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Teachers' conceptions and practices of mobile language learning and teaching

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Abstract: Though teacher conceptions of mobile language learning might affect their own language learning and their teaching practices, this is an area seldom examined. To address this paucity of research, fifty-nine students in an MA ELT (English Language Teaching) program, the majority of whom were in-service teachers, were investigated, via an open-ended survey, as to their understanding of mobile language learning and how they undertook mobile language learning and teaching. The results revealed that over eighty percent of the students understood mobile language learning as learning at any time and in any place or as the use of mobile technologies for learning. The participants mainly used mobile devices to practice their listening, reading and vocabulary. A cross-sectional analysis demonstrated that conceptualizing mobile learning as learning at any time and in any place is linked to the practices of listening, reading and online classes, while the conception of mobile learning as using mobile technologies is primarily associated with learning vocabulary, which indicates that conceptions of mobile learning are connected to learning practices. In terms of teaching, the participants reported mobile devices offered the most assistance via enhancing teaching effects, offering richer resources, helping with assigning homework, and communication with parents and students. The findings contribute to our understanding of teacher conceptions of mobile language learning and their teaching practices, which bear significant implications for mobile pedagogy and teacher education.

Keywords: mobile-assisted language learning (MALL); teacher conceptions of MALL; teacher practices of MALL

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1 Introduction

The rapid development of emerging technologies is making language learning ubiquitous and seamless, connecting learning inside and outside the classroom. Online learning on mobile devices is becoming ever more popular, however previous research has demonstrated that even when students were engaged in autonomous language learning outside the classroom, they still desired to have some teacher support and guidance (Kan and Tang 2018; Zhou 2016). It has also been argued that the participation and support of learning instructors is crucial to ensure learners' learning outcomes and engagement in mobile-based learning environments (Li 2023). Hence teacher conceptions and experiences of mobile language learning will exert a direct impact on the efficacy and quality of students' learning. However, this is an area seldom examined. The use of mobile technology in teaching and learning can be understood from a social informatics theoretical approach, in which technologies, people, and organizations are part of a heterogeneous socio-technical network (Kling 2007) and which draws attention to the importance of factors such as people and organizations or institutions in shaping the use of technology (see also Casebourne 2024). Arguably the decisions regarding whether and how to integrate technology into instruction are predominantly influenced by teachers (Tang and Rich 2017). Given that the initial novelty effects of technology tend to diminish over time, the focus invariably returns to the core principles: teachers' perspectives on pedagogy, learning processes, and the role of technology in education.

A broad overview of the research foci of MALL studies so far reveals that the people, i.e., prime users of technology (i.e., teachers and students) have drawn relatively less attention from researchers. Since mobile learning and MALL have become global trends in the last decade, as evidenced by initiatives such as UNESCO's *Mobile Learning Week* and *Best Practices in Mobile Learning* (UNESCO 2023), it is urgent to explore how mobile language learning is experienced by the people involved in this process, and the conceptions of mobile language learning held by one of its key agents – practicing teachers.

2 Literature review

This section will begin with a review of mobile learning, focusing on its pedagogical opportunities and challenges, followed by an analysis and discussion of prior studies on teachers' conceptions of mobile learning and teaching.

2.1 Mobile language learning, pedagogical opportunities and challenges

There are generally two approaches defining mobile learning, one centering on the technology aspect, emphasizing that learning takes place via a hand-held electronic device such as a smartphone or tablet; the other focusing on the active use of such devices in context: "Learning across multiple contexts, through social and content interactions, using personal electronic devices" (Crompton 2013a, p. 4). Continuous evolution of the field of mobile learning has yielded further perspectives, highlighting attributes such as personalisation, connectivity, authenticity, and relationship with time (Burden and Kearney 2016; Casebourne 2024; Crompton 2013b; Kukulska-Hulme 2016). Whatever the approaches, mobile learning provides more opportunities for practice, focus, feedback, reflection, collaboration, data collection, and can increase engagement and interaction (Kukulska-Hulme 2019). Mobile learning was also considered the only source of learning for students in some developing countries during the COVID-19 pandemic as they could not afford desktop computers or laptops (Halepoto and Lohar 2022).

As language learning requires frequent exposure, situated practice and constant feedback, it means that language learning and practice outside the classroom, which can be facilitated by the use of mobile technology, is considered essential for the development of language competence (Levy and Kennedy 2005). A growing body of studies on mobile assisted language learning (MALL) ranges in focus from the efficacy of various mobile applications and evaluation of MALL outcomes (Burston and Giannakou 2022; Tang et al. 2024), to emerging learner practices and perceptions (e.g., Kan and Tang 2018), integration of MALL into formal learning (Chwo et al. 2016), MALL learning activities design (Kukulska-Hulme et al. 2015) and recent trends in MALL (Karakaya and Bozkurt 2022; Kukulska-Hulme et al. 2021).

Despite the afore-mentioned learning opportunities brought about by MALL, there are also pedagogical challenges. First, MALL has been criticized for adhering to a behaviorist, teacher-centered framework that prioritizes content delivery – such as vocabulary and grammar drills – over fostering interactive or communicative learning. Second, MALL task types have been scrutinized for being short, self-contained and requiring minimal cognitive effort due to the fragmented and distraction-prone nature of mobile learning environments, used primarily for reinforcing and practicing previously learned material, rather than introducing complex new content (Burston 2014). Third, teachers encounter significant challenges when integrating mobile technology into their teaching, including psychological anxiety, expanded pedagogical responsibilities, and the need to adapt to flexible learning in digital environments (Zhang and Yu 2023). To address these

issues, institutions should provide sustainable technical support to help teachers navigate digital education effectively. Additionally, it is crucial to explore teachers' perceptions of mobile learning, including how it can support their teaching and learning practices, as well as the challenges they may face in its implementation.

2.2 Teacher conceptions of mobile learning and teaching

Conceptions of teaching and learning refer to instructional beliefs, perceptions, and understandings concerning the nature of the content to be taught, the methodologies and approaches to teaching and learning, including their underlying rationales, as well as the roles and responsibilities of both teachers and students in the educational process (Chan and Elliott 2004). Conceptions of teaching and learning have been broadly categorized into two primary approaches: quantitative and qualitative (Chan 2011). The quantitative conception also known as teacher-centered instruction, concentrates on teachers' input and the quantity of knowledge acquired, viewing teaching as transmission of knowledge and students as recipients of the knowledge. In this context, technology is primarily utilized as a tool for delivering knowledge. In contrast, the qualitative conception also known as student-centered instruction, aligns with the constructivist perspective of learning. Rather than being passive recipients, students are actively engaged in exploration, cooperation and critical thinking activities (Cheng et al. 2009). Here, technology is employed as a means to facilitate inquiry-based learning and collaborative engagement.

Conceptions of mobile learning might encompass its interpretation in terms of its distinctive features, requisite skills, and associated processes, often in comparison to other learning environments, such as face-to-face or online learning (Crompton and Burke 2018). Defined by its portability and flexibility, mobile learning is inherently shaped by contextual factors and influenced by individuals' personal and cultural backgrounds, which, in turn, affect its perception and utilization. These conceptions guide the processes and behaviours learners activate, such as microlearning or collaborative activities, and influence their effectiveness in supporting learning (Crompton and Traxler 2018). Ultimately, conceptions of mobile learning impact how learners engage with it and their ability to achieve educational goals (Crompton and Burke 2018).

