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Research Article

Adaptation of the attitudes towards mobile-assisted language learning scale to Turkish culture and language

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Abstract: The use of technological devices, especially mobile devices, in language learning has increased the number of studies in this field. In this regard, it is essential to identify students' attitudes towards mobile-assisted language learning (MALL). Therefore, the present study aimed to translate, adapt, and validate Gönülal's (2019) attitudes towards the MALL (A-MALL) scale to the Turkish language and culture. The study included 250 EFL learners from different cities in Türkiye who completed the adapted version of the 15-item A-MALL scale. To align the assumed factor loadings as closely as possible with the target matrix, confirmatory factor analysis was performed using the original study results as a calibration example. The results revealed that the adapted A-MALL scale has acceptable fit indexes; therefore, the Turkish version of the A-MALL scale is reliable and valid.

1. INTRODUCTION

During the last two decades, technology has become increasingly integrated into the teaching and learning of languages, and as a part of this process, computer-assisted language learning (CALL) has emerged (Kukulska-Hulme & Traxler, 2005). Then technology-assisted language learning has added new dimensions to the trend (Thorne & Smith, 2011). As a result of the ever-evolving and dynamic nature of technology, a new concept emerged in language learning: MALL (mobile-assisted language learning). Although MALL can be questionably considered another form of CALL (Gönülal, 2019), studies on MALL reveal that this concept has characteristics such as portability, interactivity, individuality, and wireless technologies (Chang *et al*., 2018; Jarvis & Achilleos, 2013; Kukulska-Hulme, 2009; Stockwell, 2013). Furthermore, the critical catchphrase in MALL studies is "anywhere, anytime" (Agca & Özdemir, 2013; Burston, 2014; Kolb, 2008; Stockwell, 2013). Thus, the concept of MALL is unique as it is easy to use, easy to access, flexible, helpful in facilitating collaboration in language learning, and independent of location.

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A different perspective on the importance of the studies and applications developed in the field is considering them as foundational knowledge for the unexpectedly emerging epidemic of Covid-19. In most countries, home-based learning has been adopted at all levels of education, as well as in informal institutions (Okmawati & Tanjak, 2020). Consequently, teachers and students faced the unfavorable prospect of switching from an offline, face-to-face teaching environment to a digital/virtual world (Amin & Sundari, 2020). Therefore, in such a situation, it has become even more essential to determine students' attitudes toward the digital education tools they use. Scales were developed to measure students' attitudes in this area (Croop, 2008; Çelik, 2013; Demir & Akpınar, 2016; Gönülal, 2019; Liu, 2017; Martin & Ertzberger, 2013; Yang, 2012). However, to the best of our knowledge, there are not enough scale adaptation studies that address the different dimensions of the feature to be measured in the context of Türkiye. Accordingly, the present study focused on adapting and validating an attitudinal scale to examine language learners' attitudes toward MALL. In doing so, this study adopted Gönülal's (2019) A-MALL scale measuring attitudes toward MALL.

1.1. Mobile-Assisted Language Learning and Attitudes

MALL is still a new area of investigation. Despite the growing interest in MALL, practitioners need to know more about what it can offer language learning different from traditional techniques. The MALL concept generally refers to a mobile-based approach to language learning that involves the use of portable handheld devices such as tablets, iPads, wireless laptop computers, portable MP3 players, mobile phones, and personal digital assistants (PDAs) to support language acquisition (Chang *et al*., 2018; Gönülal, 2019; Stockwell, 2010).

Palasas (2016) stated that "MALL learns from CALL but cannot be considered as merely a subset of CALL" (p. 45). Similarly, mobile learning is a natural extension of CALL since it incorporates all the benefits of CALL but with fewer time and space restrictions (Jarvis & Achilleos, 2013). In addition, mobile learning has various attributes, including spontaneity, personalization, informality, context, portability, ubiquitousness, and pervasiveness (Kukulska-Hulme & Traxler, 2005). Considering all these features of MALL, learning language items such as words and phrases in a different language with digital devices is essential. Nevertheless, technologies do not directly carry out learning (Jonassen, 1992), learners need to engage in some level of thinking, participation, and attraction to learn.

