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On the Educational Theory and Application of Mobile-assisted Language Learning and Independent Learning in College English Teaching

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<p>Article History</p> <p>Article Submission 30 December 2022</p> <p>Revised Submission 27 January 2023</p> <p>Article Accepted 07 February 2023</p>	<p style="text-align: center;">Abstract</p> <p>Globally, educational psychology and theory have advanced the knowledge of various ways college students learn and retain information. Low academic performance in college education is directly attributed to learning disabilities. Using the underlying mechanism of mobile-assisted language learning, the present study explored how self-monitoring impacted self-management, as well as beliefs about language learning skills. The present study hypothesized that college students' beliefs about the problems associated with mobile phones to learn a language serve as a moderator in the relationship between self-management and beliefs about how their language skills are improving. Furthermore, this study investigated the role of self-management as a mediator in the relationship between self-monitoring and beliefs about mobile-assisted language skills. The data was gathered from 329 college students in the Chinese city of Shanghai. The PLS-based SEM results highlighted a direct relationship between self-monitoring and self-management, during mobile-assisted language learning in college English teaching. The findings also confirmed the underlying role of college students' beliefs on the issues associated with using mobile phones to learn a second language. Importantly, the findings highlighted the implications of the widely expanding mobile-assisted language learning in the education industry.</p> <p>Keywords: Self-management; Self-monitoring; Language Skills Beliefs; Mobile-assisted Language Learning; Educational Theory; College English Teaching</p>
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Introduction

The swift progression of information and communication technology has significantly transformed not only the contemporary lifestyle but also the educational milieu. E-learning, an educational modality that utilizes computer and internet technologies to facilitate classroom instruction, has gained considerable popularity. The advancement of information and communication technology has enabled instructors and learners to encounter a novel teaching and learning environment (Saleem, Noori, & Ozdamli, 2022). As a result of the worldwide pandemic and the spread of COVID-19, technological integration in the classroom has escalated in response to a crisis where the future of education is at risk (Butola, 2021). As a result of recent technological advancements, the usage of digital gadgets has permeated every part of our life. Mobile phones have recently evolved into a need for those living in the age of the digital revolution (Çetinkaya, 2020). Multitasking features on mobile devices include wireless computer activity, phone, camera, notepad, and personal information management tasks without time or space constraints (Jeong, 2022). Additionally, a variety of activities are feasible with mobile phones, including viewing films, listening to music, taking pictures and videos, checking e-calendars, taking notes, reading e-books, and playing games on them while driving (Schlebbe; Sung & Chiu, 2021). As a result, it can be claimed that using mobile phones as a new educational instrument will hasten the development of a new kind of mobile learning environment (Criollo-C, Guerrero-Arias, Jaramillo-Alcázar, & Luján-Mora, 2021). Traditional learning tools are being replaced by mobile devices, which are also being acknowledged as an extended learning tool for the digital learning environment, which calls for new teaching and learning functions (Alam, 2021). Additionally, learner-centered education is made possible by the properties of portable digital devices, which facilitate cooperative learning via ubiquitous contact outside of face-to-face interactions in the classroom (Santoianni, 2021; Zhang & Yu, 2022). Both instructors and students have reacted favorably to the use of mobile devices in the classroom (Rajendran & Yunus, 2021). Research done in the past shows that mobile devices could increase learner motivation, make learning more interesting, and help students learn in a fun way (Krouska, Troussas, & Sgouropoulou, 2022).

