

Expert Views on Mobile Teacher Education Application: A Delphi Approach

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ABSTRACT

In the digital age, the demand for accessible, flexible, and pedagogically sound teacher education has intensified, yet mobile-based solutions tailored specifically for teacher training remain limited. This study proposes a mobile application model for English language teacher education, developed through expert consensus using the Delphi method. Eleven ELT specialists participated in three iterative rounds, beginning with open-ended questions and followed by systematic evaluation of proposed features. The initial analysis yielded 65 potential features, which were refined to 28 essential components through expert agreement. These features were categorized into design-related and content-related elements, emphasizing core language skills (speaking, listening, reading, writing), adaptable content for diverse contexts, and the need for a user-friendly, technically robust interface. Findings offer a validated, pedagogically grounded foundation for developing mobile applications tailored to English language teacher education.

Statement of Publication Ethics

Ethical approval was obtained from Sivas Cumhuriyet University on April 30, 2025, under the reference number E-50704946-050.04-55684.

Conflict of Interest

There is no conflict of interest to declare.

Reference

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Introduction

The worldwide spread of the English language has led to a need for Language Teacher Education (LTE) programs to equip teachers for complex and challenging instructional situations, which require LTE to extend its scope beyond traditional university-based teacher education programs (Jonson & Golombek, 2020). The basic classification of teacher education, which includes content knowledge, pedagogical knowledge, and pedagogical content knowledge, needs the addition of a fourth one, which is technology knowledge, to raise generations that have 21st-century skills. Knowledge construction and technology have been recognized as essential in comprehending the future of teacher education (Ruhalahti, Korhonen, & Rasi, 2017). In recent years, teacher educators have increasingly begun to utilize mobile technologies to support the development of both communicative and pedagogical skills among pre-service teachers.

Mobile learning is defined as “any educational provision where the sole or dominant technologies are handheld or palmtop devices” (Traxler, 2005, p. 262). It is different from other technology-enhanced learning as its focus on mobility of the learner supported by a variety of personal and handheld technologies (Sharples & Spikol, 2017). Since the mid-1990s, mobile education has emerged as a widespread phenomenon, largely due to the numerous benefits that it offers, including increased access to educational activities and expanded learning opportunities (Al-Said, 2023). Despite these advantages, the full potential of m-learning in teacher education has not been realized yet. A clear example of this is the prevalent use of face-to-face microteaching in teacher education, except for the process of the COVID-19 pandemic. When face-to-face microteaching was not possible, educators sought alternatives, including having pre-service teachers record their microteachings with their classmates. However, this demonstrates only a partial use of m-learning in teacher education. According to Burden (2015), m-learning has posed challenges to teacher education but has not brought about a fundamental change in the theoretical background and practices of teacher education. Furthermore, teacher support and training have received limited attention in mobile learning research (Ekanayake & Wishart, 2014). Despite the increasing importance of mobile technologies in teacher education, their integration has been underdeveloped and lacks theoretical grounding (Kearney & Maher, 2013). Thus, this study seeks to contribute to the evolving discourse on m-learning by offering a theoretically grounded exploration of its application in teacher education. By incorporating diverse perspectives from a panel of experts, it aims to propose a Mobile English Language Teacher Education (MELTE) application—an innovation that has not previously been proposed or implemented, either theoretically or practically (to our knowledge). In doing so, the study advances our understanding of how mobile technologies can be purposefully and sustainably integrated into teacher preparation, moving beyond temporary or reactive solutions toward long-term pedagogical transformation.

Literature Review

The massive implementation of Mobile-Assisted Language Learning (MALL) in basically all stages of foreign language learning in the past decades has changed the way information is obtained and processed. It has also altered the way knowledge is acquired and

retained, and how information is communicated. Thus, foreign language learning has seen unprecedented changes due to the implementation of technology into the learning process. There has been much change from the PLATO, which is the beginning of a new era in language learning, to today, where smarter, more flexible, pervasive, ubiquitous learning environments are utilized, which has been a result of introducing mobile devices into our lives. Mobiles have profoundly affected all fields of life, including language learning.

