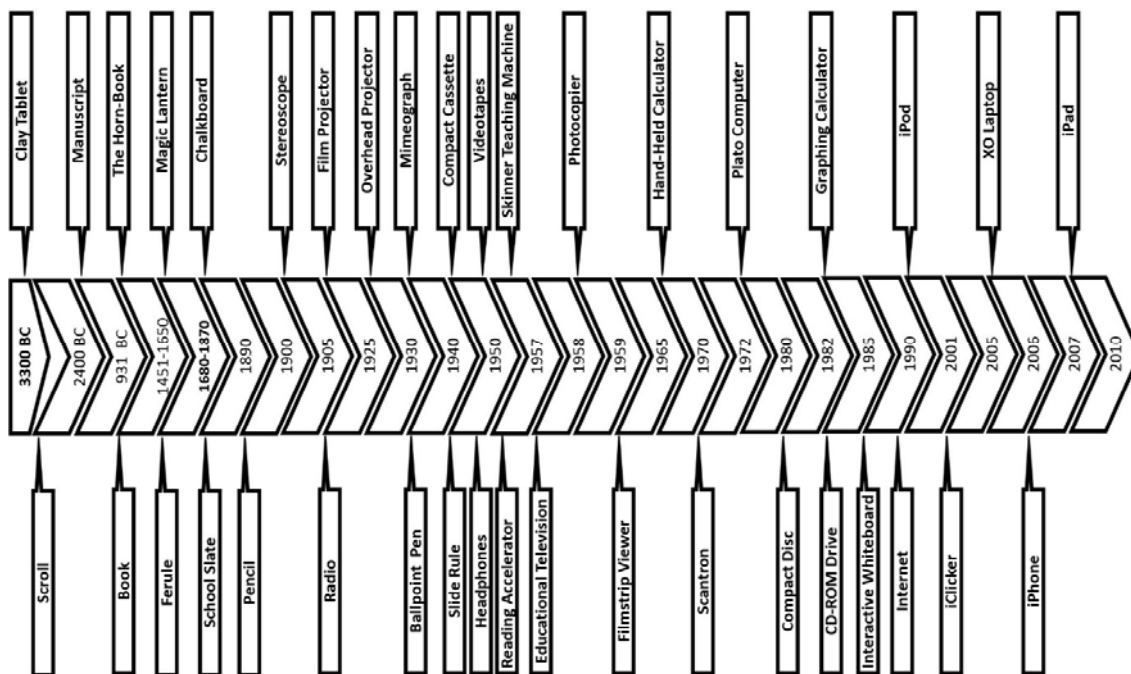


Figure 2. Timeline of Technologies used for teaching

Because the presented timeline makes no claim to completeness, it is subject to expansion and completion; yet, the existing timetable can give some insight on crucial facets. One of the most exciting aspects is that the weight of theory or methodology and technological improvements are separated before and after 1914. This is not to say that there was no technical advancement before 1914, such as in 1592, for example. The chalkboard, textbooks, maps, television letters, radio, and audio cassettes are examples of technology applied in education. Conceptually speaking, it is challenging to find a generally accepted definition in the field of teaching technologies. Although some common concepts are used in the literature, the name and definition of the field are an ongoing topic of discussion. While some researchers prefer to call this area "Educational Technology" (Gentry, 1995; Molenda, 2006), and some of them used the phrase "Teaching Technology" (Reiser, 2002; Seels and Richey, 1994). Fundamentally, one of the problems that prevent definitions from becoming conventional is that definitions have changed and developed over the years based on technological developments. For example, in the 1970s, teaching technology was defined by highlighting tools and method components (Cuban, 1986). Still, it now includes many new elements, such as the designation made by the Commission on Instructional Technology during the same time period, the inclusion of specific objectives, and providing more effective teaching (Seels and Richey, 1994). In the early 2000s, education technology was viewed as a more comprehensive framework than teaching technology (Bay et al., 2021, p. 185), and it was characterized as a broader idea than teaching (Molenda, 2004).

While it is still debatable whether teaching technology is a subset of educational technology, it is a rapidly developing field that has been accepted as a more commonly used term rather than educational technology, especially when considering the evolution of the definition of teaching technology from the 1900s to the 1960s;

while teaching technology was defined as a tool during these years, it turns out that it was accepted as a method between 1960 and 1970 (Reiser, 2002). Due to the scale and complexity of the information, bringing definitions up to date, especially including pertinent citations and abbreviations that have expanded dramatically in recent years, is a separate study issue.