Understanding students' attitudes toward MALL is crucial for capturing their attention and engaging them in language-learning situations. As stated by Dörnyei (2003), attitude has a significant effect on the learning of a language, as it can either positively or negatively affect the learning process. Thus, several studies have been conducted to investigate the attitudes of teachers and students toward MALL (Alkhudair, 2020; Almudibry, 2018; Anwar *et al*., 2022; Aromaih, 2021; Pham, 2022). To illustrate, using a 21-item scale, Anwar *et al*. (2022) investigated the attitude of 310 female midwifery students toward MALL under six factors (i.e., self-efficacy, anxiety, self-regulation, usefulness, social interaction, behavioral acceptance). While the use of MALL has been shown to have a positive effect on language learning, its effect on anxiety was found to be small. Therefore, Anwar *et al*. (2022) suggested that anxiety must be taken seriously in every aspect of the learning process, whether the device is a MALL or not. Similarly, Pham (2022) investigated 116 university students' attitudes toward the MALL app Quizizz. The results revealed that participants had positive attitudes toward the application, and their satisfaction levels correlated strongly with attitude.

Studies on MALL have also attracted attention in Türkiye and have been the subject of several studies. For instance, Okumuş Dağdeler *et al*. (2020) examined the impact of a mobile application on improving English vocabulary knowledge and found positive short-term effects, but no significant differences in long-term retention or productive vocabulary knowledge. Similarly, the study by Şendağ *et al*. (2019) revealed that mobile extensive listening was less effective compared to teacher-centered intensive listening in enhancing listening skills.

Similarly, Özer and Kılıç (2020) reported positive effects on academic achievement and acceptance of mobile learning tools, though they underlined the need to investigate negative aspects as well. Özsarı and Saykılı (2020) stated that while mobile learning can be actively used for language learning, skills other than vocabulary learning, such as writing and listening, are largely neglected. These studies indicate that the impact of MALL in Türkiye is generally low or ineffective. In contrast, several studies from existing literature have demonstrated the effectiveness of MALL. For example, Solodka *et al*. (2022) showed that MALL supports interaction, communication, and resource access. Pratiwi *et al*. (2023) found significant impacts on learning outcomes in TOEFL preparation classes, albeit with limited effectiveness. Moreover, Phetsut and Waemusa (2022) emphasized the effect of MALL in improving the students' English-speaking skills in Thailand. Therefore, the overall low or ineffective results of MALL studies in Türkiye highlight the need for further research. The current scale may serve as an important tool to investigate why MALL yields negative or ineffective results in Türkiye.

As can be understood from the aforementioned research, attitude is a complex concept that needs to be determined, especially in newly developed learning applications. In Türkiye, a few researchers studied developing or adapting MALL scales. Çam *et al*. (2019) adapted the Mobile Learning Attitude Scale developed by Knezek and Khaddage (2013) to learn about general attitudes towards mobile learning in Turkish culture. In this scale, researchers focus primarily on how mobile technologies are used in educational settings as a whole. Nevertheless, the scale did not specifically address the unique features of MALL, such as its application in language learning situations. The scale does not take into account attitudinal factors like anxiety and motivation although it measures perceived usefulness, effectiveness, perceived control, and behavior. Similarly, Önal and Tanık Önal (2019) translated and validated an English mobile learning attitude scale for adult learners. A major focus of the scale is mobile learning experiences rather than specific attitudinal dimensions like anxiety, self-regulation, or social interaction. Demir and Akpınar (2016) also developed a mobile learning attitude scale that covers issues such as cognitive load and usability. However, this scale does not adequately cover affective factors that are critical for language learning environments, such as motivation and engagement. In their study, they emphasize the general use of mobile technologies in education, but they do not aim to explore the attitudinal factors that influence language acquisition.

This study, in contrast, adapts and validates Gönülal's (2019) A-MALL scale that focuses specifically on attitudes towards MALL as well as its cognitive and affective aspects. Unlike the abovementioned scales, the A-MALL scale addresses the portability, interactivity, and "anytime, anywhere" aspects of MALL, which are essential to language learning. In order to provide a more nuanced understanding of students' attitudes toward MALL, this tool includes detailed subscales that measure factors such as anxiety, self-efficacy, and social interaction. This adaptation study not only improves measurement precision but also contributes significantly to the literature by filling a gap in the cognitive and affective dimensions of MALL, which makes language education research and practice more effective and context-specific in Türkiye. Therefore, the adaptation of this scale to the Turkish language and culture will contribute to future studies in this field.