The concept of 'mobility' complicates the understanding of mobile learning. This complexity arises from differing viewpoints on how mobile devices are used: they can either serve as tools for accessing and interacting with digital materials, resources, and communities, or as instruments that allow learners to engage with their environment through personal devices while on the move, immersed in diverse physical contexts (Kukulska-Hulme, 2021). Kukulska-Hulme and Shield (2008) combined the ideas of mobility in learning and technology, defining m-learning as “learning mediated via handheld devices and potentially available anytime, anywhere” (p. 273). As Kukulska-Hulme (2021) further explains, mobile learning (m-learning) can be understood in two ways: either as learning facilitated by mobile devices or as learning that takes place while being physically mobile. In contemporary contexts, m-learning is most commonly interpreted as learning through mobile devices, since the mobility aspect is typically enabled by the devices themselves. Mobile learning can be viewed as an extension of e-learning, facilitated through portable and wireless devices that enable learning anytime and anywhere, based on learners' preferences and convenience (Metruk, 2024). One of the unique advantages of mobile learning lies in its ability to bridge formal and informal learning environments which, for language learners, may be realized through supplementary out-of-classroom practice, access to translation support during communication with target language speakers, and the ability to capture and instantly share difficulties and discoveries that can later be brought into the classroom (UNESCO, 2013)

Building on this foundation, Mobile-Assisted Language Learning (MALL) represents the application of m-learning principles to language education. As Çakmak (2019) emphasizes, MALL mirrors m-learning in that both approaches focus on contextualized learning, flexibility, and the active participation of learners within a learning community (p. 37). In a broader sense, Rahimi and Miri (2014) define MALL as encompassing any language learning activity facilitated through mobile devices. This approach is increasingly recognized as an innovative and engaging way to support language acquisition (Azar & Nasiri, 2014). More recently, Alisoy and Sadiqzade (2024) underscore the potential of MALL to transform language education by enhancing accessibility, promoting learner engagement, and enabling personalized learning experiences.

When the focus shifts from learning to teaching, another term emerges: Mobile-Assisted Language Teaching (MALT). MALT has the potential to enhance both the linguistic and pedagogical competencies of teachers. Moreover, the integration of mobile applications into pedagogical practices enables teachers to plan second language instruction more effectively and to facilitate teaching and learning in real-world contexts (Irudayasamy et al., 2021). To gain a deeper understanding of MALT, Baran (2014) categorizes m-learning

practices in teacher education into two main aspects: teacher training about mobile learning and teacher training with mobile learning. Training about m-learning means preparing pre-service teachers to learn how to effectively integrate mobile devices into their future teaching in schools (Kearney & Maher, 2019), and it includes elements such as developing mobile lesson plans, micro-teaching mobile lessons, and personalized mobilized curriculum (Baran, 2014). The second area is centered around teacher education with m-learning, which focuses on enhancing pre-service teachers' professional learning using mobile devices such as *“the use of these devices to mediate their reflections on/in practice during their professional placements or using the camera on their device to capture evidence of their teaching practices”* (Baran, 2014, p. 137). The features of teacher training with mobile learning may consist of accessing teacher education content anytime, anywhere, reflecting on teaching, customizing the teacher training context, and sharing classroom practice (Baran, 2014). (see Figure 1). Such reflective practices in teacher education align with Schön's (1983) typology of reflection: *reflection-in-action*, which refers to thinking during the act of teaching, *reflection-on-action*, which is retrospective consideration of teaching after it occurs, and *reflection-for-action*, which refers to reflection intended to inform future teaching practices. Mobile technologies support all three types by enabling teachers to document, revisit, and analyze their teaching moments before, during, and after instruction through multimedia tools.