It should not be difficult to predict that in our century, when changes and developments in every context occur at a faster rate, teaching innovations will continue and that they will be left to modern technologies and methods that can adapt to technological developments rather than traditional technologies and methods (Kennewell, 2001; Watson, 2001; Cartwright ve Hammond, 2003; Aytunga, 2004; Demiraslan, 2005; Herzig, 2004). The Basic Law of National Education emphasizes foresight and the transformation of these predictions into the use of technological infrastructures and modern methods and the importance of continuously developing curriculums and educational methods based on scientific and technological principles. The time frame between the emergence of technologies in the timeline, which does not claim to be complete in content, is gradually narrowing.

The compatibility of modern technologies in education according to different disciplines and thus the transformation that will affect societies from technological, economic, and social perspectives constitutes a field of study in itself and a very comprehensive process that many countries focus on, especially within the framework of education and training. The fundamental issue with this process in recent years has been that the theoretical approaches required to adapt associated technologies to educational life have progressed quicker than the rate of implementation. In conclusion, the development of technologies that can be applied in the classroom is outpacing their adaption to teaching environments. In this practice, teacher candidates in institutions that train teachers can be sampled as encountering smart boards when they are teachers while giving them the necessary experience in using a Projector (Beamer). Although analyzing our country's dependence on teaching technologies in depth is not the purpose of this research, it also reveals the role universities should undertake in social changes due to the technological developments summarized and emphasized up to this point and the inability to produce solutions in parallel with this study.

Universities lead the developments in the technology and education of countries based on the idea that societies are pioneering institutions with educational, cultural, economic, social, political, and administrative guidance; it has a great responsibility to produce solutions in the fields of teaching technologies with national resources and to open them to its stakeholders. Today, the level of development of societies is mainly measured by the science and technology they produce. This product can only be achieved through education and training (Karasar, 2004). Anadolu University Faculty of Education teacher candidates strive to create contemporary approaches suitable for the teaching environments of the future in order to take into account the individual differences of each student in the classrooms of the future, activate them, associate their learning with life and enable them to train their teachers who are technologically equipped as required by the age. The student is at the core of education and training in today's educational model, and his physical, sensory, and cognitive development features are considered. The learner is the active participant, whereas the instructor is a bystander. The instructor chooses the learning and teaching process aspects, such as subject, technique, tools, and learning process factors, while keeping the student in mind (Ercan, 2002; Şengül, 2005).

It is not a new application to present the content of the course to students through various software and computers in the classrooms where the teacher candidates will take lessons (Tanyeri, 2007). However, the development of software and hardware to be used in the future and the use of the computer as a complementary element of the system, not as an option, will be used in the teaching process (Karalar, 2007). Depending on the necessity of the student-centered education approach, there will be active use by teachers of the original contents (Çömek and Bayram, 2004) to be used to make the teacher more active and not to be a center. From this perspective, traditional, teacher-centered, and purely information transfer-based learning environments such as flat expression will be replaced by classrooms by current requirements. The physical creation of interactive classes of the future is not just a hardware and software process. Integrating technology into the learning-teaching process is a complex and multidimensional process that incorporates many dynamics besides those who teach and learn. At this point, it is foreseen that in developing an analytical perspective on the process through the activity systems in which all elements are related to each other despite the limitations of the integration process, the criteria and outcomes of success in social dimensions as well as in the field of science will be achieved as a result of the analysis of the data to be obtained by revealing complex relationships and interactions.

In addition, the integration process is compatible with the principle of object orientation, which arises from multifaceted needs as expressed. It is shaped by how these needs are addressed, and teaching effectiveness is

increased (Üstün, B. & Tanrikulu, L., 2021, p. 1217). The fact that there are changes in methods and approaches during the integration process to be carried out practically, that technology reveals changes not only in the visible sense but also in the abstract sense, that the changes in the mental and behavioral dimension are interactive with each other, parallels with the principle of internalization and exclusion.