1.2. Adaptation Research

The adaptation process consists of translation, adaptation, and validation steps. In terms of terminology, adaptation is distinct from translation, and it is usually the former that is used since it refers to all aspects of cultural fit beyond mere translation (Hambleton, 2004). To avoid such confusion and to ensure that the process is carried out appropriately, the International Test Commission has developed guidelines on how psychological instruments should be translated and adapted cross-culturally (ITC, 2017). Further, adapting a scale is a long, demanding process that takes place with the involvement of more than one researcher. According to Hambleton

(2004), the process is so delicate that some researchers have argued that poorly adapted scales ruined their research.

Adapting an existing instrument can be more advantageous than developing a new one tailored to the target population (Borsa *et al*., 2012). The advantages such as time, cost, and effort are important for a researcher. Furthermore, in addition to being able to generalize more readily, the use of adapted instruments also permits analysis of the differences among a more diverse population (Hambleton, 2004). However, as well as its advantages, this process has several disadvantages or risks. For instance, Güngör (2016) stated that although it may seem more economical to adapt a scale whose validity and reliability have been proven in another language, problems such as the lack of measurement equivalence due to translation or cultural differences may arise. To minimize the abovementioned problems, as the International Test Commission suggested, the present study followed Hambleton and Patsula's (1999) guidelines in the adaptation process.

1.3. The Present Study

This study attempted to translate, adapt and validate an attitude toward the MALL scale (see Appendix 2) using an adaptation method. The rationale for adapting the A-MALL scale is in response to the growth of research in the field of MALL in Türkiye and the lack of a scale that measures a feature that has different components such as affective and cognitive aspects.

As Jarvis and Achilleos (2013) suggested, moving from CALL toward a well-supplied MALL, Gönülal (2019) replicated Vandewaetere and Desmet's (2009) 20-item scale toward CALL and developed a valid and reliable A-MALL scale. During the replication process of Vandewaetere and Desmet's (2009) study, Gönülal (2019) first performed the Exploratory Factor Analysis (EFA) and then the Confirmatory Factor Analysis (CFA). According to the EFA results, items 7, 16, and 17 were determined as complex variables and removed. Further, CFA results revealed that items 2 and 9 had low factor loadings; therefore, both were removed. Eventually, the final version of the developed A-MALL scale consists of 15 items and five factors (i.e., the effectiveness of MALL, teacher influence, degree of the exhibition to MALL, surplus value of MALL, orientation toward MALL). As in the original questionnaire, Gönülal (2019) used a seven-point Likert scale (1 = totally disagree, 7 = totally agree). All in all, the author's reporting practices and appropriate transparency were deemed to make this study suitable for adaptation in general.

2. METHOD

2.1. Participants

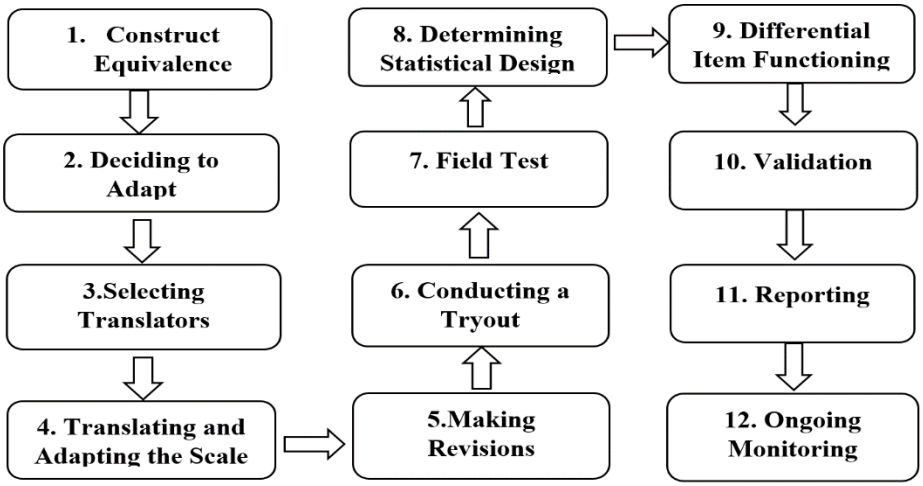
In total, 250 EFL learners in different cities of Türkiye participated in the study. Using Google Forms, the questionnaire was sent to students through the instructors, who reported using MALL applications in their classes. The majority of the participants were female (69.6%), and two participants (0.8%), did not want to indicate gender. The participants' ages ranged from 17 to 50, and the average age was 22.01 (SD = 5.53). They participated in the study in 49 different cities from Türkiye; Erzurum (23.2%), Trabzon (20.8%), Hakkari (11.6%), Van (5.2%), Diyarbakır (4.4%), Samsun (2%), Batman, Bursa, and Şırnak (1.6%), Adıyaman, Iğdır, Kars, and Siirt (1.2%), to name a few. All participants had a mobile phone; some also had a tablet (21.2%) and a portable music player (9.6%). Participant education levels were as follows: high school (7.2%), associate degree (4%), undergraduate (77.2%), master's degree (6%), and Ph.D. (5.6%).