In their study of pre-service teachers' conceptions of using mobile technology in their teaching and their practices of integrating technology in lesson plans, Tsai and Tsai (2019) discovered four different conceptions of teaching using mobile devices, described as "technology support", "knowledge transmission", "learning facilitation", and "supporting students to learn", with the first two perceived as quantitative or teacher-centered conceptions viewing instruction using mobile devices as a way to

transfer knowledge, while the last two as qualitative or student-centered conceptions considering mobile learning as an alternative to help students construct knowledge. Teachers with more constructivist views of teaching which emphasizes supporting student learning in a more active way, seemed to achieve better quality technology integration in their lesson plans than teachers with traditional, teacher-centered views. While pre-service teachers' own learning experiences with mobile devices may also influence their teaching, this aspect was not investigated. Additionally, it is important to note that this study focused on science teachers, not language teachers.

Based on interview data from 15 teachers, Hsieh and Tsai (2017) derived six hierarchically related categories of teachers' conceptions of mobile learning, from teacher-/content-oriented to learner-/learning-oriented, namely: meeting student preferences, conducting classes efficiently, invigorating/enhancing learning, parting from traditional teaching, focusing on student ownership and extending learning. In light of the RAT framework suggested by Hughes et al. (2006), which delineates three types of roles for technology: Replacement (technology substitutes established practices, serving as an alternative means to achieve the same instructional goals), Amplification (technology enhances current practices, increasing efficiency and productivity), and Transformation (technology fundamentally changes practices to create new learning opportunities), teachers' beliefs regarding mobile learning in Hsieh and Tsai (2017) fell within the amplification category. Their study calls for the investigation of teachers' conceptions of mobile learning as posited by Kukulska-Hulme (2012), whereby the adoption of technology in teaching can be possible only after faculty members are convinced of its value for everyday use.

Holding the belief that the acceptance of mobile technology by teachers will affect the contribution of mobile technology to learning, Baydas and Yilmaz (2018) applied a motivational model to investigate pre-service teachers' intention to adopt mobile learning, via structural equation modeling. Analysis of data demonstrated that the majority of the participating pre-service teachers' experiences of mobile learning were concerned with the learning of course contents (e.g., to prepare for assignments, exams, responding to in-class discussions or joining in learning communities), arising from cognitive needs (i.e., motivation to use a mobile learning tool for acquiring information, knowledge, understanding, etc.). Moreover, attitudes and cognitive needs had an influence on their behavioral intention to engage in mobile learning. Affective needs (for personal fulfillment through use of the tools in constructing knowledge within the learning process) also exerted an influence on their intentions to get involved in mobile learning. The study, conducted among pre-service teachers in a Faculty of Education in Türkiye, revealed how different needs such as cognitive, affective and social needs impact participants' intention to adopt mobile learning. The study demonstrates that teacher perceptions of mobile learning and how it might affect their intentions to use mobile technology in teaching and

learning is an important line of inquiry that should be extended to other disciplines and contexts. Furthermore, there is a lack of research with in-service teachers.

Over the past two decades, MALL studies on the Chinese mainland have predominantly focused on college students, with limited research on other student groups and even less on teachers (cf. Chen and Jia 2020). The main themes investigated to date have included the efficacy of MALL in enhancing language skills and optimizing teaching and learning modes (Meng and Chen 2021), students' mobile literacy (Wong and Li 2023), engagement in MALL (Jin 2020), as well as learning motivation and strategies (Hui et al. 2019). Though studies suggested that teachers predominantly utilized technology for teacher-centered activities, e.g., preparing instructional materials, rather than for student-centered approaches, e.g., fostering a communicative language learning environment (e.g., Li et al. 2019), they did not explore the underlying reasons why teachers seldom integrated technology for student-centered purposes, such as through an examination of teachers' conceptions of technology-enhanced learning.

A recent investigation into teacher and student evaluation of a lexical mobile learning program identified two limitations of distracting learning environments and uncertain learning outcomes, leading to recommendations for future WeChat-based language learning and teaching programs including the active involvement of instructors who were considered instrumental in enhancing learners' learning outcomes and engagement in mobile-based environments and the advancement of instructor technology-related knowledge and skills (Li 2023). This study again underscored the importance of research on teacher conceptions, roles and digital literacy in mobile learning contexts.

Against this backdrop, the present study intends to bridge a gap in the literature by concentrating on the prime users of technology, i.e., teachers, how they conceptualize MALL, their mobile-assisted language learning and teaching practices, and the inter-connection between their conceptions and practices.

3 Research methodology

3.1 Research context

The present study was undertaken within a Master's program in English language teaching at a university in China, which employs a blended teaching and learning approach incorporating face-to-face lectures, live-streamed sessions, as well as online synchronous and asynchronous support. The students enrolled in this program are studying part-time and are required to complete a minimum of ten core course modules ranging from applied linguistics, to language teaching methodology, second

language acquisition, computer-assisted language learning, and research methods. The majority of the participants in the program are in-service English language teachers.

The aim of this study is to investigate in-service teachers' conceptions of mobile language learning and explore how these conceptions are connected to their own personal experiences with mobile language learning and their teaching practices.

Specifically, the study set out to address the following research questions (RQs):

RQ1: How do teachers conceptualize mobile language learning?

RQ2: How are teacher conceptions of mobile language learning connected to their own language learning?

RQ3: How are teacher conceptions of mobile language learning linked to their language teaching?

3.2 Participants

As presented in Table 1, fifty-nine students enrolled in a Master's program in English Language Education participated in this study, comprising forty-two in-service teachers (71 %) and seventeen pre-service teachers. The majority of participants (49, or 83 %) were between the ages of 26 and 45 and possessed several years of language teaching experience. Additionally, nearly 90 % of the participants held a Bachelor of Arts (BA) or Bachelor of Science (BSc) degree. Given their teaching experience, it can be argued that these participants are well-positioned to provide nuanced insights into their conceptions of mobile language learning, as well as the effectiveness, usability, and pedagogical value of mobile language learning tools.

Among the 42 in-service teacher participants, more than 90 % worked in public schools or training schools, and most of them (85.72 %) taught primary or secondary school students (Table 2). The high percentage of participants working in public or training schools suggests that the findings would be particularly relevant to similar educational settings, where specific curricular demands and institutional policies might influence their perceptions toward and practices of integrating mobile language learning.

In summary, the demographic characteristics of these in-service teacher participants provide a context for understanding teacher conceptions of mobile language learning, offering insights for developing effective strategies and tools to enhance language education for learners in public and training school settings.

Table 1: Demographics of the participants.

Questions	Options	Frequency	Percentage
Gender	Female	50	84.75 %
	Male	9	15.25 %
Occupations	Teacher	42	71.19 %
	Not teacher	17	28.81 %
Age	25 and under	8	13.56 %
	26–35	31	52.54 %
	36–45	18	30.51 %
	46–55	2	3.39 %
Educational background	Diploma	1	1.69 %
	BA/BSc degree	53	89.83 %
	MA/MSc degree	4	6.78 %
	PhD/EdD degree and above	1	1.69 %

Table 2: Background of the in-service teacher participants.