There are several initiatives to incorporate technology into the fields of language learning and instruction, and English as a Foreign Language (EFL) is no exception (Nguyen, 2021). The ICT sector's growth has increased interest in mobile learning for English teaching and learning, and research is being actively pursued in this area as well (Hasram et al., 2021; Jeong, 2022; Qarkaxhja et al., 2021). As a result, EFL learners now have the opportunity to experience the wide range of capabilities of technology in their language learning thanks to the extensive use of technology-integrated instruction (Yang, Kuo, Eslami, & Moody, 2021). Situated learning is one of the mobile phones' most beneficial features (Rajendran & Yunus, 2021). Language learners may actively create their own knowledge in a contextual language learning environment as they learn to comprehend their own requirements and establish learning styles and tactics. The finest environments for developing English communication skills are those that allow students to engage in real-world language learning activities (Lazebna & Prykhodko, 2021). When learning languages and building knowledge, technology-integrated education may assist students in concentrating on the situated learning situation. Real-world integration of language learning activities has the potential to increase learning's relevance and fun factor (Garzón, 2021). Language learners may have the possibilities to develop communicative competence while participating in real communication in pertinent and meaningful situations thanks to the more learner-centered creative ways of modern technology (De Costa, 2023). By using digital tools, language learners may develop their communicative skills to fit their learning goals and participate in real conversations from lasting and meaningful perspectives.

Even though there is a lot of support for using mobile devices to help with language learning in EFL settings, several EFL experts have pointed out that there are a lot of problems with using mobile devices for language learning and teaching. As Puebla, Fievet, Tsopanidi, and Clahsen (2022) say that the fact that students don't want to use their phones for school and learning is a big reason why they can't be used for language instruction. Sam and Shalini (2021) You could say that the size of the screens on mobile phones would be another problem with using MALL to help people learn a language. The high cost of using mobile devices for education may stop students and teachers from using mobile-assisted language learning in EFL courses as planned (Yassin &

Abdulgalil Abugohar, 2022). Similarly to that, mobile phones' limited ability to display graphics might be another obstacle (Dashtestani, 2013a).

Instead, some academics that study mobile-aided language acquisition think that using a phone to learn a language can make the process easier while addressing or reducing any potential difficulties (Ahmadi, 2021; Ghooriyan & Salehi, 2022). Ennouamani, Mahani, and Akharraz (2020) assert that as new technologies develop, several new practical limitations can also manifest. Unavoidably, as Ennouamani et al. (2020) pointed out that as it becomes more commonplace among instructors and students, mobile learning will continue to assume different forms. Therefore, it is anticipated that the majority of mobile phones' current limits on language acquisition will vanish in the future.

The majority of mobile language learning programs are designed for informal, out-of-classroom learning, which may be explained by the inherent advantages of mobile devices (Caldwell, 2018). Despite this, it might be challenging to track learners' interactions with mobile learning due to their ownership of these devices. Application usage may or may not promote self-directed learning, which is essential for long-term informal learning to succeed (García Botero, Questier, & Zhu, 2019; Zainuddin et al., 2021). Since more sophisticated coding skills have encouraged the creation of multiple independent mobile-assisted language learning (MALL) apps (Shortt, Tilak, Kuznetcova, Martens, & Akinkuolie, 2021), therefore this study aims to address mobile-assisted language learning role towards a self-monitoring and self-management relationship with the participants' beliefs about improvements in language skills.

Literature Review

Educational Theories Related to M-Learning

To fully realize the potential of a mobile device as a learning tool, educational experiences must be anchored in sound educational theory and make extensive use of the "mobility" of the mobile device. Several global conferences, such as the International Workshop on Mobile and Wireless Technologies in Education and the MLEARN series, as well as European efforts such as HandLer, m-learning, MobiLearn, and MLarg, have been hosted in the field of education to accomplish this (Cakmak, 2019; Parsons, 2014). The conditions for m-learning as a specific learning type are listed for conceptualization, including 1) recognition of m-uniqueness, learning 2) an estimate of the number of learning outcomes obtained outside of the classroom, 3) practise accounts, such as learner-centeredness, knowledge-centeredness, assessment-centeredness, and community-centeredness, and 4) widespread use of personal mobile devices (Cakmak, 2019; Huang, Zhang, Li, & Yang; Mehran, Alizadeh, Koguchi, & Takemura, 2017). Despite claims that its pedagogical philosophy and practise are still in their infancy (Samanta, Pandey, Prakash, & Rai, 2022), Numerous applications, including collaborative learning, have examined and addressed mobile learning and its results (Al-Rahmi et al., 2021; Criollo-C et al., 2021), teacher readiness (Nikolopoulou, Gialamas, Lavidas, & Komis, 2021), nurse training (Chen et al., 2021), natural science learning (Hwang, Wu, & Ke, 2011), institutional training for mobile workers (Butler, Camilleri, Creed, & Zutshi, 2021), context-aware language learning (Vallejo-Correa, Monsalve-Pulido, & Tabares-Betancur, 2021), and teachers' professional development (Kearney & Maher, 2012).