### *2.3 Mobile Learning*

Computers are seen in the 1950s-1960s by Stanford University and IBM, which were not yet so widespread and experimentally used for instructions and charity purposes. At that time, such computers were called CAI “Computer-Aided Instruction.” To date, these letter combinations have continued to evolve depending on the paradigms, technologies, support systems, and standards that have developed. For example, models and approaches such as Collaborative Supported Learning (CSCL), Web-Based Learning (WBL), Mixed Learning, Game-Based Learning (Edutainment Educational Entertainment), Learning Management System (LMS), Shareable Content Object Reference Model (SCORM), and Learning Meta Object (IEEE LOM) have been developed and implemented in academic and industrial organizations (Jin, 2011). Within the purpose of this study, mobile learning is defined as a learning process involving mobile devices and software applications. Mobile learning, which is impacted by contemporary technologies and the culture of mobile communication, is unquestionably reliant on the availability of multipurpose and high-efficiency mobile technologies. This accessibility applies not just to role services but also dimensions, designs, and usage.

Mobile learning can sometimes be defined as using small, light gadgets that fit in the palm of one’s hand in conjunction with material (Kukulka-Hulme, 2005). The importance of mobile internet in different educational contexts has been a basis for rapid e-learning approaches. The e-learning experience is built on the internet as well as mobile learning. The characteristic feature for both forms of learning is that technology and education occur through information and communication technologies. The teaching and learning procedures are designed to be time and place agnostic. Unlike e-learning, mobile learning is entirely reliant on mobile technology and is structured to be appropriate for the instruments being used. The learning content must be adapted to the performance and features of the technologies employed. Standard learning content is also made available on mobile devices in this context (Göth ve Schwabe, 2011).

The efficacy of this strategy is a distinct issue of debate, but based on statistics, such as the global rise in the usage of mobile devices and the data density they utilize (CISCO, 2015), it is easy to see why they are increasingly being used as teaching tools. In 2010, the stellar (Sustaining Technology Enhanced Learning at a Large Scale) network, a European Union Project, conducted research with 20 internationally known mobile learning specialists (Börner ark., 2010). In the light of the data obtained during this study, seven problems were pointed out within the scope of mobile learning. Learning Access, Learning Limitations, Contextual learning, Coordination, Personalization, Learning order, and Technology Acceptance. This study approaches the concept of mobile learning from the perspective of technology acceptance.

### **3. The Computer-Aided German Teaching Course**

Within the course’s scope, it aims to develop technological knowledge and skills for the possible professional needs of German teacher candidates in the future. Course participants adhere to a theoretical distribution of six weeks and an empirical distribution of six weeks and transfer theoretical knowledge to the active learning environment. This transfer is carried out by presenting the units of the textbooks previously determined by the course group in 40 typed lectures. The following topics are discussed in the course;

- Creating exams and activities for language teaching and learning,
- Integrating digital possibilities into language teaching materials,
- PowerPoint for language learning,
- Digital storytelling,
- Social networking and teaching materials,
- Evaluation of commercial products.

A group work-based approach has been determined that requires active participation for all teacher candidates in terms of functioning. After the presentations of the previously designated units, participants in the audience position are asked to evaluate the presentation and express their positive or negative opinions in this context. The measure of the level of readiness and readiness to perform an event from a cognitive, sensory, social, and operational point of view can be expressed as “Readiness.” In this sense, the classroom environment created for the current research allows the observation of the level of readiness. On the other hand, it is thought that it will

enable guidance and determination of their needs in accordance with the individual approaches of teacher candidates to mobile technologies that they can use in the classroom environment and allow planning, program, and preparation in accordance with these needs.

#### **4. The Study's Objective**

The aim of the research was observed by participatory observation method with a qualitative approach to the perceptions, experiences, and attitudes of teacher candidates. The purpose of the observation method is to monitor who, how, where, and how often the research subject is carried out by being in the place where the events took place (Demir, 2009; Jorgensen, 1989). The researcher makes a vital data source in his later analysis by noting everything he observes in the field of research as much as possible. The data obtained in this study are also intended to be a preliminary study for a more comprehensive future study between the same unit but different universities and faculties.

For this purpose, a three-main approach has been adopted to determine the level of readiness;

- To determine the preliminary knowledge of teacher candidates on the subject,
- The individual characteristics of the students,
- To determine whether the information will be re-taught or improved.

##### *4.1 Research Questions*

The teacher candidates' judgments for the temporary titles produced throughout the observation were written down. A categorization was done based on the data frequencies received to determine the densities. The statistics observed and weight increase are described according to the headings. In light of the data, replies were sought under the following five primary topics based on the information provided by the teacher applicants.