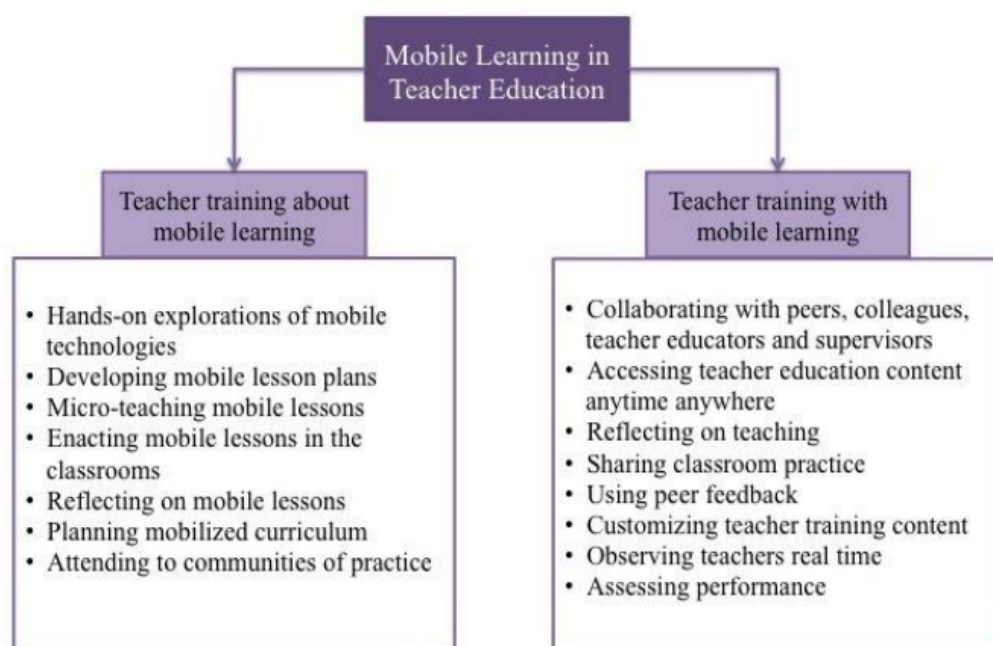


Figure 1. Mobile Learning in Teacher Education (Baran, 2014; p.28)

Existing literature presents some empirical studies regarding both teacher education about and with m-learning in English Language Teaching. Current research on MALL/MALT focuses on how students and teachers adapt to existing technologies, often those that have been implemented on a wide scale (Maliphol, 2023). In most studies, the focus was either on identifying aspects that promote or inhibit mobile learning (ML)

adoption (Moya & Camacho, 2021), participants' perceptions and attitudes toward ML (Gikas & Grant, 2013), or their intention to adopt ML (Buabeng-Andoh, 2021) (as cited in Muchnik-Razanov et al., 2022). Moreover, the focus of previous research can be categorized as pre-service and in-service teachers. As the target of this study is pre-service teachers, previous studies related to them were addressed here.

In MALL's earlier stages, Seppälä and Alamäki (2003) used Short Message Service (SMS) and digital pictures to enhance discussion between supervising lecturers and pre-service teachers. The interviews conducted with the pre-service teachers indicated that mobile learning facilitated the learning process by saving time and providing a supportive learning environment. Similarly, Mobile-Assisted Flipped Classroom provided EFL pre-service teachers with emotional, behavioral, cognitive, social, and emotional engagement (Pasaribu & Wulandari, 2021). The findings of Pegrum, Howitt, and Striepe (2013) similarly revealed that iPads contributed to the teachers by fostering an understanding of content and pedagogy, facilitating connectivity, and staying organized. However, the study also highlighted several challenges, such as device limitations, time constraints, and attitudinal barriers. Ruhalahti et al. (2016) used 'Dialogical Authentic Netlearning Activity' (DIANA), which was a mobile learning environment, to investigate pre-service teachers' reflections on authentic and dialogical knowledge construction. It was concluded that the pre-service teachers had difficulty in conceptualization of authenticity and deep-oriented learning through dialogical actions, and more scaffolding was required for pre-service teachers.