Mobile learning has been connected to other well-known learning theories, according to the conclusions and implications of this study (Alshalabi, Hamada, & Elleithy, 2013) mobile learning has been linked to other well-known learning theories. The six mobile learning philosophies put forth by Cakmak (2019) are behaviorist, constructivist, contextual, collaborative, informal/lifelong, and support/coordination of learning. According to behaviourism, reinforcement of learning should come from a stimulus and a stimulus reaction (Zhu, 2022). The use of quick feedback or the reinforcement component is possible in mobile behaviorist learning. When learning constructively, students create new ideas or concepts by improving their comprehension based on a synthesis of prior and current information (Cheong, C., Bruno, & Cheong, F., 2012). When it comes to m-learning, mobile devices can support people in creating meaning through mobile research and applications (Yoo & Cho, 2018). M-learning is encouraged or promoted in context-specific settings like museums or field excursions because situated learning encourages activities

in real-world settings. Mobile devices running context-aware apps help the learning process by drawing on these situations. In collaborative learning, social connection is critical for comprehension (Kumar & Sharma, 2020). Mobile learning encourages learning via social contact, collaboration, and engagement. For informal and lifetime learning, activities outside of a formal learning space and formal curriculum are recommended (Burbules, Fan, & Repp, 2020). Users of mobile devices may obtain information outside of a formal educational environment when they feel the need to go to the information's source. Regarding learning assistance, pupils are given chances for informal learning that may be planned or unintentional. When using a mobile device for a pastime or activity, users may need to access subject information, lecture notes, assignments, quizzes, or tests, or learn through games and apps. Connectivism is a brand-new category of learning exercise that ABC introduces (Siemens, 2007). According to connectivism, a theory that combines constructivist and behaviorist principles, learning occurs in a networked society when specific knowledge sources are linked together in a dynamic environment. Participating in a network or group allows learners to direct their own learning and see the connections between various topics, notions, and ideas. According to Melhuish and Falloon (2010), the idea of customized learning refers to the possibility of mobile learning to allow students to set their own learning pace

Burke, Kearney, Schuck, and Aubusson (2022) characterized the characteristics of m-learning activities as customized, contextual, and genuine. When learning is personalized, it is acknowledged that each person's requirements and interests are unique, and the course content is created, presented, or supported accordingly. Situated learning supports learning that is context-specific by placing learning in the appropriate setting, such as a hospital ward (in the case of nursing training). Real-world, practical experiences are combined with investigation and inquiry to create authentic learning. Sharples (2009) in order to establish mobile learning as a different kind of learning from desktop or classroom learning, ABC proposes a framework. His framework has two components: commencement and administration. Learning that is initiated by the pupil or a third party (teacher or a curriculum). The management of the learning process rests with the student or others. Four traits of mobile learning are displayed in this paradigm. First, despite the possibility, mobile learning is not always movable. Learning may still occur when students use mobile devices outside of or inside fixed locations like a lab or classroom (Benson, 2022; Raja & Priya, 2021). Second, mobile learning can take place in informal situations. Some encouraging informal environments, such as field trips or museums, may be planned but run by others. Third, mobile learning could be extended and combined with other initiatives. It is difficult to determine when learning happens because mobile learning may assist the student while he or she is engaged in other activities. Finally, personal and public technology may be used in mobile learning. Students may be required to use either university-provided mobile devices or compatible personal devices while engaging in learning activities due to the abundance of technology and resources available, such as tablets, e-dictionaries, MP3 players, and mobile phones.