- 1) What are the expectations of the teacher candidates in the use of mobile technologies in learning?
- 2) How are mobile technologies used in learning processes?
- 3) What are the difficulties in learning when using mobile technologies?
- 4) Is it right to use mobile technologies in teaching?
- 5) Do mobile technologies require a change in methods in teaching?

Explaining the findings and associating them with research topics has thus been tried to make sense of them.

#### **5. Method**

Under this main heading, the researcher examined subheadings related to the research model, the study group, the data collection tool, and the data analysis.

##### *5.1 Research Design*

One of the quantitative research methods, the descriptive research method, was used in this research. The exponent research deals not with the cause of the problem but with the extent of the existing situation (De Vaus, 2013, p. 18). This research method is used to obtain and identify information about a particular subject and the characteristics of the problem (Collis ve Hussey, 2013, s. 4). Surveys are the most widely used data collection technique in the demoralized research method (Thomas et al., 2015, p. 19). In this research, a descriptive research method was established to determine the views and possible readiness of the teacher candidates studying in the Department of German Teaching at Anadolu University Faculty of Education.

##### *5.2 Study Group*

The research was created with the participation of 174 teacher candidates studying in the Department of German Teaching at Anadolu University Faculty of Education in the spring semester of the 2015-2016 academic year. Limited universe and sampling were used in the research. The research group is mixed, and the participants are studying at undergraduate level 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup>-grade German teacher candidates.

##### *5.3 Data Collection*

Within the scope of the Computer-Aided German course, the researcher reflected the preliminary interview information obtained by the evaluation of the individual approaches and needs of the students to mobile technologies by the way of observation and the preliminary interview information obtained by noting the class activities and prepared a 3-type Likert type survey to determine the readiness of German teacher candidates for mobile learning. The prepared questionnaire consists of three parts. The first part of the survey includes statements aimed at determining the demographic characteristics of the participants. The second part contains

statements aimed at determining the mobile tools participants have and the types of operating systems of these mobile vehicles. The third part of the survey includes survey questions to assess participants' readiness for mobile learning.

#### 5.4 Data Analysis

Within the scope of the research, the data obtained by the 3-type Likert type survey were entered into the Microsoft Excel file by the researcher, and the descriptive statistics were used in the percentage and frequency process using IBM SPSS (The Statistical Package for Social Sciences) software. The results obtained as a result of percentage and frequency procedures were interpreted and structured by the induction analysis method based on the data obtained as a result of the literature review. Induction analysis is carried out to ensure an understanding of complex data through summary themes or categories developed from raw data (Özen et al., 2013; Thomas, 2003). In this analysis method, the aim is to reveal the main themes of the problem examined based on the collected descriptive, detailed data, make the collected data meaningful, and create a theory based on this data (Creswell, 2007).

### 6. Results

The findings of the research were collected under three headings. These topics include the demographic distribution of participants, mobile vehicle use distribution, and participants' readiness for mobile learning.

#### 6.1 Demographic Distribution of Participants

In line with the obtained data, the demographic distribution of the participants is visualized in Table 1.

Table 1. Gender distribution of participants

Gender	F (frequency)	% (Percent)
Male	58	33,3
Female	116	66,7
Total	174	100,0

Anadolu University Faculty of Education, Department of German Teaching, a question was organized to determine the level of readiness for mobile learning for undergraduate students and make a case study within the framework of the types of mobile devices and operating systems owned by the students. As shown in Table 1, 174 German teaching undergraduate students participated in the research. 58 male and 116 female students with 33.3% and 66.6% of the participants respectively, were screened in this survey.

#### 6.2 Distribution of Mobile Devices Usage

The types and distribution of mobile vehicles owned by the participants are included in Table 2.