Questions	Options	Frequency	Percentage
School types they work in	Public schools	16	38.1 %
	Training schools	22	52.38 %
	Vocational colleges	0	0 %
	Universities	1	2.38 %
	Other	3	7.14 %
Students they teach	Primary	16	38.1 %
	Secondary	20	47.62 %
	Tertiary	2	4.76 %
	Corporate employees	2	4.76 %
	Other	2	4.76 %

3.3 Data collection

An online survey questionnaire on mobile language learning and teaching was used to collect data (see Appendix A).

Previous questionnaire studies investigating teacher perspectives on mobile learning or mobile assisted language learning have focused on attitudes, readiness to adopt, and on perceived factors and barriers in mobile learning adoption (Alghamdi 2022; Alrasheedi et al. 2015; Nikolopoulou et al. 2023; Xu and Zhu 2020). They have not

addressed language teachers' conceptions of mobile learning, nor did they ask about their own learning to improve their language knowledge through mobile learning.

The purpose of the questionnaire in this study was to collect data relating to participants' conceptions and experiences of their mobile language learning and teaching. It included how they define mobile learning, their uses of mobile devices in their language learning and language teaching, perceptions of benefits and challenges, whether they encouraged their students to engage in out-of-class mobile learning, and any changes to how languages are taught and learnt. Based on the principles of experiential learning, using mobile devices for learning and teaching results in individuals reflecting on their experiences, both consciously and unconsciously, and leads them to form their own personal conceptions of what mobile learning is, its benefits and challenges. Furthermore, it is recognised that out-of-class and informal mobile learning experiences can differ significantly from classroom-based mobile learning, with out-of-class/informal learning having some transformational effects on achievement and practices (Cole and Vanderplank 2016; Dressman and Sadler 2020). The questionnaire for our study was developed collaboratively and iteratively by the research team, consisting of experts in mobile language learning, language teaching, and questionnaire design and analysis. It was decided to have mainly open questions and to avoid pre-prepared responses, thus enabling participants to express their conceptions and experiences more freely.

The questionnaire consists of seventeen questions, with objective questions, such as Questions 1–7 on participants' background, and subjective questions like Questions 8–22 (except Questions 9, 11, 13, 16, 19, 21) intending to gauge participants' conceptions of mobile learning and their use of mobile devices for their language learning and teaching. For participant responses to those subjective questions, one participant may mention multiple items, resulting in the total percentage of items exceeding the percentage of the participants who answered the questions.

The questionnaire was prepared in English; Chinese translation was provided in its administration. The questionnaire was sent to 90 students via an online questionnaire platform "Questionnaire Star", and 59 students returned complete responses.

3.4 Data analysis

Quantitative descriptive analysis was carried out for analyzing closed objective questions, namely Questions 1–7, 9, 11, 13, 16, 19 and 21 in the survey, to give us an initial broad understanding of the research questions we sought to answer.

For the subjective and open-ended questions, the phenomenographic method, a thematic analysis approach for examining participants' comprehension of various phenomena, concepts and principles in qualitative ways (Marton 1986), was

undertaken to investigate participating teachers' conceptions of and approaches to mobile language learning and teaching. The two researchers first reviewed participants' subjective responses, then underlined relevant sentences and main ideas indicating participants' conceptions, with similarities and differences being scrutinized, and qualitatively different categories of conceptions being identified through a process of iterative discussion.

For example, for Question 8 on conceptions of mobile language learning, three main themes – "time and place", "mobile technology" and "convenience" – were identified and coded. Descriptions such as "Regardless of where you are and how busy you are, you can make full use of all your spare time to enrich your knowledge and better your overall competence anytime" (Participant No. 33) and "You could learn it whenever and wherever you want" (Participant No. 43) were categorized under the theme of "time and place". Similarly, responses like "Use mobile devices, computers, ipads, and mobile phones for learning" (Participant No.10), "Learning knowledge by phone, computer or pad" (Participant No. 21) were coded under the theme of "mobile technology". Feedback such as "Convenient" (Participant Nos. 12/18/19) and "It will make the study more convenient, but it offers too much freedom for the student to learn" (Participant No. 25) were grouped under the theme of "convenience".

Nevertheless, it was also observed that some responses encompassed multiple themes. In particular, the themes of "time and place" and "mobile technology" were mentioned together in five responses. For example, statements like "Learning with the help of phones, computers, ipads, and without the limit of time and space." (Participant No. 7) and "I can study English at any place any time, I mainly use mobile phones and ipads for learning." (Participant No. 11) illustrate the overlap between these themes.

The preceding process is visualized in Figure 1, supported by an example of participants' responses to the conceptions of mobile learning (Question 8 in the survey) as elaborated above.

4 Results

Results will be reported and discussed in the order of the research questions.

4.1 Conceptions of mobile language learning

Regarding the definition of mobile learning (Table 3), over two fifths (42.6 %) of the participants highlighted the concepts of time and place, specifically referring to

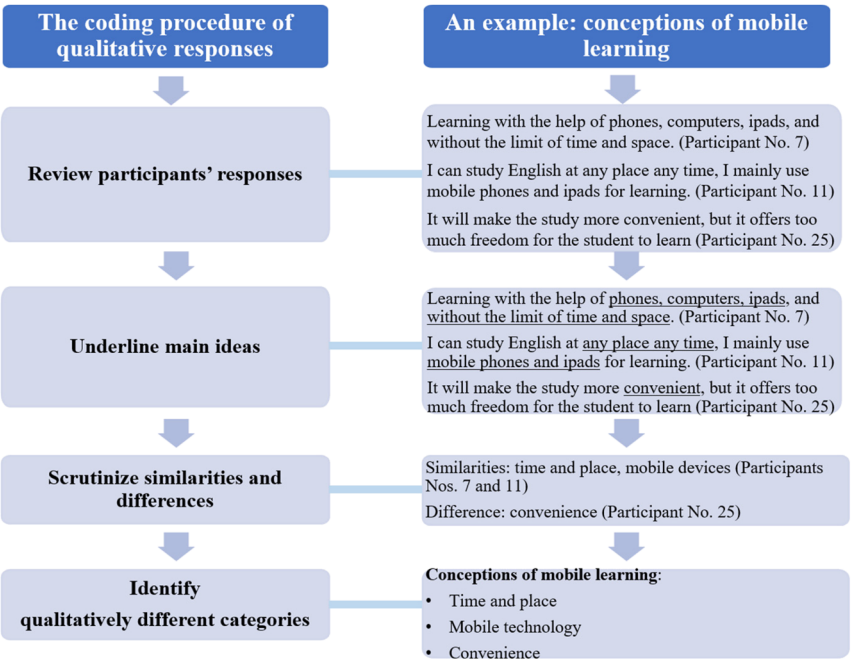

Figure 1: The coding procedure of qualitative responses.

learning without the limitations of time and location or the ability to learn anytime and anywhere. A comparable proportion of participants (38.9 %) defined mobile learning as learning facilitated by the use of mobile technologies or devices such as a cell phone and tablet computer. The two central themes, "time and place" and "mobile technology" align with some of the established definitions of Mobile-Assisted Language Learning (MALL) in previous research (e.g., Kukulska-Hulme 2012).