Participants' Beliefs about Improvements in Language Skills

The majority of early belief studies sought to examine the strength of learner beliefs in different groups of learners while treating learner beliefs as static, resistant to change, and a fixed mental construct (Zhong, 2022). In recent years, research has shifted its emphasis to a better contextualization of learners' views. It is suggested that beliefs are socially formed and culturally located and that they may change over time and in different contexts (Mao & Lee, 2022; Secules, Sochacka, Huff, & Walther, 2021). For instance, Amuzie and Winke (2009) employed both quantitative and qualitative introspective methodologies to investigate how to study abroad programs in the USA influenced the beliefs of 70 Chinese students from other countries. There have been statistically significant improvements in perceptions of instructor authority and learner autonomy, according to the data. The students stated that while studying abroad, they became more convinced that they should seek out opportunities to practice their second language and that success in L2 acquisition was increasingly dependent on their own efforts outside of class. Peng (2011) used the case study approach in his longitudinal research to track changes in one Chinese first-year college student's views in an EFL environment over the course of seven months. The results showed significant changes in the students' belief systems, which were mediated by the opportunities provided in the classroom. Similar results were also reported in Zhong (2015) that followed five migrant students throughout their time in New Zealand. The findings showed that

once the learners were exposed to new methods of language instruction in New Zealand, certain positive beliefs formed, and learners' opinions about methods of language learning altered as a consequence of the new language learning environment. These studies have offered empirical proof of the dynamic, fluid, and context-responsive nature of beliefs. Since the quality, amount, and frequency of the strategies used by learners vary widely, it is thought that these variances are caused by a variety of distinct causes. Since they are the most relevant for the present study, I will solely evaluate research on how learner beliefs affect the selection of learning techniques.

Self-Monitoring and Self-Management

Self-directed learning is a "basic human potential" based on taking responsibility for one's own learning through self-generating activities (Pietrzak, 2022). Shi (2021) expands the scope of inquiry by scrutinizing the attributes of self-directed learning, including learners' ability to exercise control over instruction, personal autonomy, self-regulated learning, and self-initiated learning. These components articulate self-direction as an endpoint and a learning mechanism. Furthermore, Ozer and Yukselir (2021) is aware of both internal and environmental elements that encourage and support self-directed learning. Self-direction is seen in education as a way of planning lessons and as a technique of learning with cognitive and motivational components (Chukwuedo, Mbagwu, & Ogbuanya, 2021; Nash, 2022). Garrison (1997) gives a thorough theoretical framework that utilizes three dimensions to connect the social, cognitive, and motivational components of learning. Self-management, the first dimension, is concerned with task concerns related to the learning process as well as the management of learning resources and assistance. According to this perspective, students should take an active role in their education and be provided options for accessible materials, flexible scheduling, and feedback. Setting goals and interdependence, which represents institutional norms and standards as well as the learners' integrity and choice, are two aspects that Garrison considers when discussing self-management.

Learners' Perspectives on the Challenges to Use mobile-assisted Language Learning

The use of mobile-aided language learning in educational contexts is dependent on a number of elements, including an acceptance of its ability to change learning paradigms and how education is carried out (Yunusa & Umar, 2021). Simply put, technology for many individuals means using various digital tools without understanding their purpose or integration (Jaiswal, 2020). Producing information, disseminating it to students, and helping people solve issues are the technologies' secondary goals (Hernandez-de-Menendez, Escobar Díaz, & Morales-Menendez, 2020). Naturally, several difficulties and causes affect whether such aims are achieved. One thing that has to be highlighted is how stakeholders see mobile technology and aided language learning (Hoi & Mu, 2021). Undoubtedly, instructors and students constitute the cornerstone of education, and occasionally, their prior encounters with mobile technology can generate reservations about adopting mobile learning. There exists a perception among educators that students utilize mobile gadgets predominantly for socializing, rather than for academic purposes, leading to reluctance towards mobile learning. Such educators harbor concerns that mobile learning may introduce disruptive elements that could impair the learning process by distracting students. Consequently, many of them proscribe the use of mobile devices in the classroom (Hossain et al., 2021; Martin, 2021). Additionally, given how much work it may take to deploy technology in the classroom, some instructors may choose not to use it (Martin, 2021). Regarding this, Calderón, Ramos-Pardo, and Suárez Guerrero (2022) looked at how instructors felt about using mobile-assisted language learning in the classroom. In the end, they came to the conclusion that organizational efforts should concentrate on educating learners about mobile technology and giving them hands-on experience or organizing a particular design challenge for learners' involvement. In conclusion, teachers' views regarding technology have a significant impact on their acceptance of and usage of it. If learners have a negative perception of IT, they won't employ mobile-aided language learning technology, which will deepen the gap between educators' and students' conceptions of learning (Calderón et al., 2022).