Burden and Kearney (2018) proposed a mobile toolkit for teacher educators based on the mobile learning framework, which emphasizes personalization, collaboration, and authenticity (Kearney et al., 2012). The proposed toolkit encompassed online courses, embedded videos, teacher and student surveys, video scenarios, and app evaluation rubrics. The toolkit is an outcome of an international project including a variety of scholars. While the toolkit proved beneficial, it did not fully cover aspects such as motivation, content accuracy, and technical considerations as stated on the app homepage. Similarly, Kuru Gönen and Zeybek (2022) proposed a design for a training model on Multimodal Mobile-Assisted Language Learning (M-MALL) and implemented it for EFL pre-service teachers (PSTs) in Türkiye. They found that the participants shared positive reflections, reporting improvements in teaching skills, a broader perspective on integrating mobile technology, and staying updated regarding recent technologies as educators.

While MALL has gained considerable scholarly attention, its application in English language teacher education remains underexplored. Most studies focus on pre-service and in-service teachers' perceptions of mobile technology use, often framing mobile learning as something to be learned about rather than a medium to be actively used for teacher education. With the point of Baran (2014), who categorizes mobile learning in teacher education as training about and with mobile learning, it seems that most of the research (e.g. Aratusa et al., 2022; Bonasir & Phern, 2024; Annamalai, 2025; Bülbül & Özelçi, 2025) is relevant to training about m-learning. Pre-service teachers who are still learners state their opinions/beliefs/perceptions on learning and teaching with m-learning (e.g. Şad & Göktaş, 2014; Öz, 2015; Hişmanoğlu, Ersan & Çolak, 2017; Aygül, 2019; Nariyati et al., 2020;

Hafour, 2022; Zain & Bowles, 2024). However, research that addresses teacher education with mobile learning tools, especially through the co-design or proposal of tailored mobile applications, is scarce. Furthermore, current studies tend to adapt to existing technologies rather than propose novel, needs-driven designs created through expert collaboration.

Research Aim and Research Questions

Teacher education with m-learning, which has received less attention, is the subject of this study. By incorporating diverse perspectives from various experts, the proposed Mobile English Language Teacher Education (MELTE) model will be enriched by ensuring a collective agreement, contributing significantly to teacher education in this digital age. This contrasts with existing MALL/MALT research that often focuses on adapting to existing, widely implemented technologies, rather than proactively designing tools to address specific teacher education needs with the aim of addressing this gap in the literature and contributing to the field, this study aimed to propose a mobile application model specifically designed for English language teacher education, informed by expert consensus through the Delphi method. The research question of the study is as follows:

-What are the key components of a mobile application designed for English language teacher education?

Methodology

Research Design

The study adopted the Delphi Method as it aimed to propose a mobile teacher education model by getting expert opinion. Helmer (1977) describes the Delphi technique as an effective communication tool for experts, aiding in the development of collective judgment. The Delphi technique enables remote group communication while ensuring participant anonymity and fostering independent opinions (Cohen et al., 2007; Jahangiri & Rajab, 2014; Koçdar & Aydın, 2012). This anonymity reduces the influence of dominant voices and encourages the expression of independent, unbiased views. Additionally, the method supports iterative rounds of feedback, combining both qualitative insights and quantitative assessments. Rowe and Wright (2011) emphasize that integrating both quantitative and qualitative methods enhances the utility and credibility of the results. They argue that the Delphi technique should be viewed as a structured sequence of processes leading to a well-informed outcome. In line with this perspective, recent Delphi research has increasingly incorporated mixed-method approaches (Suominen et al., 2022), reflecting a growing recognition of the value of methodological integration in capturing both depth and consensus. Thus, this study employed both qualitative and quantitative data to ensure that expert perspectives were not limited to numerical ratings alone, while also enhancing the credibility of the findings through the inclusion of measurable, quantifiable data. It collects both qualitative and quantitative data, allowing for in-depth analysis and consensus measurement (Uztosun, 2018). Given these strengths, the Delphi method was well-suited for the aims of this study, providing a rigorous framework for the co-construction of a contextually relevant and theoretically grounded mobile teacher education application.