The participants were informed before completing the questionnaire that their participation was entirely voluntary, their names would not be taken, and the data would only be used for research purposes. The Ethics Committee of Ataturk University approved this research.

2.2. Translation and Adaptation of the Scale

In this study, the questionnaire was cross-culturally adapted in multiple steps following Hambleton and Patsula's (1999) guidelines. An illustration of these steps is provided in Figure 1.

Figure 1. *Illustration of the adaptation process.*



The adaptation process began with ensuring the construct equivalence; that is, the definition of the MALL and its extensions were checked to determine whether they were equally perceived in both languages and cultures. According to the literature review, the terminology used in MALL is universally similar, and adaptability is not a problem. As a next step, we did a review of the literature to find out whether there are any scales aiming to measure attitudes toward MALL in the Turkish literature. To the best of our knowledge, no adapted or developed scales to measure the MALL concept with the desired factor structure were found. However, it is worth noting that only the M-learning Attitude Scale developed by Çelik (2013) has similarities with the characteristics to be measured. Eventually, the A-MALL scale, consisting of 15 items, by Gönülal (2019) was decided to be adapted to Turkish culture and language.

In line with the recommendations of Hambleton and Patsula (1999), well-qualified translators were recruited to translate the questionnaire. First, 15 items were independently translated by two researchers with high proficiency levels in English and whose native language was Turkish. The two translations were compared, and only minor differences were identified in the level of synonymy. Thus, specialists reached a consensus. Afterwards, the translated copy was sent to the Turkish language expert to check for grammatical and semantical errors. According to the Turkish language expert's feedback, there were no semantic or structural problems, and the scale was sent to a scale development specialist to check its face validity. Following confirmation of the scale's positive face validity, the back translation process was initiated. A researcher from the field of English Language Education back-translated the last version of the scale. While comparing the translation copies, it was found that the item content was nearly identical to that of the original scale, with only minor differences identified.

2.3. Procedure

The procedure involved two EFL teachers simultaneously reading aloud the scale to a high school and a university class, and the students in each class were asked to indicate which concepts they did not understand. In response to the participants stating that they understood all of the points, a minor tryout was conducted with the same group of 61 students. While some minor issues were identified, the results suggest that the scale is generally comprehensible and applicable for its intended use. Subsequently, to collect the data and choose the best sampling, EFL teachers and lecturers working in different provinces were interviewed to determine whether they used MALL tools in their classes. Teachers from four cities where the participants

were studying indicated that they utilized these tools in their lessons. In response, the teachers were asked to share the scale link, which also contained demographic information about the participants, including age, gender, education level, and mobile devices used by each participant, with their students. The data collection procedure was conducted via the Internet to make a reliable comparison between the collected data and the original data obtained from the calibration sample. Following the completion of the sampling, 250 participants filled in the questionnaire (it took nearly ten minutes), and there were no missing values. Finally, the data were prepared for analysis.

2.4. Data Analysis

2.4.1. *Confirmatory factor analysis*

The goal of a Confirmatory Factor Analysis is to fit the default factor loads as closely as possible to the target matrix (Kline, 2011). Thus, the researchers used the CFA results of the original study as calibration samples for testing the modified model in this study. To determine which probabilistic distribution and parameters best describe the observed data, the Maximum Likelihood Estimation Method was used. The proposed CFA model was evaluated for fit by estimating a number of fit indices such as Chi-square (χ^2), Chi-square divided by the degrees of freedom (χ^2/df), Root Mean Square Error of Approximation (RMSEA), Adjusted Goodness-of-fit Index (AGFI), Comparative Fit Index (CFI), Tucker-Lewis Coefficient (TLI), and Goodness-of-fit Index (GFI) (Kline, 2011; Tabachnick & Fidell, 2013).