As in less technologically sophisticated nations, the access problem is made worse by severe poverty, the spread of illness, and a lack of political will to improve the situation via effective planning (Wu & Miller, 2021). Additionally, educational aspects including instructors' levels of education and literacy as well as their access to professional development are crucial in determining how often they employ mobile-aided language learning (Jeong, 2022; Rajendran &

Yunus, 2021). Furthermore, there is a paucity of requisite learning materials and resources that are indispensable for the seamless integration of mobile learning into the classroom. Against this backdrop, we embarked on a research inquiry to examine how this scenario influences the interplay between self-regulation and confidence in the efficacy of English language acquisition.

Self-monitoring refers to the process by which the learner takes responsibility for the development of personal meaning—that is, fusing new ideas and concepts with previous knowledge (Garrison, 1997). Garrison also calls it "cognitive responsibility," which means that both thinking and thinking about thinking are involved. Also, emphasizes the significance of metacognitive proficiency, which is associated with the ability to think analytically and reflect. This variable is significant in this study because the second research objective is to learn how and why students use mobile devices to learn a language. Self-management, self-monitoring, and motivation all come together in Garrison's self-directed learning paradigm. This is the model's most important part.

So, by considering the aforementioned sections' debate this study has hypothesized the following hypotheses to confirm the role of mobile-assisted language learning devices and applications in the learning of college-level students in China (Figure 1):

H1: Self-monitoring has a significant impact on self-management.

H2: Self-management has a significant impact on learners' beliefs about how their language skills are getting better

H3: Self-management significantly mediates the relationship between self-monitoring and learners' beliefs about how their language skills are getting better.

H4: Learner thoughts on the problems with using mobile phones to learn a language significantly moderates the relationship between self-management and learners' beliefs about how their language skills are getting better.

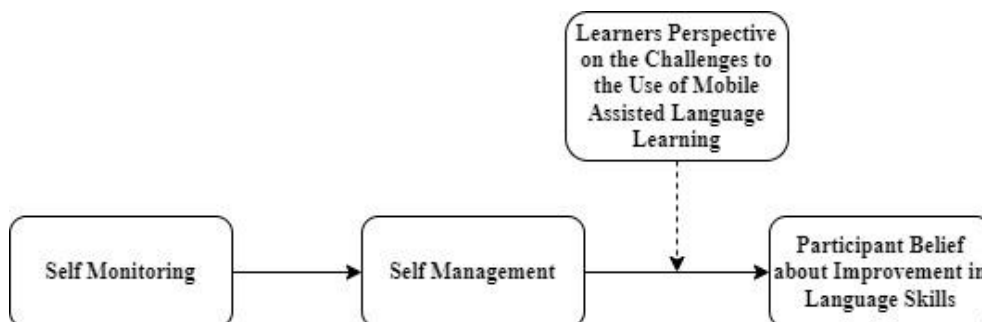


Figure 1. Theoretical Model

Methodology

Sampling and Procedure

In this study, researchers looked at the Chinese education system from different points of view. A non-probability judgement sampling method was used to choose the samples for this study. For this investigation, first-hand information was gathered through a closed-ended questionnaire. For this quantitative study, information from college students was gathered through a survey in Shanghai, China. Non-probability sampling was used because it was hard to get information about students. When there isn't a sample frame, non-probability sampling can also be used (Zikmund, Babin, Carr, & Griffin, 2013). Prior to engaging with the participants and soliciting their input, we followed a methodical approach. We commenced by apprising the study participants about the study's nature, objectives, and significance. Subsequently, the initial draft of the questionnaires was formulated in English and was subjected to a meticulous review by two experts proficient in both Chinese and English languages. These experts demonstrated an exceptional command of both languages.