Notably, the terms "convenient" and "convenience" emerged as key concepts, ranking third in frequency (18.5 %) among participants' responses. Compared to previous research on conceptions of mobile language learning (Burden and Kearney 2016; Casebourne 2024; Crompton 2013a, 2013b; Kukulska-Hulme 2016), which rarely emphasized convenience, the findings of this study highlight its crucial role. This indicates that participants perceive the purpose of mobile learning as being related to its accessibility, usefulness, affordability, and related factors. This shift in perspective contributes a practical dimension, emphasizing that the flexibility and accessibility of mobile devices are perceived to be crucial factors in their effectiveness for language learning.

Table 3: Q8 – Key words defining mobile learning.

Items	Frequency	Percentage
Time and place	23	42.6 %
Mobile technology	21	38.9 %
Convenience	10	18.5 %
Online or Internet	7	13.0 %
More content	5	9.3 %
Wide population	1	1.9 %
Entertaining	1	1.9 %
Time-saving or more efficient	1	1.9 %

4.2 Conceptions and experiences of mobile language learning

Most of the participants (87.7 %) claimed they had used mobile devices for language learning (Question 9), and the top three responses to the purpose of mobile language learning were listening (41.7 %), reading (33.3 %) and vocabulary learning (27.1 %), followed by speaking (22.9 %), online class (16.7 %), and learning for teaching (10.4 %) (Table 4).

Participants' top preferences for listening, reading and vocabulary learning with mobile devices matched findings from earlier studies (e.g., Kan and Tang 2018; Read

Table 4: Q10 – What participants used mobile devices for in language learning.

Items	Frequency	Percentage
Listening	20	41.7 %
Reading	16	33.3 %
Vocabulary learning	13	27.1 %
Speaking	11	22.9 %
Online class	8	16.7 %
Learning for teaching	5	10.4 %
Information search	4	8.3 %
Writing	3	6.3 %
Grammar learning	1	2.1 %
Test preparation	1	2.1 %
Japanese learning	1	2.1 %
Homework	1	2.1 %

and Kukulska-Hulme 2015; Stockwell 2010), indicating learners' primary engagement with mobile language learning arising from cognitive needs as specified in Baydas and Yilmaz (2018).

Some example activities are reported by the participants, such as:

> "I use mobile devices for English listening (listening to news and TED talks), reading some English materials and studying some English courses." (Participant No. 16)

> "I study video courses from abroad, join pronunciation practice groups." (Participant No. 40)

Among the twenty-three participants **who mentioned time and place while defining mobile learning**, seven used mobile devices for listening and reading, respectively. Six used them in an online class, while others used them for vocabulary learning, speaking, and information search. Few participants practiced writing, prepared for tests, did homework, or learned grammar via mobile devices (see Figure 2). This suggests that activities like listening, reading, vocabulary learning, speaking, and information searches were more adaptable to mobile learning, as they were not significantly restricted by time and place.

For the twenty-one participants **who mentioned mobile technology while defining mobile learning**, eight used mobile devices to learn vocabulary, and five used them for listening and reading, respectively. Three participants utilized mobile devices in an online class and another three used them for learning teaching methods (see Figure 3). These findings suggest that mobile devices are considered to be particularly effective for vocabulary acquisition and engaging with audio and textual content, aligning with earlier studies by Kukulska-Hulme et al. (2017) and Kan and Tang (2018).

The participants who associated mobile learning with **convenience in Q8** mainly used mobile devices for four language skills (i.e., listening, reading, speaking

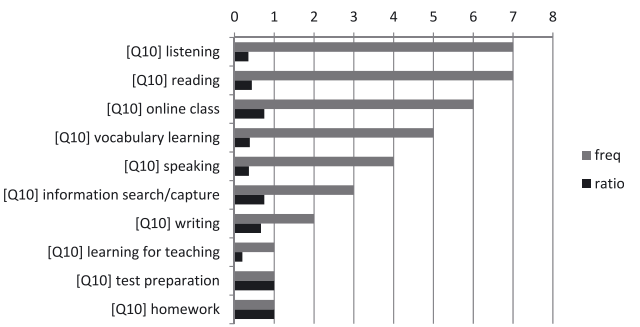

Figure 2: Frequency and ratio of participants' using mobile devices for language learning in Q10 who mentioned "time and place" in Q8.

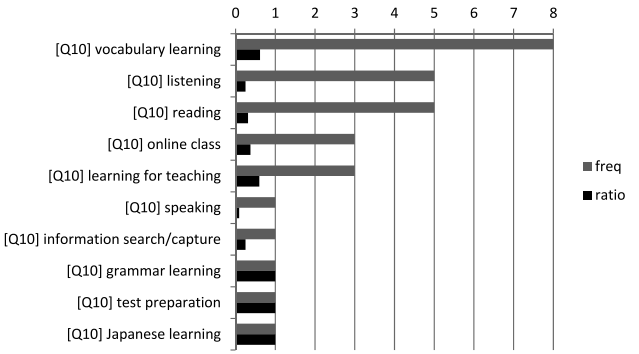

Figure 3: Frequency and ratio of participants' using mobile devices for language learning in Q10 who mentioned "mobile technology" in Q8.

and writing) and vocabulary learning, with listening accounting for the largest proportion (see Figure 4). This finding suggested that the perceived convenience of mobile learning strongly supported its use for a variety of language skills, particularly listening. This assertion was verified by research from Kim and Kwon (2012), which demonstrated the effectiveness of mobile devices for practicing listening skills due to their portability and the availability of abundant audio resources. Furthermore, Burston (2014) underscored that the on-the-go nature of mobile devices enabled learners to engage in listening practice more frequently and in diverse contexts, thereby enhancing their overall listening proficiency.

In order to further examine the participants' perception of mobile learning, they were asked if they thought mobile learning could help them tackle challenges in their language learning. The results revealed more than three quarters (78 %) of participants had a positive response (Question 11). As shown in Table 5, time and place (40 %) was the most important challenge (This is not surprising as the participants

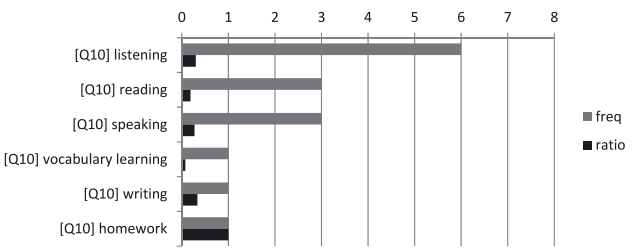

Figure 4: Frequency and ratio of participants' using mobile devices for language learning in Q10 who mentioned "convenience" in Q8.

investigated were in-service teachers who were studying in the program with a full-time job), which corresponded to the fact that 42.6 % of participants considered time and place was also one of the most important features while defining mobile learning (c.f. Table 3). Other challenges that mobile learning helped participants overcome included listening (20 %), speaking (15.6 %), acquiring new knowledge (13.3 %), vocabulary learning (11.1 %), and reading (8.9 %), with just a few participants naming other challenges.

Some participants commented:

> "The books are too heavy to carry, and the online and digital devices can help you read thousands of books whenever and wherever you want." (Participant No. 47)

> "I found it difficult to improve listening and speaking, but I started to use some APPs on the phone to practice whenever I want anytime I can. This turned out to be very useful for me." (Participant No. 38)

> "My work is teaching in a training school, so usually I am too busy to do the self-study. By using mobile learning, I can study when I was traveling or whenever I have time. It is a very important way for work people to keep study after graduation from school. It is fast and easy." (Participant No. 58)

Participants highlighted the convenience of mobile learning, such as accessing resources anytime and anywhere, improving listening and speaking skills through apps, and fitting study into busy schedules. Their comments emphasized the

Table 5: Q12 – Challenges participants encountered in learning where mobile learning helped them.