Table 2. Distribution of Mobile Devices Usage

Mobil Devices	Count	Percent (%)
Tablet PC	36	20,7
Laptop	133	76,4
Smart Phone	169	97,1
Classic Cell Phone	6	3,4

Of the 174 students surveyed, 169 had a smartphone, 36 had a tablet computer, 133 had a laptop, and 6 had a classic mobile phone. Smartphones are a communication tool that combines new features such as e-mail, visual message, calendar, radio, camera, Bluetooth, GPS, and video into a single compact system, in addition to the standard voice calls and SMS features on mobile phones (Corbell ve ValdesCorbell, 2007; Yılmaz, 2011). In this research, the essential factor in the preference of smartphones as mobile devices is the finding that studies in the field of mobile learning are usually carried out through leasing or lending uniform mobile vehicles to students (Looi et al., 2009). In order for organizations and institutions that support research projects to provide limited budget support to mobile device purchases and to include more students in the research, the fact that students already use it in their daily lives is used extensively today has been a decisive factor in the research. Since 2010, the impact of mobile phones and their software and applications has increased. Today, the fact that many mobile phones have an internet browser and e-mail capacity and that more and more computers are suitable for wireless use gradually reduces the technological difference between mobile tools and personal computers (European Council, 2009). While mobile learning is prominent because it allows individuals to learn on the go, it is thought



that typical e-learning systems will lose popularity due to the fact that they require being in a fixed environment (at the computer) (Muyinda ve ark, 2006). Participants were asked about the operating systems of the devices they used in addition to the mobile devices they had. Looking at Table 3, it was determined that 49 of the male and female students had an iOS transmission system, 118 had a mobile device (Smartphone, Tablet computer) with Android operating system, and four windows phone operating systems.

Table 3. Used mobile operating systems

Gender	IOS	Android	Windows Phone	Blackberry	Others
Male	13	40	2	0	0
Female	36	78	2	0	0
Total	49	118	4	0	0

### 6.3 Participants' Readiness for Mobile Learning

According to the results of the research consisting of 174 participants, the results seen in Table 4 have emerged. 74.1% of students stated that they prefer to use mobile dictionary instead of printed resources in lessons, 54.5% said that mobile learning increases the persistence and success of their knowledge, and 47.1% think that mobile applications are more useful in German learning than printed sources. The most important points that stand out in the research data are the 4<sup>th</sup> and 5<sup>th</sup>.

According to the results of the data analysis, 82.2% of the students think that the applications they use for German lessons are inadequate. It is understood that the applications that allow foreign publishers to give small exercises based on the principle called "drill-kill" in an infinite cycle are not sufficient for students, mainly due to the lack of didactic motivation, and that 95.4% of German word teaching needs a more advanced mobile application.

Table 4. Student views on mobile learning

General Views on Mobile Learning	1 (Yes)		2 (No)		3 (Partially)	
	f	%	f	%	f	%
1 I prefer to use the dictionary application on my mobile device in the lessons instead of the printed dictionary.	129	74,1	20	11,5	25	14,4
2 In my courses, I think that mobile applications improve learning success and persistence of information.	95	54,6	19	10,9	60	34,5
3 I think mobile apps are more useful in German learning than printed sources.	82	47,1	31	22,4	53	30,5
4 I think the applications I use for my German lessons are inadequate.	143	82,2	7	4	24	13,8
5 German word teaching requires more advanced mobile dictionary software.	166	95,4	3	1,7	5	2,9

The positive opinions of the students who participated in the study regarding the applications they can use on mobile phones are evaluated to be high levels of readiness, which will be a positive factor for the studies to be carried out in this field. It has been observed that the conditions for the creation and use of applications that may reveal the potential for the benefit of mobile applications in German learning and that will allow mobile learning to evaluate the effects of mobile learning on foreign language learning are quite suitable. It is also thought that it will be important to determine and evaluate the extent to which a mobile software to be developed as described affects the success of foreign language learning and the usage rates of this type of mobile application.

## 7. Conclusion

Within the scope of the research carried out, the readiness levels of teacher candidates to use these technologies are a factor that affects the widespread and constructive use of these technologies as well as the presentation of current approaches to contemporary teaching environments of the future to teacher candidates. According to the opinions of the Teacher Candidates, the desired level of success in the classroom for the use of technologies offered within the scope of computer-aided German courses has not been achieved. It is stated that the desired efficiency cannot be obtained in the course because the preliminary knowledge of the technologies introduced within the scope of the course is not practically sufficient. It is thought that the lack of practical experience manifests itself as a shortage of time and fatigue at the point of preparing the course material. According to the

teacher candidates, it is thought that there may be a possible in-class disciplinary problem due to inexperienced issues, and the course may be interrupted if the subjects are processed with technology support. In particular, it is thought that if mobile technologies are used in the classroom environment, there will be a disconnect in student-teacher communication. It is emphasized that this disconnection will require a change in the way the teacher processes lessons. It has been observed that teacher candidates have an interest in the course in the application section. They pointed out that the expectations of the teacher candidates in terms of the use of technology were high, but there was a lack of guidance and guidance in undergraduate courses. They stated that there is no application for mobile technology use in elective or existing courses until the teaching step where teacher candidates are selected computer-aided German courses and that the use of technology in the classroom environment, in general, is also low.