Respondents didn't get paid for their time, and they didn't have to take part. When 450

paper-and-pencil questionnaires were sent to college and university students, 336 were filled out, which is a response rate of 74.66%. We also had to get rid of seven answers because they were not complete. As a result, 329 questionnaires were sent back, of which 148 male respondents (44.98%) and 181 female respondents (55.01%) gave correct answers.

Also, Harman's single factor with a single factor for common method bias was used to look at the CBM data. This method combines all of the parts into a factor analysis. If the first factor explains more than half of the total variation, the data has a CBM problem. The results of the factor analysis show that the first factor only makes up 30.37% (less than 50%) of the total variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). So, there is no need to worry about common method bias with the data.

Measures

There are measurement scales for a number of different things, such as self-management, self-monitoring, participants' beliefs about how their language skills are getting better, and their thoughts on the problems with using mobile phones to learn a language. With the exception of the control variables, participants' answers were also graded on a five-point Likert scale ranging from strongly agree 1 to 5 strongly disagree. This study used a 10-point scale to measure self-management (García Botero et al., 2019). Whereas for self-monitoring a fifteen-item scale has been used, which is adapted from García Botero et al. (2019). A five items scale by Kondo et al. (2012) was used to collect data on participants' beliefs about improvements in language skills. A six items scale by Dashtestani (2013b) was used to collect the data on learners' perspectives on the challenges to the use of mobile phones for language learning.

Statistical Procedure

Partly Least Squares Structural Equation Modelling (PLS-SEM) was used in this research. PLS-SEM is a causal-predictive SEM method that concentrates on creating structural predictions using statistical models (Ringle et al., 2015). The spread, form, and bias of the population sampling distribution were discovered using 5000 rounds of the Bootstrapping technique (Hair, Risher, Sarstedt, & Ringle, 2019). For estimating our model, PLS outperforms the conventional covariance-based SEM (CBSEM) because it can deal with multivariate normality, measurement level, sample size, model complexity, and uncertain variables. The study's aim is to develop and evaluate a theoretical model as shown in Figure 2 (Hair, Ringle, & Sarstedt, 2011; Hair, Sarstedt, Ringle, & Mena, 2012).

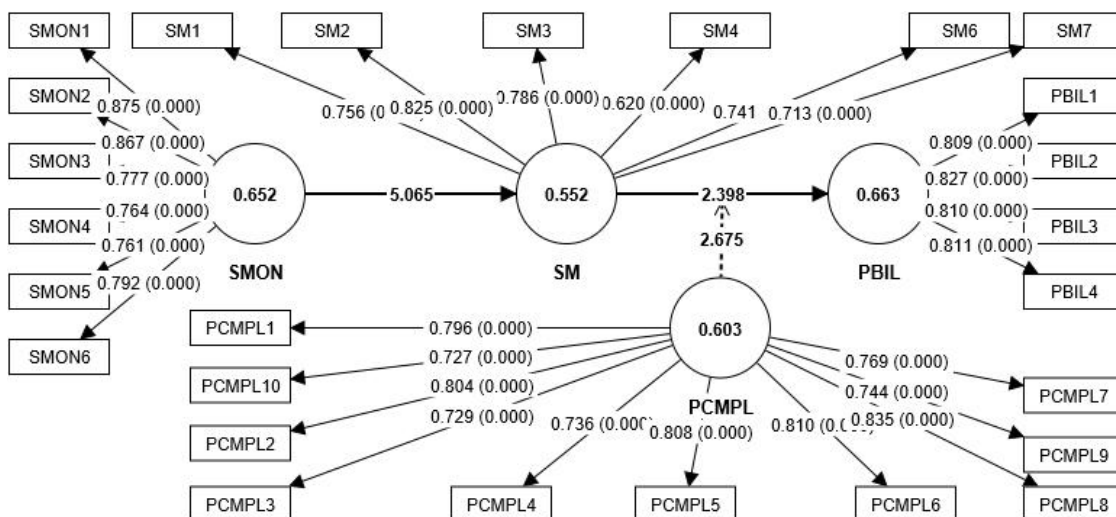


Figure 2. Structural Model

Results

The criteria of the convergent validity set are also taken into account in this work.