Items	Frequency	Percentage
Time and place	18	40.0 %
Listening	9	20.0 %
Speaking	7	15.6 %
Acquiring new knowledge	6	13.3 %
Vocabulary learning	5	11.1 %
Reading	4	8.9 %
Information search	3	6.7 %
Playing videos	2	4.4 %
Homework	1	2.2 %
Low-cost	1	2.2 %
Self-discipline	1	2.2 %
Parental supervision	1	2.2 %
Surface learning	1	2.2 %

flexibility and practicality of mobile learning as an effective tool for overcoming obstacles and maintaining continuous learning.

4.3 Conceptions and experiences of mobile language teaching

Among the 42 teacher participants, nearly three quarters (73.8 %) had used mobile devices for their teaching (Question 13). Nearly a quarter (23.3 %) used mobile devices to *enhance teaching effects* such as incorporating games, music, a WeChat audio tutorial, and teaching mini-lessons, while one fifth of participants respectively mentioned *using multimedia* (showing PPT slides or playing videos via mobile devices, 20 %), *teaching listening* (20 %), *teaching speaking* (20 %), and *assigning homework* (20 %) (Table 6), all of which mainly serve cognitive needs (Baydas and Yilmaz 2018).

Aligning teacher use of mobile devices in teaching with the RAT (i.e., replacement, amplification, and transformation) framework (Hughes et al. 2006) revealed teaching practices with mobile technologies such as *enhancing teaching effects, using multimedia* and *the teaching of listening, speaking, and assigning homework* all fall mainly into the amplification category, suggesting the use of technology was to increase efficiency and productivity. Specific examples included incorporating games into the learning process, using mobile devices to show PowerPoint presentations and play music to help students relax, providing WeChat audio tutorials to students, and assigning homework, giving feedback and delivering assessment. By amplifying and improving teaching efficacy and efficiency, the use of mobile devices made the educational process more productive and manageable for both teachers and students.

Table 6: Q14 – What participants used mobile devices for in teaching.

Items	Frequency	Percentage
Enhancing teaching effects	7	23.3 %
Using multimedia	6	20.0 %
Listening	6	20.0 %
Speaking	6	20.0 %
Homework	6	20.0 %
Reading	3	10.0 %
Online class	2	6.7 %
Vocabulary learning	2	6.7 %
Teacher training	1	3.3 %
Test preparation	1	3.3 %

The participants were then asked how mobile devices assisted them most in teaching. Enhancing teaching effects was highlighted again, as more than one third (37 %) of participants mentioned it, followed by richer resources (22.2 %), homework (18.5 %), and communication with parents and students (14.8 %) (Table 7), which echoes Hsieh and Tsai's (2017) findings and stresses the prominent role of the affordances of mobile technology, such as its multimedia functions, availability of resources, and communication functions affecting teachers' use of mobile technology in their teaching.

Arguably the first three, namely *enhancing teaching effects, richer resources and homework,* might serve learners' cognitive needs (i.e., quest for acquiring information, knowledge and understanding), while *communication with parents and students* serves social needs (i.e., for interaction and collaboration) as categorized in Baydas and Yilmaz (2018). For example, one participant commented on using resources on mobile devices to facilitate their teaching:

> "I can use mass of the resources on the net and also ask my students to use a dubbing app on their parents' phones to practice their speaking and listening." (Participant No. 38)

Another participant noted an increase in the speed of interactions:

> *"Through mobile devices, I can monitor my students' learning progress and communicate with the parents in a timely manner." (Participant No. 26.)*

A very high percentage (85.7 %) of participants encouraged their students to use mobile devices outside the classroom for language learning (Question 16). The top three detailed responses were related to listening, vocabulary learning, and speaking, which accounted for about one third (37.1 %), one quarter (25.7 %), and one fifth (20 %), respectively (Table 8).

Participants' responses for encouraging students' mobile learning practices (Table 8) are different from their own mobile learning preferences of listening, reading and

Table 7: Q15 – Aspects of mobile devices which assisted participants most in teaching.

Items	Frequency	Percentage
Enhancing teaching effects	10	37.0 %
Richer resources	6	22.2 %
Homework	5	18.5 %
Communication with parents and students	4	14.8 %
Time-saving or more efficient	3	11.1 %
Time and space	2	7.4 %
Low-cost	1	3.7 %

Table 8: Q17 – Responses on encouraging students to use mobile devices outside the classroom for language learning.

Items	Frequency	Percentage
Listening	13	37.1 %
Vocabulary learning	9	25.7 %
Speaking	7	20.0 %
Locating information	4	11.4 %
Homework	4	11.4 %
Enhancing teaching effects	3	8.6 %
Time and space	3	8.6 %
Reading	2	5.7 %
Online class	1	2.9 %

vocabulary learning as the top three (c.f. Table 4). Arguably one of the reasons might be that they are mainly teaching primary and secondary students, for whom listening, vocabulary learning and speaking might be more important than reading. For example, participants stressed the importance of dubbing and watching English cartoons for kids:

> "I ask my students to take a video clip about their role play and share it in the Wechat group or I encourage them to be a dubber in some kind of APP." (Participant No. 26)

> "I will ask them to use a dubbing APP to imitate the pronunciation and intonation of the native speakers and they can also enrich their vocabulary along the way." (Participant No. 38)

> "First, dub for movies. Second, English cartoons for kids to develop sense of the languages and get attracted to the plot and understand the meanings without the help of native tongue." (Participant No. 42)

Participants emphasized the use of engaging and interactive methods, such as dubbing and watching English cartoons, to develop students' pronunciation, intonation, and vocabulary in an enjoyable and meaningful way. These strategies not only help students improve their language skills but also foster intrinsic motivation by making learning fun and contextually relevant.

The biggest challenge the participants faced in their teaching was less-motivated students (43.9 % in Table 9), which could explain why the highest percentage of teachers selected using mobile technology mainly to enhance teaching effects (such as incorporating games, music, etc.), to engage and motivate students (c.f. Table 7). This finding is not surprising as earlier studies found mobile devices were being used to promote student engagement in the class (e.g., Hsieh and Tsai 2017).

When asked if they thought mobile learning could help tackle these challenges, 61.9 % chose the positive answer (Question 19). A notable response to detailed elaboration is the entertaining property of mobile learning (45.8 %) (Table 10), which echoed findings from previous studies such as Hsieh and Tsai (2017). As one participant noted,

> "The dubbing app includes many materials, such as cartoons, movies and speeches, which are interesting. Besides, students can use their spare time to do online reading." (Participant No. 38)

Over a third (37.5 %) of the participants highlighted time and place. There were 20.8 % who stated they could get richer online resources via mobile learning when they met problems in teaching. One participant commented,

> "(Mobile learning helps to) break the barriers of time and place, enhance autonomous learning and interest through effective programs on mobile devices." (Participant No. 36)

For the 18 participants who were challenged by **less-motivated students** in teaching in Q18 (Table 9), most of them (8) thought this could be solved by mobile learning because it was entertaining (see Figure 5).