Publication Ethics

In this study, ethical considerations were carefully addressed following the COPE (Committee on Publication Ethics) guidelines by getting informed consent from the participants. Moreover, as the Delphi technique requires, the panelists were anonymized and did not know any information about the other panelists. Ethical approval was obtained from the university where the researcher worked.

Participants

The recommended number of Delphi participants for an expert panel varies across studies. For instance, Anderson and Kanuka (2003) offer a range of 10 to 30 participants, while Delbecq, Van de Ven, and Gustafson (1975) offer a smaller range of 10 to 15 participants. In line with this, the participants of this study comprised 11 panelists selected through convenience sampling, which refers to the data collection process in which participants are selected from a research population that is readily accessible to the researcher (Rahi, 2017). Convenience sampling offers several advantages, including reduced time, cost, and effort in participant selection, while also allowing easy access to rich qualitative data (Golzar, Noor & Tajik, 2022). As this study employed the Delphi technique, which involved multiple rounds of data collection, convenience sampling was used to ensure that experts could be reached as needed at different stages of the process.

Table 1. Profile of the participants

Participant	Gender	Institution/ Department	Field of Graduation	Work experience (years)	Title	Latest degree
P1	Female	University/ English Language Teaching	English Language Teaching	11-15	Assist. Prof. Dr	PhD
P2	Female	University/ English Language Teaching	English Language Teaching	6-10	Research Assistant	MA
P3	Male	University/ English Language Teaching	English Language Teaching	15+	Assist. Prof.	PhD
P4	Male	University/ English Language Teaching	English Language and Literature	15+	Assist. Prof. Dr.	PhD
P5	Male	University/ English Language Teaching	English Language Teaching	1-5	Research Assistant	MA
P6	Male	Ministry of National Education	English Language Teaching	15+	English Teacher	BA
P7	Male	University/ English Language Teaching	English Language Teaching	11-15	Assoc. Prof. Dr.	PhD
P8	Female	University/Translation & Interpreting	English Language Teaching	15+	Assist. Prof. Dr.	PhD
P9	Male	Ministry of National Education	English Language Teaching	15+	English Teacher	BA
P10	Male	University/ School of Foreign Languages	Curriculum & Instruction	6-10	Instructor	PhD
P11	Female	University/ English Language Teaching	English Language Teaching	11-15	Assist. Prof. Dr.	PhD

Data Collection and Analysis

The Delphi technique typically involves two or three rounds in which panelists are consulted to gather their opinions (see Figure 2). After selecting the participants, the first round of this study involved administering the initial questionnaire, which was formed based on the research question and included a single general open-ended question designed to allow the experts to express their opinions without limitations. The open-ended question, “What type of features or content should be included in a mobile app for English language teacher education? Responses addressing technical, linguistic, or pedagogical aspects were welcome.” was posed to the participants via a Google Form: The qualitative data collected from the responses underwent conventional content analysis, through the development of a coding system. This system involved systematically examining the data to identify regularities, patterns, and emerging topics, which were then represented using descriptive words and phrases (Bogdan & Biklen, 2007). The analysis process involved several key stages. First, all responses from the open-ended questionnaire were carefully read multiple times to achieve a holistic understanding of the participants’ perspectives. Initial codes were then generated by identifying meaningful units of text that reflect distinct ideas or insights related to the research questions. These codes were compared and grouped based on conceptual similarities and subsequently organized into broader themes, which were content-related items and design-related items. Based on the findings of this initial content analysis, a structured questionnaire was developed, comprising 65 items distributed across these two main categories. This questionnaire was administered to the participants one month after the first round to gather quantitative insights.

In the second round of analysis, the responses were evaluated using statistical measures, including mean, median, and standard deviation (SD). Regarding quantitative analysis, the median was used to measure response trends, as it is less affected by outliers and therefore offers a more accurate representation of group consensus (Mitchell, 1991). To ensure strong agreement among the participants, the criteria of Median = 7 and $SD \leq 1.0$ were applied: following approaches by similar Delphi studies (e. g. Boulkedid et al., 2011; Uztosun, 2018). The items meeting these thresholds were considered highly endorsed and prioritized for inclusion in the final set of recommendations for the app’s development.