3. RESULTS

The AMOS v23 statistical package was used for the CFA. Two hundred fifty samples from EFL students were included in the analysis. According to Kline (2011), a sample size of 200 people is usually sufficient to extract reliable factors. Another common practice is to study with a sample of 3-10 times the number of items (Cattell, 1978; Everitt, 1975). Therefore, the study's sample size met these conditions with 250 participants. Afterwards, factor loadings were determined, and fit indexes were checked. As for the results of testing the assumptions of the CFA, AMOS v23 was employed to perform the CFA. Prior to conducting the CFA, all assumptions such as the presence of univariate and multivariate outliers, distribution normality, and the absence of multicollinearity were examined and met (Tabachnick and Fidell, 2013). Specifically, boxplots revealed no univariate outliers, and Cook's distance values, ranging from .00 to .73, fell within the acceptable range of −1 to +1, indicating no significant multivariate outliers. The skewness values, which ranged from −.42 to .15, and the kurtosis values, ranging from −.73 to .30, were both within the acceptable range of −1 to +1, demonstrating that the dataset was normally distributed. Lastly, the Variable Inflation Factor (VIF) values, ranging from 1.82 to 3.77, were below the threshold of 4, suggesting no issues with multicollinearity.

The path diagram in Figure 2 also illustrates the intercorrelations, fit indexes, and factor loadings. As indicated in the path diagram, all the factor loadings are more than .30 and generally, a factor loading greater than .30 indicates that the item and the factor are moderately correlated (Tavakol & Wetzel, 2020). According to the analysis, the following fit indexes were obtained: χ^2/df=2,606, RMSEA=.080, SRMR=.0622, CFI=.954, GFI=.897, AGFI=.846, NFI=.929, TLI=.940.

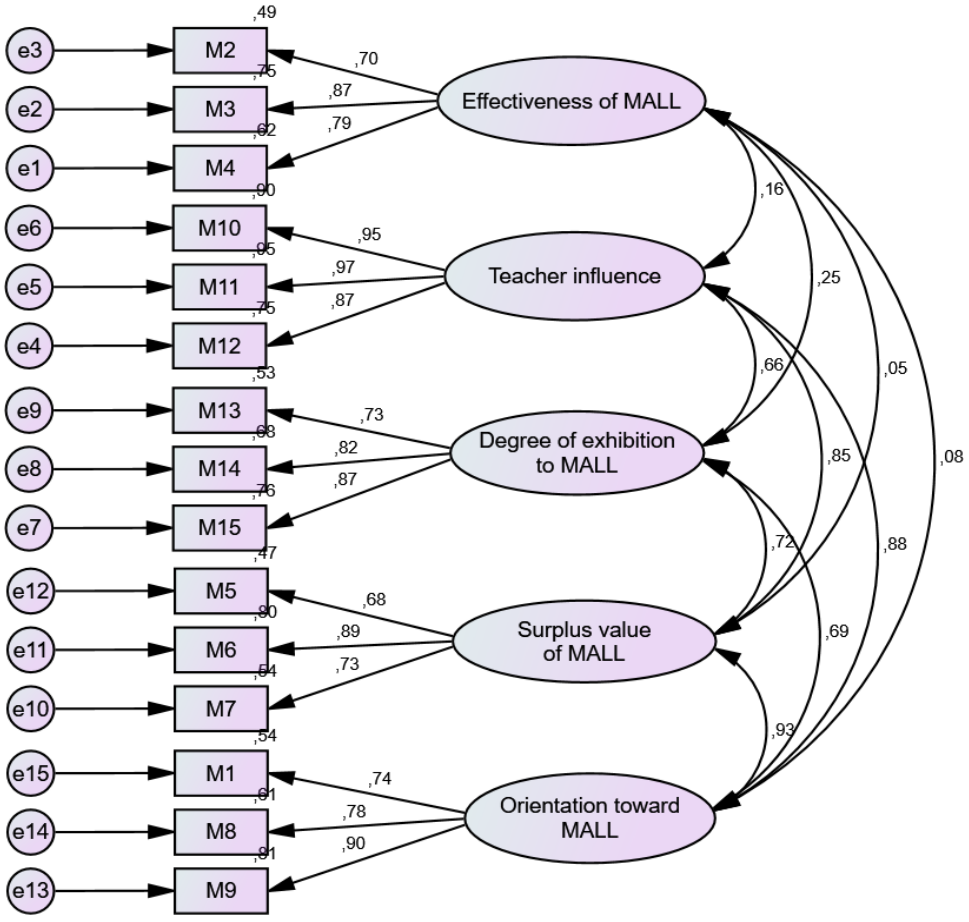
As shown in Table 1, except for AGFI (poor fit), the abovementioned values have a good and acceptable fit to the reference ranges. Consequently, modification indices were not required between variables.