As one participating teacher commented,

> *"Using fun games online could attracts students' interest. By using the Internet, we could get more information to teach and learn." (Participant No. 43)*

The 7 participants who were challenged by **limited resources** in teaching (Table 9) indicated they benefited from mobile learning because it was not limited by time or place, it was entertaining, and it provided richer resources for them (see Figure 6).

Furthermore, entertainment and flexibility of time and place of mobile learning helped 7 participants improve their **communication with parents and students** (Figure 7).

Table 9: Q18 – Challenges participants encountered in teaching.

Items	Frequency	Percentage
Less-motivated students	18	43.9 %
Limited resources	7	17.1 %
Communication with parents and students	7	17.1 %
Teaching methods	6	14.6 %
Teaching speaking	6	14.6 %
Learner support	6	14.6 %
Teaching grammar	5	12.2 %
Classroom management	5	12.2 %

Table 10: Q20 – Ways mobile learning helped participants tackle challenges.

Items	Frequency	Percentage
Entertaining	11	45.8 %
Time and place	9	37.5 %
Richer resources	5	20.8 %
Enhancing teaching effects	2	8.3 %
Facilitating teaching	1	4.2 %

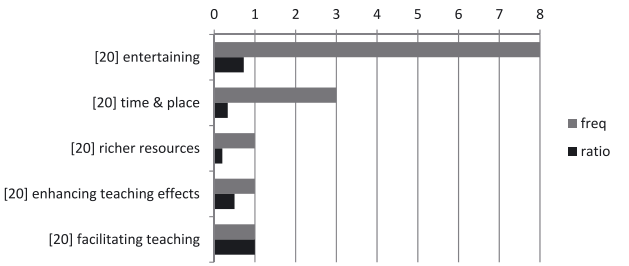

Figure 5: Frequency and ratio of participants' opinions on the ways that mobile learning helped tackle the challenge of less-motivated students in Q20.

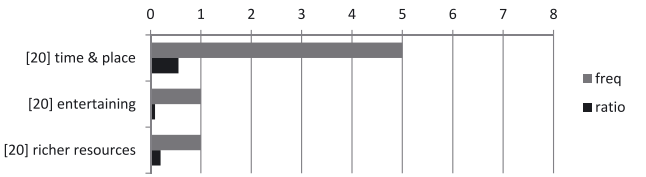

Figure 6: Frequency and ratio of participants' opinions on the ways that mobile learning helped tackle the challenge of limited resources in Q20.

Lastly, the data indicated that a significant majority of participants (71.2 %) believed that mobile learning has transformed the way languages are taught and learned (Question 21). The primary (non-exclusive) reasons cited for this change are its flexibility in terms of time and place (68.4 %), access to richer resources (18.4 %), and its time-saving nature coupled with higher efficiency (18.4 %) (Table 11). These findings highlight mobile learning's ability to address traditional limitations in language education, such as dependency on physical classrooms, fixed schedules, and limited access to learning materials.

Participants made the comments shown below,

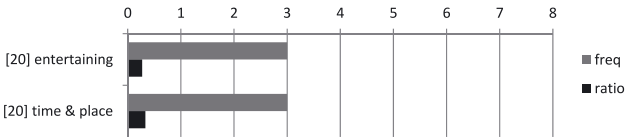

Figure 7: Frequency and ratio of participants' opinions on how mobile learning helped tackle the challenge of communication with parents and students in Q20.

"Students can learn a language not just from teacher." (Participant No. 13)

"Mobile learning meets a lot of people's need and gives people more chances to learn anytime and anywhere." (Participant No. 23)

"It saves a lot of time and is more flexible. It's convenient for both teachers and students to learn something." (Participant No. 28)

"Teaching resources can be more easily and widely shared, teacher powerpoints and audios can be used repeatedly for revision, and the time and location of studying is not restricted." (Participant No. 29)

Participants' comments further reinforce the flexibility mobile learning offers to both students and teachers, the equitable access to learning resources, and the ability to revisit teaching materials for deeper understanding and revision. Mobile learning appears to empower learners to take control of their education, enabling self-paced study and facilitating access to diverse resources beyond the classroom environment.

Table 11: Q22 – Reasons that mobile learning changes the way languages are taught and learnt.

Items	Frequency	Percentage
Time and place	26	68.4 %
Richer resources	7	18.4 %
Time-saving or more efficient	7	18.4 %
High-quality resources sharing	5	13.2 %
Entertaining	4	10.5 %
Enhancing teaching effects	3	7.9 %
Broadening horizon	2	5.3 %
Wide population	1	2.6 %

5 Discussion and conclusion

The study was concerned with how teachers' conceptions of mobile learning might be connected to their own language learning with mobile devices and their language teaching practices. Conceptions are partly formed through personal experience (e.g., Crompton and Traxler 2018); therefore, our investigation also included questions about their experiences. The findings from this study provide valuable insights into the conceptions and experiences of mobile language learning and teaching among participating teachers.

The most significant contribution of the study is that through the cross-sectional analysis, a close connection between teacher conceptions of mobile language learning and their learning practice was identified via empirical data. The conception of mobile learning in terms of its flexibility regarding time and place is connected with the practice of listening, reading and online class, while understanding mobile learning as the use of mobile technologies is mostly related to learning vocabulary. Moreover, the concept of convenience (contributing a practical dimension to the understanding of mobile learning), is related to listening, reading and speaking. These practices are consistent with earlier studies, underscoring the cognitive benefits of mobile learning tools in enhancing language skills (e.g., Baydas and Yilmaz 2018). The data also showed that mobile learning is considered to be particularly effective in overcoming challenges related to time and place, as well as for specific language skills such as listening and speaking. In terms of teaching, the participants reported mobile devices offered the most assistance via enhancing teaching effects, offering richer resources, helping with assigning homework, and communication with parents and students.

The study highlights the multifaceted nature of mobile language learning and teaching, emphasizing its flexibility, technological integration, and practical benefits. The positive attitudes of participants towards mobile learning and its perceived effectiveness in addressing educational challenges suggest that mobile technologies will continue to play a crucial role in the future of language education. This is particularly true given the extensive teaching experience of the participants, as indicated by their age range and years of service, suggesting that their insights are grounded in practical, real-world classroom dynamics.

The study also demonstrates an increasing shift in MALL pedagogy, moving from a focus on cognitive uses, such as the facilitation of language skills, to an emphasis on social and interactive applications, like enhancing teaching effects to engage less-motivated students. The cross-sectional analysis revealed that mobile learning is used to tackle challenges in teaching such as engaging less-motivated students, due to its entertainment feature, offering richer resources regardless of time or place constraints, and increasing communication with parents and students (e.g., Hsieh

and Tsai 2017). This integration was often aimed at enhancing teaching effectiveness through interactive and engaging methods such as games, music, and audio tutorials, reflecting a growing trend towards more dynamic and student-centered learning environments. This serves as convincing evidence against the criticism that mobile learning follows a teacher-centered framework prioritizing knowledge transmission, as pointed out by earlier researchers (e.g., Burston 2014).

Furthermore, the research finding has yielded implications for future teacher education programs. Given the associations between conceptions and practices, it follows that teachers would benefit from expressing and reflecting on their conceptions of mobile learning, so that they can appreciate a wider range of conceptions and understand how these were acquired. This is important because teachers' conceptions may influence their mobile practices, and thereby their students' learning opportunities and practices: for example, how flexibly the technology is used across time and place, or which language skills receive more attention. Such reflection should be included in teacher education programs to encourage more considered adoption of mobile learning.