It has been observed that teacher candidates have high motivation for mobile learning, but low readiness levels for the reasons highlighted. In the study, it was emphasized that there were no shortages of tools available in the classrooms of Anadolu University Faculty of Education, but technological equipment was not used effectively enough by a department of faculty members. It is thought that concrete materials in accordance with the levels of teacher candidates and appealing to their senses will support permanent learning and that the level of readiness of teacher candidates for technologically supported approaches such as mobile learning may increase in their professional lives. In this context, as a result of the changes in mobile devices, the opportunities arising from the difference in the student profile, and the elimination of the student characteristics discrepancy, the focus on the field of study to measure the success levels to be achieved in the use of possible mobile opportunities that can enable students to learn German languages with contemporary facilities in a rapidly changing world, and the effect of smartphone mobile applications on German learning and it is considered to carry out an additional study involving student opinions.

With the higher education system undergoing significant and far-reaching transformation, individuals responsible for supporting teaching staff must think about how to create and conduct professional development activities that are inclusive of all members of the academic workforce. Within a decade, a fixed computer has evolved into a portable, personal, hand-sized device with integrated internet and applications. The speed and magnitude of the consequent changes in communication, information, and learning behavior are significant, and media didactics should reflect them. Mobile learning in schools and universities is still relatively new. Previous studies, pilot tests, practical reports and the Coronavirus disease on the other hand, reveal that the concept of didactics is developing as a result of the mobile medium's consideration. This is accomplished through the thematization of mobile media, as well as the focused use of mobile media in educational settings and contributions to mobile learning theory building.

## References

- Albert, Ruth & Marx, Nicole. (2016). *Empirisches Arbeiten in Linguistik und Sprachlehrforschung. Anleitung zu quantitativen Studien von der Planungsphase bis zum Forschungsbericht* Tübingen.
- Arsenault, N., & Anderson, G. (1998). Qualitative research. In G. Anderson & N. Arsenault (Eds.), *Fundamentals of Educational Research* (pp. 119-135) (2nd ed.). London: Routledge Falmer.
- Ary, D., Jacobs, L. C., & Razavieh, A. (2002). *Introduction to Research in Education* (6th ed.). Belmont, CA: Wadsworth/Thomson Learning.
- Aytunga, O. (2004). Bilgi Çağında Yüksek Öğretim 8. Programları. *Milli Eğitim Dergisi*, (164), 76.
- Bay, B., Karataş, F., & Üstün, B. (2021). Yabancı Dil Hazırlık Sınıfı Öğrencileri Perspektifinden Pandemi Sürecinde Uzaktan Eğitim: Fenomenolojik Bir Çalışma. *Diyalog Interkulturelle Zeitschrift Für Germanistik*, 9(1), 184-203. <https://doi.org/10.37583/diyalog.958496>
- Börner, D., Glahn, C., Stoyanov, S., Kalz, M., & Specht, M. (2010). Expert concept mapping study on mobile learning. *Campus-Wide Information Systems*, 27(4), 240-253. <https://doi.org/10.1108/10650741011073789>
- Cartwright, V., & Hammond, M. (2003). The integration and embedding of ICT into the school curriculum: more questions than answers. Paper presented at *the ITTE 2003 Annual Conference of the Association of Information Technology for Teacher Education*, Trinity and All Saints College, Leeds. Center for Cultural Historical Activity Theory [CHAT].
- Cisco. (2015). *Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update 2014–2019 White Paper*. Retrieved from [https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white\\_paper\\_c11-520862.html](https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white_paper_c11-520862.html)

- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th ed.). London: Routledge. <https://doi.org/10.4324/9780203029053>
- Collis, J., & Hussey, R. (2013). *Business research: A practical guide for undergraduate and postgraduate students*. Palgrave Macmillan.
- Çömek, A., & ve Bayram, H. (2004). Fen Bilgisi Öğretiminde Isı Konusunun Bilgisayar 15. Destekli Öğretim Materyalleri İle Öğretilmesi. VI Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi. Cilt: I, İstanbul. (pp. 192-197).
- Creswell, J. W. (2007). *Qualitative Inquiry and Research Design: Choosing Among five Traditions* (2nd ed.). London: Sage Publications.
- Cuban, L. (1986). *Teachers and machines: The classroom use of technology since 1920*. New York: Teachers College Press.
- De Vaus, D. (2013). *Surveys in social research* (6th ed.). London and New York: Routledge. <https://doi.org/10.4324/9780203519196>
- Demir, O. Ö. (2009). Nitel Araştırma yöntemleri. In K. Böke (Ed.), *Sosyal Bilimlerde Araştırma Yöntemleri*. İstanbul: Alfa Yayınları.
- Demiraslan, Y. (2005). *Bilgi ve İletişim Teknolojilerinin Öğrenme-Öğretme Sürecine Entegrasyonunun Etkinlik Kuramı'na Göre İncelenmesi*. Hacettepe Üniversitesi, Ankara, unpublished master's thesis.
- DPT. (2010). *Bilgi Toplumu İstatistikleri*. Devlet Planlama Teşkilatı Müsteşarlığı Bilgi Toplumu Dairesi Başkanlığı. (pp. 22-29)
- European Council. (2009). *Internet Literacy Handbook*. Retrieved from <https://rm.coe.int/internet-literacy-handbook/1680766c85>
- Eurydice. (2009). Schlüsselzahlen zum Bildungswesen in Europa 2009, Exekutivagentur Bildung, Audiovisuelles und Kultur: 207.
- Flick, U. (2004a). *An Introduction to Qualitative Research* (4th ed.). London: Sage.
- Flick, U. (2004b). Design and process in qualitative research. In U. Flick, E. von Kardoff & I. Steinke (Eds.), *A Companion to Qualitative Research* (pp. 146-152). London.
- Flick, U. (2009). *An Introduction to Qualitative Research* (4th ed.). London: Sage.
- Gentry, C. G. (1995). Educational Technology: A question of Meaning. In G. J. Anglin (Ed.), *Instructional Technology: Past, Present, and Future* (2nd ed.). Englewood, CO, Libraries Unlimited.
- Göth, C., & Schwabe, G. (2011). Mobiles Lernen. In J. Haake, G. Schwabe & M. Wessner (Eds.), *CSCL-Kompendium 2.0: Lehr- und Handbuch zum computerunterstützten kooperativen Lernen* (pp. 294-305). München.
- Jin, Q. (2011). *Distance Education Environments and Emerging Software Systems: New Technologies*. IGI Global. <https://doi.org/10.4018/978-1-60960-539-1>
- Jorgensen, D. L. (1989). *Participant Observation: A Methodology for Human Studies*. SAGE. <https://doi.org/10.4135/9781412985376>
- Karalar, H., & Sarı, Y. (2007). *Bilgi Teknolojileri Eğitiminde BDÖ Yazılımı Kullanma ve 21. Uygulama Sonuçlarına Yönelik Bir Çalışma*. Akademik Bilişim. Kütahya: Dumlupınar Üniversitesi.
- Karasar, Ş. (2004). Eğitimde Yeni İletişim Teknolojileri İnternet ve Sanal Yüksek Eğitim. *The Turkish Online Journal of Educational Technology*, 3(4).
- Kennewell, S. (2001). Using Affordances and Constraints to Evaluate the Use of Information and Communications Technology in Teaching and Learning. *Journal of Information Technology for Teacher Education*, 10(1-2), 101-116. <https://doi.org/10.1080/14759390100200105>
- Kukulka-Hulme, Agnes. (2005). Introduction. In Kukulka-Hulme, Agnes & Traxler, John (Eds.), *Mobile Learning: A Handbook for Educators and Trainers* (pp. 1-6). New York, Routledge.
- Kumar, R. (2011). *Research methodology: A step-by-step guide for beginners*. Los Angeles: SAGE.
- Looi, C.-K., Wong, L.-H., So, H.-J., Seow, P., Toh, Y., Chen, W., Zhang, B., Norris, C., & Soloway, E. (2009). Anatomy of a mobilized lesson: Learning my way. *Computers & Education*, 53(4), 1120-1132. <https://doi.org/10.1016/j.compedu.2009.05.021>