Confirmatory factor analysis (CFA) is used to measure how well the criteria work (Hair, Hult, Ringle, Sarstedt, & Thiele, 2017). Table 1 shows that Cronbach's alpha ranges from 0.831 to 0.926. Also, all of the variables in this study showed good fitness, which shows that the variables in this measurement mode have good convergent validity. In this study, the values for the variables' composite reliability (CR) and average variance extracted (AVE) range from 0.880 to 0.938 and 0.552 to 0.652, respectively. When the square root of the average variance extracted (AVE) is bigger than the absolute values of other coefficients linked to the correlation coefficients of this dimension, discriminant validity may be established. The results show that no other coefficient in the same column of the correlation coefficient table has a square root larger than the average variance found, which is larger than the absolute value of any other coefficient. This shows that the research is reliable and valid. The correlation was found with the HTMT method, and the results are shown in Tables 2 and 3.

Table 1. Loadings, composite reliability, and average variance extracted

	Item	Loading	Cronbach's alpha	Composite reliability	Average variance extracted
Participants' beliefs about improvements in language skills	PBIL1	0.809	0.831	0.887	0.663
	PBIL2	0.827			
	PBIL3	0.810			
	PBIL4	0.811			
Learners' perspectives on the challenges to the use of mobile phones for language learning	PCMPL1	0.796	0.926	0.938	0.603
	PCMPL10	0.727			
	PCMPL2	0.804			
	PCMPL3	0.729			
	PCMPL4	0.736			
	PCMPL5	0.808			
	PCMPL6	0.810			
	PCMPL7	0.769			
	PCMPL8	0.835			
	PCMPL9	0.744			
Self-Management	SM1	0.756	0.836	0.880	0.552
	SM2	0.825			
	SM3	0.786			
	SM4	0.620			
	SM5	0.741			
	SM6	0.713			
Self-Monitoring	SMON1	0.875	0.894	0.918	0.652
	SMON2	0.867			
	SMON3	0.777			
	SMON4	0.764			
	SMON5	0.761			
	SMON6	0.792			

Table 2. Model Fit Predictive Relevance of Model

	Q ² predict	RMSE	MAE	R-square
Participants' beliefs about improvements in language skills	0.200	0.904	0.723	0.325
Self-Management	0.101	0.967	0.578	0.119

Table 3. HTMT Discriminant Validity

	PBIL	PCMPL	SM	SMON
PBIL				
PCMPL	0.544			
SM	0.518	0.518		

	PBIL	PCMPL	SM	SMON
SMON	0.336	0.227	0.381	

Inner Model Analysis

Partial least squares structural equation modelling was used to build the model of the building (PLS-SEM). SmartPLS 4.0 was used to check the structural model in particular (path analysis). (Hair et al., 2017) says that R2, beta (β), and t-value were looked at in this study. Their ideas also centred on how well they predicted (Q2) and how big the effects were (f^2). In the structural model, the R2 values for the participants' beliefs about improvements in language skills ($R^2 = 0.325$) and self-management ($R^2 = 0.119$) were all higher than the recommended thresholds. Before putting hypotheses to the test, a value was given to the variance inflation factor (VIF). The VIF values were less than 5, ranging from 1.000 to 2.722. So, the predictor latent variables weren't too similar, which was a problem (Hair et al., 2017). Fit indices for the structural model of RMSEA = 0.078 also met the recommended threshold. Also, the study found that all of the variables in the structural model had a significant effect.

Examination of Mediating Effects

In the structural model, self-management can be thought of as a "mediating variable." The role of self-management as a link between self-monitoring and how the participants thought their language skills were getting better was looked at. A bootstrapping method is used to test the structural model to see the role of the mediator. Table 4 is interesting because it shows that the indirect effect of the quality of online information was confirmed. It shows how the setting up of mobile-assisted software helps with self-management practices for learning in a structural model.