More importantly, beyond identified challenges such as teacher psychological anxiety and the need to adjust to flexible learning in mobile contexts (e.g., Zhang and Yu 2023), teachers in this study reported their main challenge as engaging students in the class. Their top priorities in addressing pedagogical challenges have become exploring the entertaining properties of mobile technology, such as games, videos, and songs, to motivate students, and using mobile platforms to foster interaction and communication with students and parents. This shift may be due to the advancement and widespread use of technology, which has encouraged teachers to move past psychological fears and explore the rich potential of MALL. Future teacher education programs should focus more on helping teachers design engaging and interactive MALL activities.

Additionally, the study offers implications for out-of-classroom learning. Teachers encourage students to use mobile learning outside the classroom and play a guiding role in this process, reinforcing the importance of teachers' roles as highlighted in earlier studies (e.g., Kan and Tang 2018). The activities assigned by teachers primarily focus on listening, vocabulary, and speaking, with dubbing being particularly popular. This supports the entertainment aspect of Mobile-Assisted Language Learning (MALL) emphasized by teachers in this study.

The research has some limitations. Since the teachers participating in the study were studying as well as teaching, their personal study habits and educational needs may be reflected in some of their responses, which could differ from teachers who

are not currently enrolled in an educational programme. Secondly, since the current research is mainly based on teacher responses to open-ended questions, incongruence might exist between teachers' self-reports and their actual teaching practice. Further investigation employing multiple data sources to examine the interplay between teachers' conceptions of mobile learning and their actual teaching practice is needed.

In the current era, the integration of generative AI into language teaching and learning is gaining momentum, presenting new opportunities and challenges for teacher education programs. This study offers valuable insights into how such programs can adapt to support teachers effectively. First, teacher education programs should provide opportunities for educators to reflect on and share their conceptions of AI in language teaching and their experiences with AI tools, allowing them to explore different conceptions and diverse applications, and collaboratively develop innovative approaches to language teaching. Second, teacher education programs should highlight the synergies between mobile technologies and generative AI. Training should concentrate on equipping teachers to use AI-powered mobile applications – such as chatbots, adaptive learning platforms, and content generation tools – to expand students' opportunities for language practice beyond the classroom. By integrating these technologies thoughtfully, teachers can maximize the potential of AI and mobile learning to create engaging and effective language learning experiences.

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Appendix A: Survey on mobile language learning and teaching

Dear participants,

This short survey aims to understand your use of mobile devices for your language learning and teaching, please kindly answer the questions truthfully. Your replies will be kept strictly confidential, and will be used for research purposes only. Thank you very much for your cooperation!

You can answer the questions in English or in Chinese.

The mobile learning research team

1. Please tell us your age:
   A. Under 25
   B. 26-35
   C. 36-45
   D. 46-55
   E. Over 56
2. Gender:
   A. Male
   B. Female
3. Educational background:
   A. Diploma
   B. BA/BSc degree
   C. MA/MSc degree
   D. PhD/EdD degree and above
4. Are you a teacher now?
   A. Yes
   B. No

Note: If you are a teacher, please answer Questions 5–7.

5. Which language(s) are you teaching?
6. What type of students do you teach:
   A. Preschool
   B. Primary
   C. Secondary
   D. Tertiary
   E. Corporate employees
   F. Other, please specify ___

7. What type of schools do you work at:
   A. Public schools
   B. Training schools
   C. Vocational colleges
   D. Universities
   E. Other, please specify ____
8. Based on your current understanding, how might you define mobile learning?
9. Have you ever used mobile devices for your language learning?
   A. Yes
   B. No
10. If yes, what did you/do you use mobile devices for in your language learning?
11. Do you think mobile learning can help you tackle challenges in your language learning?
    A. Yes
    B. No
12. If yes, briefly describe the challenges you have encountered and how mobile learning has helped?
13. Have you ever used mobile devices for your teaching?
    A. Yes
    B. No
14. If yes, what do you use mobile devices for in your teaching?
15. If yes, in which ways did they assist you most?
16. Do you encourage your students to use mobile devices outside the classroom for language learning?
    A. Yes
    B. No
17. If yes, please give some details.
18. What are the top three challenges in your teaching?
19. Do you think mobile learning can help tackle those challenges?
    A. Yes
    B. No
20. If yes, how?
21. Do you think mobile learning changes the way languages are taught and learnt?
    A. Yes
    B. No
22. If yes, how?

Thank you very much! Would you like to share more of your views on mobile language learning with us? If yes, please kindly leave your information below, many thanks! ___

References

Alghamdi, Norah. 2022. EFL teachers' perceptions on the implementation of mobile-assisted language learning in Saudi Arabia during COVID-19: Challenges and affordances. *Journal of Language Teaching and Research* 13(1). 92–100.

Alrasheedi, Muasaad, Luiz Fernando Capretz & Arif Raza. 2015. Instructor perspectives of mobile learning platform: An empirical study. *International Journal of Computer Science and Information Technology* 7(3). 27–40.

Baydas, Ozlem & Rabia M. Yilmaz. 2018. Pre-service teachers' intention to adopt mobile learning: A motivational model. *British Journal of Educational Technology* 49(1). 137–152.

Burden, Kevin & Matthew Kearney. 2016. Conceptualising authentic mobile learning. In Daniel Churchill, Jie Lu, Thomas K. F. Chiu & Bob Fox (eds.), *Mobile learning design: Theories and application*, 27–42. Singapore: Springer.

Burston, Jack. 2014. MALL: The pedagogical challenges. *Computer Assisted Language Learning* 27(4). 344–357.

Burston, Jack & Konstantinos Giannakou. 2022. MALL language learning outcomes: A comprehensive meta-analysis 1994–2019. *ReCALL* 34(2). 147–168.

Casebourne, Imogen. 2024. Left to their own devices: An exploration of context in seamless work-related mobile learning. *British Journal of Educational Technology* 55(4). 1772–1789.

Chan, Kwok-Wai. 2011. Pre-service teacher education students' epistemological beliefs and conceptions about learning. *Instructional Science* 39. 87–108.

Chan, Kwok-Wai & Robert G. Elliott. 2004. Relational analysis of personal epistemology and conceptions about teaching and learning. *Teaching and Teacher Education* 20(8). 817–831.

Chen, Zhenzhen & Jiyou Jia. 2020. 我国移动辅助语言学习研究二十年: 述评与展望. [Twenty years of research on mobile-assisted language learning in China: Review and prospects]. *Foreign Language World* 196(1). 88–95.

Cheng, May M. H., Kwok-Wai Chan, Sylvia Y. F. Tang & Annie Y. N. Cheng. 2009. Pre-service teacher education students' epistemological beliefs and their conceptions of teaching. *Teaching and Teacher Education* 25(2). 319–327.

Chwo, Shu-Mei Gloria, Michael W. Marek & Wen-Chi Vivian Wu. 2016. Curriculum integration of MALL in L1/L2 pedagogy: Perspectives on research. *Journal of Educational Technology & Society* 19(2). 340–354.

Cole, Jason & Robert Vanderplank. 2016. Comparing autonomous and class-based learners in Brazil: Evidence for the present-day advantages of informal, out-of-class learning. *System* 61. 31–42.