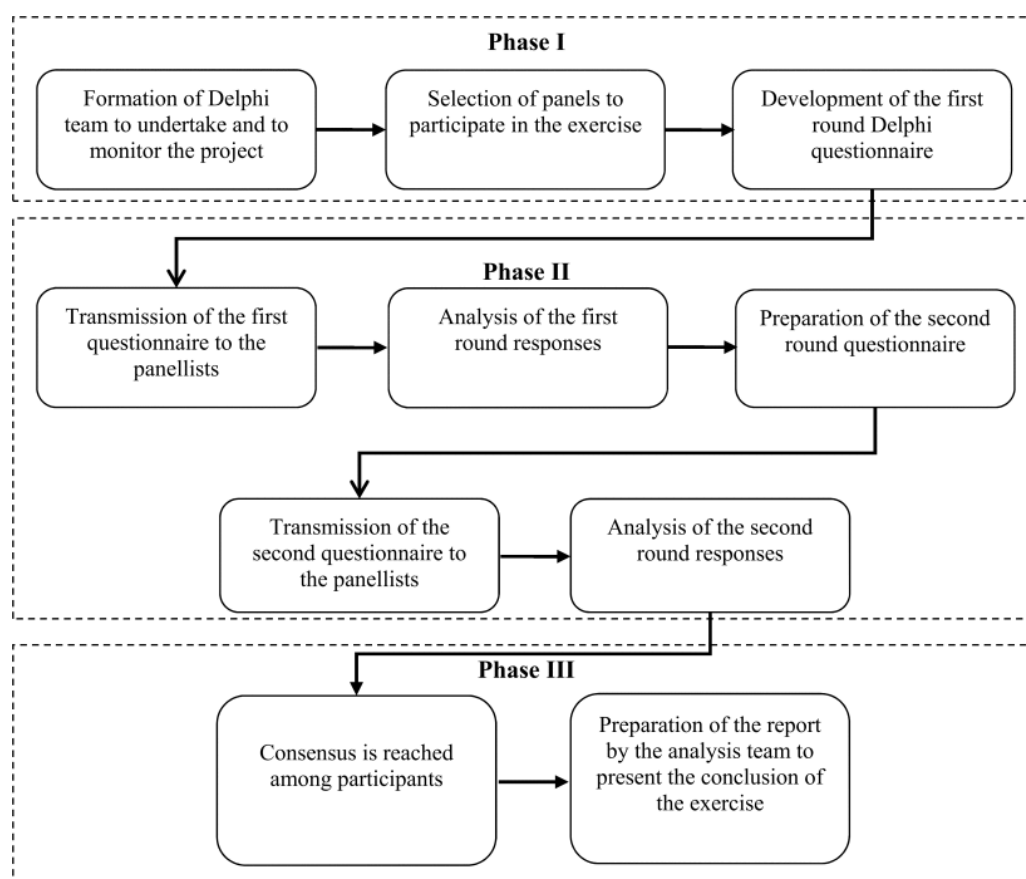


Figure 2. Steps of two round Delphi method (as cited in Saffie et al., 2016)

Results

As stated, the participants were presented with an open-ended question via Google Form: “What type of features or content should be included in a mobile app for English language teacher education?” The qualitative data collected from their responses underwent content analysis, which identified two primary categories: (1) content-related items, referring to the topics and subject areas to be included in the application, and (2) design-related items, encompassing the application's interface, functionality, and overall user experience.

Design of the Application

The design part included 34 items regarding which features should be included in mobile teacher education application (See Table 2).