Table 1. *Fit statistics for both calibration (original scale) and validation (adapted scale) samples.*

Index	Current levels		Perfect fit	Good fit	Evaluation
	Calibration	Validation			
χ^2/df	1.49	2.60	$\chi^2/df \leq 2$	$\chi^2/df \leq 3$	Good fit
RMSEA	.064	.080	RMSEA ≤ .05	RMSEA ≤ .08	Good fit
GFI	.88	.897	GFI ≥ .95	GFI ≥ .90	Acceptable fit
AGFI	.82	.846	AGFI ≥ .95	AGFI ≥ .90	Poor fit
CFI	.95	.954	CFI ≥ .95	CFI ≥ .90	Perfect fit
TLI	.93	.940	NNFI ≥ .95	NNFI ≥ .90	Good fit

The fit indices (Hair *et al*., 2010; Hooper *et al*., 2008; Hu & Bentler, 1999; Kline, 2011; Tabachnick & Fidell, 2013; as cited in Gönülal, 2019)

Figure 2. *Path diagram illustrating factor model of adapted A-MALL scale.*



The default model needs to be checked for validity and reliability in the next step of the CFA. Thus, the original A-MALL scale scores were used as a calibration and compared with the current findings to examine the two concepts better. Further, the Cronbach Alpha coefficient and the Composite Reliability (CR) were calculated to assess reliability. Compared with the original study, the current study produced higher reliability rates (i.e., Cronbach Alpha coefficient ranged from .80 to .94., CR .817-.951). Additionally, the overall Cronbach Alpha coefficient of the adapted A-MALL scale is .917. A Cronbach Alpha coefficient between .80 and 1 is considered highly reliable (Erkuş *et al*., 2017). Similarly, internal consistency reliability greater than .70 indicates good internal consistency (Hair *et al*., 2010). As a result, the adapted A-MALL scale is internally consistent, and comparative values are shown in Table 2.

As a measure of convergent validity, Average Variance Extracted (AVE) helps assess the relationship between factors (Gönülal, 2019). According to Fornell and Larcker (1981), AVE values of more than .5 indicate that the factor is well explained by its items/variables. In the case of the adapted scale, the AVE values fall between .601 - .866, which is higher than the calibration values (i.e., .532 - .757). This suggests that the items within each factor are highly correlated. Furthermore, an Excel tool designed by Gaskin (2011) was used to find discriminant validity measures.

Table 2. *Reliability and validity values of calibration and validation sample (in parentheses).*

Factor	Item	Factor loading	Reliability		Convergent validity
			A	CR	AVE
Factor 1	Item 2	.70 (.70)	.78 (.82)	.793 (.830)	.564 (.621)
	Item 3	.89 (.87)			
	Item 4	.69 (.79)			
Factor 2	Item 10	.84 (.95)	.90 (.94)	.903 (.951)	.757 (.866)
	Item 11	.89 (.97)			
	Item 12	.83 (.87)			
Factor 3	Item 13	.76 (.73)	.79 (.84)	.792 (.851)	.559 (.656)
	Item 14	.74 (.82)			
	Item 15	.73 (.87)			
Factor 4	Item 5	.76 (.68)	.78 (.80)	.804 (.817)	.586 (.601)
	Item 6	.91 (.89)			
	Item 7	.67 (.73)			
Factor 5	Item 1	.61 (.74)	.71 (.84)	.760 (.850)	.532 (.656)
	Item 8	.55 (.78)			
	Item 9	.86 (.90)			

CR composite reliability, AVE average variance extracted (Gönülal, 2019)

The discriminant validity of a construct can be defined as the extent to which those constructs are empirically distinct from one another (Ab Hamid *et al*., 2017). According to Table 3, the adapted A-MALL, as in the original scale, displays good discriminant validity since the square of AVE is greater than the inter-factor correlation. Finally, thanks to the transparency and reproducibility of the study, the order, types, and reporting format of the analysis were chosen to be similar to the original scale for comparison purposes.