Crompton, Helen. 2013a. A historical overview of M-learning. In Zane L. Berge & Lin Y. Muilenburg (eds.), *Handbook of Mobile Learning*, 3–14. New York: Routledge.

Crompton, Helen. 2013b. Mobile learning: New approach, new theory. In Zane L. Berge & Lin Y. Muilenburg (eds.), *Handbook of Mobile Learning*, 47–57. New York: Routledge.

Crompton, Helen & Diane Burke. 2018. The use of mobile learning in higher education: A systematic review. *Computers & Education* 123. 53–64.

Crompton, Helen & John Traxler. 2018. *Mobile learning and higher education*. New York: Routledge.

Dressman, Mark & Randall W. Sadler (eds.). 2020. *The handbook of informal language learning*. Hoboken, New Jersey: John Wiley & Sons.

Halepoto, Aqsa & Shoukat Ali Lohar. 2022. Effectiveness of mobile-assisted language learning (MALL): Perception of university teachers in Nawabshah, Pakistan. *The American Journal of Humanities and Social Sciences Research (THE AJHSSR)* 5(1). 1–5.

Hsieh, Wen-Min & Chin-Chung Tsai. 2017. Taiwanese high school teachers' conceptions of mobile learning. *Computers & Education* 115. 82–95.

Hughes, J., R. Thomas & C. Scharber. 2006. Assessing technology integration: The RAT – replacement, amplification, and transformation – framework. In *Proceedings of Society for Information Technology & Teacher Education International Conference 2006*, 1616–1620. Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).

Hui, Lianghong, Ying Zhang & Xinxin Li. 2019. 移动学习环境下大学生英语学习动机调控实证研究 [An empirical study on the regulation of college students' English learning motivation in the mobile learning environment]. *Foreign Language Teaching* 40(1). 59–65.

Jin, Feilong. 2020. 基于Q方法的大学生外语移动学习参与度研究 [A study on college students' engagement in mobile-assisted language learning based on the Q methodology]. *Foreign Language World* 196(1). 79–87.

Kan, Qian & Jinlan Tang. 2018. Researching mobile-assisted English language learning among adult distance learners in China: Emerging practices and learner perception of teacher role. *International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT)* 8(3). 1–28.

Karakaya, Kadir & Aras Bozkurt. 2022. Mobile-assisted language learning (MALL) research trends and patterns through bibliometric analysis: Empowering language learners through ubiquitous educational technologies. *System* 110. 102925.

Kim, Heyoung & Yeonhee Kwon. 2012. Exploring smartphone applications for effective mobile-assisted language learning. *Multimedia-Assisted Language Learning* 15(1). 31–57.

Kling, Rob. 2007. What is social informatics and why does it matter? *The Information Society* 23(4). 205–220.

Kukulska-Hulme, Agnes. 2012. How should the higher education workforce adapt to advancements in technology for teaching and learning? *Internet and Higher Education* 15(4). 247–254.

Kukulska-Hulme, Agnes. 2016. Personalization of language learning through mobile technologies. *Cambridge Papers in ELT*. Cambridge, UK: Cambridge University Press.

Kukulska-Hulme, Agnes. 2019. Mobile language learning. In *High-End Expert Talk Series*, Beijing Foreign Studies University, October 14.

Kukulska-Hulme, Agnes, Helen Lee & Lucy Norris. 2017. Mobile learning revolution: Implications for language pedagogy. In Carol A. Chapelle & Shannon Sauro (eds.), *The handbook of technology and second language teaching and learning*, 217–233. Oxford: Wiley & Sons. Available at: https://oro.open.ac.uk/50366/7/50366.pdf.

Kukulska-Hulme, Agnes, Jorge Arús-Hita & Jesús García Laborda. 2021. Mobile, open and social language learning designs and architectures: Orientating the emerging MOSL4L language learning paradigm toward a better world. *Journal of Universal Computer Science* 27(5). 413–424.

Kukulska-Hulme, Agnes, Lucy Norris & James Donohue. 2015. *Mobile pedagogy for English language teaching: A guide for teachers*. London: British Council.

Levy, Mike & Claire Kennedy. 2005. Learning Italian via mobile SMS. In Agnes Kukulska-Hulme & John Traxler (eds.), *Mobile learning: A handbook for educators and trainers*, 76–83. London: Taylor and Francis.

Li, Fan. 2023. Student and language teacher perceptions of using a WeChat-based MALL program during the COVID-19 pandemic at a Chinese university. *Education Sciences* 13. 236.

Li, Guofang, Zhuo Sun & Youngeun Jee. 2019. The more technology the better? A comparison of teacher-student interaction in high and low technology use elementary EFL classrooms in China. *System* 84. 24–40.
Marton, Ference. 1986. Phenomenography – A research approach to investigating different understandings of reality. *Journal of Thought* 21(3). 28–49.
Meng, Yu & Jianlin Chen. 2021. 基于 App 的外语移动学习方式研究 [A study on mobile learning mode of English language learning based on smart phone applications]. *Journal of Liaoning Normal University (Social Science Edition)* 44(1). 118–124.
Nikolopoulou, Kleopatra, Vasilis Gialamas & Konstantinos Lavidas. 2023. Mobile learning-technology barriers in school education: Teachers' views. *Technology, Pedagogy and Education* 32(1). 29–44.
Read, Timothy & Agnes Kukulska-Hulme. 2015. The role of a mobile app for listening comprehension training in distance learning to sustain student motivation. *Journal of Universal Computer Science* 21(10). 1327–1338.
Stockwell, Glenn. 2010. Using mobile phones for vocabulary activities: Examining the effect of the platform. *Language Learning & Technology* 14(2). 95–110.
Tang, Jinlan & Changhua S. Rich. 2017. Automated writing evaluation in an EFL setting: Lessons from China. *The JALT CALL Journal* 13(2). 117–146.
Tang, Jinlan, Yuming Zhai, Lingxiao Li, Peixin Liu & Deng Hongxun. 2024. Mobile learning for less-commonly taught languages: Design and application. *Journal of China Computer-Assisted Language Learning*. https://doi.org/10.1515/jccall-2024-0006.
Tsai, Pei-Shan & Chin-Chung Tsai. 2019. Pre-service teachers' conceptions of teaching using mobile devices and the quality of technology integration in lesson plans. *British Journal of Educational Technology* 50(2). 614–625.
UNESCO. 2023. Best practices in mobile learning: Case studies. Available at: https://www.unesco.org/en/digital-education/mobile-learning-practices.
Wong, Keshan & Qing Li. 2023. 大学生数字素养与移动语言学习现状的匹配度研究 [A study on the compatibility between college students' digital literacy and their mobile language learning]. *Journal of Chengdu Normal University* 39(4). 98–107.
Xu, Shun & Sha Zhu. 2020. Factors influencing K-12 teachers' intention to adopt mobile devices in teaching. *Computers in the Schools* 37(4). 292–309.
Zhang, Jie & Sunze Yu. 2023. Investigating pedagogical challenges of mobile technology to English teaching. *Interactive Learning Environments* 31(5). 2767–2779.
Zhou, Ying. 2016. "互联网+"背景下地方本科院校大学英语生态课堂构建探索[A study on the ecological college English class in local undergraduate institutions in the "Internet +" era]. *Theory and Practice of Education* 36(12). 51–54.

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