Table 4. Data Coefficient

	Original sample	Standard deviation	T statistics	P values
SMON -> SM	0.345	0.068	5.065	0.0001
SM -> PBIL	0.166	0.069	2.398	0.008
SMON -> SM -> PBIL	0.057	0.029	1.963	0.025
PCMPL x SM -> PBIL	-0.100	0.038	2.675	0.004

Moderating Effect

The bootstrapping method was used to figure out how much of a moderating effect "learners' perspectives of the challenges of using mobile phones to learn a language" has in structural models. Table 4 shows that the results are in line with the hypothesis that learners' views of the difficulties of using mobile phones to learn a language play a big role in how self-management and participants' beliefs about their language skills improving affect each other. It shows how important the moderator effect setting in the structural model was for making a meaningful link between the learner and how well they learned.

Discussion

The goal of this study was to learn more about how mobile-assisted language learning applications work as a distinct outcome and predictor of self-management and learning, respectively. As a result, the study has numerous implications. To begin, we believe that self-monitoring is the most important component of a self-management context of language learning. This study made a second significant contribution by explaining the mediating role between self-monitoring and student belief about language proficiency because it took this variable into account as a mediator. Both of these sections highlight some of the research's most important implications for understanding students' behavioral intentions toward self-learning practices. Furthermore, learner perceptions of the problems with using mobile phones to learn a language were used as a moderator, but it plays an important role in understanding the use of mobile-assisted language learning applications. It becomes difficult to reap the benefits of mobile-assisted language learning software in the context of education without focusing on the challenges that

learners face.

This research will benefit college and education sector management, mobile device and application business owners, software developers, the industry think tanks, teachers, and participants in the creation and implementation of campaigns aimed at influencing learners' skills and self-management skills. The primary goal of this study is to improve learners' self-management and monitoring skills in order to improve self-learning practices. It appears that mobile applications have a significant impact that should be considered when attempting to improve educational quality. Finally, our findings suggest that the education sector, in particular, should address how mobile-assisted language learning aided in student understanding in order to improve student learning.

Limitations and Recommendations

The study's novel predictor of self-monitoring and self-management role towards beliefs about how their language skills are improving was investigated in this study. On the other hand, China's educational system is distinctive. As a result, it is recommended that this strategy be implemented in other emerging and developed countries while taking into account each of their unique context-based mobile application usages. Furthermore, this study only included data from Shanghai, China; no data from other Chinese cities were included. This could be addressed in future research. The study looked at how learner perceptions of the problems with using mobile phones to learn a language influence the relationship between self-management and belief in language skill improvement. The same sample can be used to examine how different types of applications influence and are influenced by students' behavioral intentions to use these applications. The structural equation modelling (SEM) method used in this study has several drawbacks. Future research may use causal research designs to evaluate the model's predictions about the relationships between causes and effects.

Conclusion

The present research endeavors to identify the motivational factors that drive students' engagement with mobile-assisted language learning and gauge their perceptions of learning efficacy. The investigation has yielded compelling insights into the learning styles of college students. The study's results reveal a noteworthy association between self-monitoring and self-regulation within China's educational framework. The research substantiates that the utilization of mobile applications to augment self-directed learning has led to a perceivable improvement in students' learning proficiencies. However, it clarifies the idea that by removing the barriers to mobile-assisted language learning software, we can enable students to learn different languages more effectively. Moving forward demonstrates that self-management also mediates the relationship between self-monitoring and participants' perceptions of their language skills improving. Furthermore, instructors must understand how to improve students' capabilities through facilities and their own management skills.

This study investigated the moderating role of learners' perspectives of the challenges of using mobile phones to learn a language on the interaction of self-monitoring and participants' perceptions that their language skills were improving, which was found to be significant. As the importance of mobile-assisted language learning grows by the day, reducing the difficulties associated with the ease of use of these applications requires a strong focus. Interestingly, learners' perspectives on the difficulties of using mobile phones have been found to have a significant moderating influence in this relationship. This emphasizes the importance of mobile-assisted language learning applications and devices in the administration of students' learning on the educational system.

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