Table 3. *Discriminant validity measures for the calibration sample and the validation sample (in parentheses).*

Factor	Factor 4	Factor 1	Factor 2	Factor 3	Factor 5
Factor 4	**.766 (.775)**				
Factor 1	.101 (.054)	**.751 (.788)**			
Factor 2	.086 (.850)	.213 (.160)	**.869 (.930)**		
Factor 3	.329 (.723)	.015 (.246)	.462 (.662)	**.748 (.810)**	
Factor 5	.419 (.928)	.051 (.080)	.479 (.881)	.600 (.692)	**.730 (.810)**

The square root of AVE is given in bold at diagonal

4. DISCUSSION and CONCLUSION

As technology has advanced, people's lifestyles, habits, and needs have evolved, leading to the emergence of new research areas and approaches aimed at meeting these changing needs and demands. One of these areas is language learning, which has seen the shift from Computer-Assisted Language Learning (CALL) to Mobile-Assisted Language Learning (MALL), as mobile devices offer ease of use, spontaneity, flexibility, and privacy. Consequently, it has become crucial to determine the attitudes of students towards MALL. However, there is no existing scale to measure students' attitudes towards MALL in Türkiye that takes into account, in particular, the cognitive and affective aspects of MALL. Although Çelik has developed (2013) a scale named the M-learning Attitude Scale, it was not designed to measure the abovementioned concepts. Therefore, the current study aimed to fill this gap by translating, adapting, and validating Gönülal's (2019) A-MALL questionnaire. Overall, this study contributes to the literature on language learning and technology by providing a comprehensive and context-specific instrument to measure students' attitudes towards MALL in Türkiye.

The adapted A-MALL scale consists of 15 items and five factors as in the original scale. After providing the necessary assumptions, the data collected from 250 English foreign language students were tested by CFA with the scale prepared according to the 7-point Likert type. The original scale data was used as a calibration sample to compare CFA results. Nearly all factor loadings were higher than the calibration sample values. Additionally, Cronbach Alpha coefficients and CR values met the reference ranges. Similarly, discriminant validity tests (i.e., AVE and the square root of AVE) again met the acceptable values. All in all, we adapted a valid and reliable Attitudes towards MALL scale (see Appendix 1).

In order to improve the effectiveness of the language acquisition process and to influence the results of second and foreign language proficiency, empirical research on the possible changes in individuals' learning strategies when using mobile devices in their language learning is required (Viberg & Grönlund, 2013). Therefore, the present study may help increase the empirical research in the Türkiye context and understand the effectiveness of mobile devices in language learning. Moreover, policymakers would benefit from these studies to prepare new language learning programs, develop new web tools, and implement new technological items into the curriculum.

The translated, adapted and validated A-MALL scale, as presented in Appendix 1 can be used to determine the attitudes of foreign language learners towards MALL, especially in terms of its cognitive and affective aspects in the context of Türkiye, and it can help both to increase research in this field and to use these tools in language education. Furthermore, considering the increasing proliferation of mobile technology, language learning may increasingly be integrated into everyday life. In light of this fact, it may be beneficial for all stakeholders within language education to determine students' perspectives on MALL by assessing five different dimensions and three different components of attitude prior to or during the learning process.

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Declaration of Conflicting Interests and Ethics

The authors declare no conflict of interest. This research study complies with research publishing ethics. The scientific and legal responsibility for manuscripts published in IJATE belongs to the authors. **Ethics Committee Number**: Atatürk University, Social Sciences and Humanities Ethics Committee, 02.|2.2022-13.

Contribution of Authors

Each author has made an equal contribution to the research.

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APPENDIX

Appendix 1. Mobil Destekli Dil Öğrenimine (A-MALL) Yönelik Tutum Ölçeği.