- M. E. B. (1991). *Yabancı Dil Eğitimi Komisyon Raporu*. Ankara: Milli Eğitim Basımevi.
- Molenda, M., & Robinson, R. (2004). *The Definition of Educational Technology*. Unpublished draft prepared for the AECT Definition and Terminology Committee.
- Muyinda, P. B., Mugisa, E., & Lynch, K. (2006). M-learning: The educational use of mobile communication devices. In Kizza, J., Aisbett, J., Vince, A. & Wanyama, T. (Eds.), *Advances in Systems Modelling and ICT Applications Kampala* (pp. 290-301). Fountain Publishers.
- OECD. (2001). What Schools for the Future? *Schooling for Tomorrow*. OECD Publishing, Paris, <https://doi.org/10.1787/9789264195004-en>
- Özen, A., Ergenekon, Y., Burcu Ülke, K., & Genç, D. (2013). Kaynaştırma öğrencisi olan okulöncesi öğretmenlerinin sınıflarında yaptıkları öğretim uygulamalarının belirlenmesi. *Anadolu Üniversitesi Sosyal Bilimler Dergisi*, 13(2), 153-166. Retrieved from <https://earsiv.anadolu.edu.tr/xmlui/handle/11421/113>
- Reiser, R. A. (2002). What field did you say you were in? Defining and naming our field. In R. A. Reiser & J. V. Dempsey (Eds.), *Instructional Design and Technology* (pp. 27-45). New Jersey.
- Saettler, P. (1990). Early forerunners: before 1900. In *The Evolution of American Educational Technology* (pp. 23-52). Englewood, CO: Libraries Unlimited.
- Seels, B., & Richey, R. C. (1994). *Instructional technology: the definition and domains of the field*. Association for Educational Communications and Technology, Washington DC.
- Şengül, T. (2005). Geleneksel ve Çağdaş Eğitim Anlayışında İlgi ve Disiplin. *Milli Eğitim Dergisi (Üç Aylık Eğitim ve Sosyal Bilimler Dergisi)*, (166).
- Settinieri, J., Demirkaya, S., Feldmeier, A., Gültekin-Karakoç, N., & Riemer, C. (2014). *Empirische Forschungsmethoden für Deutsch als Fremd- und Zweitsprache*. Paderborn. <https://doi.org/10.36198/9783838585413>
- Stoller-Schai, D. (2010). Mobiles Lernen – die Plattform des Homo Mobilis. In A. Hohenstein & K. Wilbers (Eds.), *Handbuch E-Learning* (pp. 1-20). Köln: Deutscher Wissenschaftsdienst.
- Tanyeri, T. (2007). Bilgisayar Destekli Öğretim İle İlgili Temel Kavramlar, Öğeleri, Kuramsal Temelleri ve Uygulama Yöntemleri. In A. Güneş (Ed.), *Bilgisayar Destekli Öğretim ve Uzaktan Eğitim (Bilgisayar-II)*. Ankara: Pegem Yayınılık.
- Thomas, J. R., Silverman, S., & Nelson, J. (2015). *Research Methods in Physical Activity* (7th ed.). Human Kinetics.
- Üstün, B., & Tanrıku, L. (2021). Almanca Öğretmenliği Hazırlık Sınıfı Öğrencilerinin Almanca Derslerine Yönelik Tutumlarının Farklı Değişkenlere Göre İncelenmesi. *Fırat Üniversitesi Sosyal Bilimler Dergisi*, 31(3), 1211-1220. <https://doi.org/10.18069/firatsbed.903727>
- Watson, D. M. (2001). Pedagogy before technology: Re-thinking the relationship between ICT and teaching. *Education and Information Technologies*, 6, 251-266. <https://doi.org/10.1023/A:1012976702296>
- Yılmaz, Y. (2011). *Mobil öğrenmeye yönelik lisansüstü öğrencilerinin ve öğretim elemanlarının farkındalık düzeyinin belirlenmesi* (Yüksek Lisans Tezi, Dokuz Eylül Üniversitesi, Eğitim Bilimleri Enstitüsü, İzmir). Retrieved from <https://acikerisim.deu.edu.tr:8080/xmlui/handle/20.500.12397/7189>

## Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).