		Kesinlikle Katılmıyorum						Kesinlikle Katılıyorum
1.	Dil öğrenimim bir mobil cihaz tarafından desteklendiğinde daha fazla ilerleyecektir.	1	2	3	4	5	6	7
2.	Mobil teknoloji tabanlı yapılan dil testleri, asla kâğıt kalemle yapılan testler kadar iyi değildir.	1	2	3	4	5	6	7
3.	Mobil destekli dil öğrenimi, geleneksel dil öğreniminden daha elverişsizdir.	1	2	3	4	5	6	7
4.	Mobil destekli öğrenim yoluyla bir dil öğrenen kişiler, geleneksel dil öğrenicilerine göre daha yeteneksizdirler.	1	2	3	4	5	6	7
5.	Mobil destekli dil öğrenimi, klasik öğrenme yöntemlerinin değerli bir uzantısıdır.	1	2	3	4	5	6	7
6.	Mobil destekli dil öğrenimi, dil öğrenimine daha çok kolaylık sağlar.	1	2	3	4	5	6	7
7.	Mobil cihaz ile yabancı dil öğrenmek daha rahat ve stressiz bir ortam oluşturur.	1	2	3	4	5	6	7
8.	Mobil cihazlarla yabancı dil öğrenmek zekânızı geliştirir.	1	2	3	4	5	6	7
9.	Mobil cihazlarla yeni bir dil öğrenmeyi severim.	1	2	3	4	5	6	7
10.	Öğretmenin MALL'a karşı tutumu, dil öğreniminde mobil cihazların kullanımına yönelik tutumumu büyük ölçüde etkiler.	1	2	3	4	5	6	7
11.	Öğretmenin MALL'a karşı hevesi, dil öğreniminde mobil cihazları kullanma motivasyonumu büyük ölçüde etkiler.	1	2	3	4	5	6	7
12.	Öğretmenin dil öğreniminde mobil cihazları kullanma yeterliliği, dil öğreniminde mobil cihaz kullanımına karşı tutumumu büyük ölçüde etkiler.	1	2	3	4	5	6	7
13.	Yüz yüze öğrenmeye kıyasla mobil cihazlar aracılığıyla yabancı dilde iletişim kurarken daha az cesaretimin kırıldığını hissediyorum	1	2	3	4	5	6	7
14.	Yüz yüze öğrenme durumunda, yabancı dilde konuşmakta sık sık endişe duyarım.	1	2	3	4	5	6	7
15.	Benim için yüz yüze bir sohbet başlatmaya karar vermek, mobil destekli sanal bir ortamda sohbet başlatmaya karar vermekten daha zordur.	1	2	3	4	5	6	7

Appendix 2. Attitudes towards mobile assisted language learning (A-MALL) questionnaire.

		Totally disagree						Totally agree
1.	My language learning will proceed more when this is assisted by a mobile device.	1	2	3	4	5	6	7
2.	Mobile-technology-based language tests can never be as good as paper-and-pencil tests.	1	2	3	4	5	6	7
3.	Mobile-assisted language learning is less adequate than traditional language learning.	1	2	3	4	5	6	7
4.	People who learn a language by mobile-assisted learning are less proficient than traditional learners.	1	2	3	4	5	6	7
5.	Mobile-assisted language learning is a valuable extension of the classical learning methods.	1	2	3	4	5	6	7
6.	Mobile-assisted language learning gives more flexibility to language learning.	1	2	3	4	5	6	7
7.	Learning a foreign language with a mobile device constitutes a more relaxed and stress-free atmosphere.	1	2	3	4	5	6	7
8.	Learning a foreign language by mobile devices enhances your intelligence.	1	2	3	4	5	6	7
9.	I (would) like to learn a new language on mobile devices.	1	2	3	4	5	6	7
10.	Teacher's attitude towards MALL largely defines my attitude towards the use of mobile devices in language learning.	1	2	3	4	5	6	7
11.	The teacher's enthusiasm towards MALL largely defines my motivation for using mobile devices in language learning.	1	2	3	4	5	6	7
12.	The teacher's proficiency in using mobile devices in language learning largely defines my attitude towards mobile device use in language learning.	1	2	3	4	5	6	7
13.	I feel less inhibited when communicating in a foreign language via mobile devices than in face-to-face learning.	1	2	3	4	5	6	7
14.	In a face-to-face learning situation (classroom) I often experience anxiety when speaking in a foreign language.	1	2	3	4	5	6	7
15.	For me, the threshold to start a face-to-face conversation is bigger than starting a virtual (mobile-assisted) conversation.	1	2	3	4	5	6	7