Table 2. Design-related items

Items	N	Min.	Max	Median	SD
The Mobile Teacher Education App should...					
Ensure a good user interface.	11	6	7	7	,467
Incorporate visuals frequently within the app.	11	3	7	6	1,191
Use eye-friendly colors that do not strain the eyes.	11	6	7	7	,522

Support Technological Pedagogical Content Knowledge (TPACK) development.	11	6	7	7	,505
Allow content adjustability based on users' proficiency levels.	11	6	7	7	,467
Address the needs of diverse user levels.	11	3	7	7	1,214
Minimize excessive internet consumption.	11	2	7	7	1,578
Introduce a competitive element, like competitions and score collection, within the app.	11	1	7	6	1,940
Promote interactivity.	11	6	7	7	,467
Implement a chat feature for user interaction.	11	4	7	6	,874
Utilize animation of learning environment through short videos.	11	2	7	6	1,679
Ensure the app is fully functional.	11	4	7	7	,934
Cover a wide range of diversity in content.	11	3	7	6	1,168
Prioritize practicality in the app's design.	11	5	7	7	,688
Conduct a preliminary classification based on teachers' characteristics (e.g., age, experience, field knowledge, and volunteerism).	11	4	7	6	1,079
Avoid a one-size-fits-all approach.	11	6	7	7	,505
Include users' self-assessments within the app.	11	3	7	7	1,206
Enable users to provide feedback on the system.	11	6	7	7	,467
Offer options to accommodate different education levels and purposes across various institutions.	11	3	7	6	1,375
Provide standardized training for teachers who meet specific criteria.	11	5	7	6	,831
Collaborate with the institutions where teachers work to ensure technical infrastructure.	11	4	7	6	1,183
Stay updated with the latest technological trends and developments.	11	4	7	7	,934
Incorporate the ability to create course curricula.	11	6	7	6	,505
Address the specific needs of users.	11	4	7	7	,934
Ensure a robust technical infrastructure.	11	6	7	7	,522
Assess users' knowledge and skills.	11	6	7	6	,522
Build teachers' belief that they will benefit from the app.	11	5	7	7	,688
Ensure teachers believe that the app will meet their expectations.	11	5	7	7	,688
Conduct a pilot application before full-scale use to identify any deficiencies.	11	3	7	7	1,214
Enable users to track their own performance.	11	3	7	7	1,214
Include fun games for user engagement.	11	4	7	7	1,036
Facilitate collaboration among student teachers.	11	6	7	6	,522
Promote information sharing within the app.	11	2	7	6	1,471
Include alternative measurement activities.	11	4	7	6	,905

Table 2 indicates that Mobile Teacher Education App highlights key features essential for maximizing functionality, personalization/adaptivity, engagement, innovation, usability and pedagogical support. Users strongly emphasize the need for a well-designed interface, eye-friendly colors, and a fully functional system with a robust technical infrastructure.

Based on the criterion of a mean score of 7 and a standard deviation (SD) below 1.00, several items in the table demonstrate a strong consensus among the participants regarding their importance in a Mobile Teacher Education App. Specifically, the items *"Ensure a good user interface," "Use eye-friendly colors that do not strain the eyes," "Support Technological Pedagogical Content Knowledge (TPACK) development," "Allow content adjustability based on users' proficiency levels," "Promote interactivity," "Avoid a one-size-fits-all approach," "Enable users to provide feedback on the system," "Address the specific needs of users,"* and *"Ensure a robust technical infrastructure"* all meet this criterion. These items received the highest possible average rating (mean = 7.00) with low variability in responses (SD < 1.00), indicating a unified and strong agreement among participants that these features are essential.

The low-rated items, characterized by lower minimum scores and higher standard deviations, highlight divergent user opinions on certain features in the Mobile Teacher Education App. These include frequent use of visuals, chat, minimizing excessive internet consumption, assessing users' knowledge and skills, gamification, creation of course curricula, animation-based learning, information sharing, fun games, and learning progress tracking. While some experts find these features valuable, others do not consider them essential for effective teacher training. Although all the median scores are above 6, these items reflect more variability in the participants' opinions.

Based on the criteria of "Median = 7" and "SD ≤ 1.0", 14 items demonstrated strong agreement among the participants. For ease of interpretation, the items on which the strongest agreement were found are presented below, grouped under some dimensions (see Figure 3).

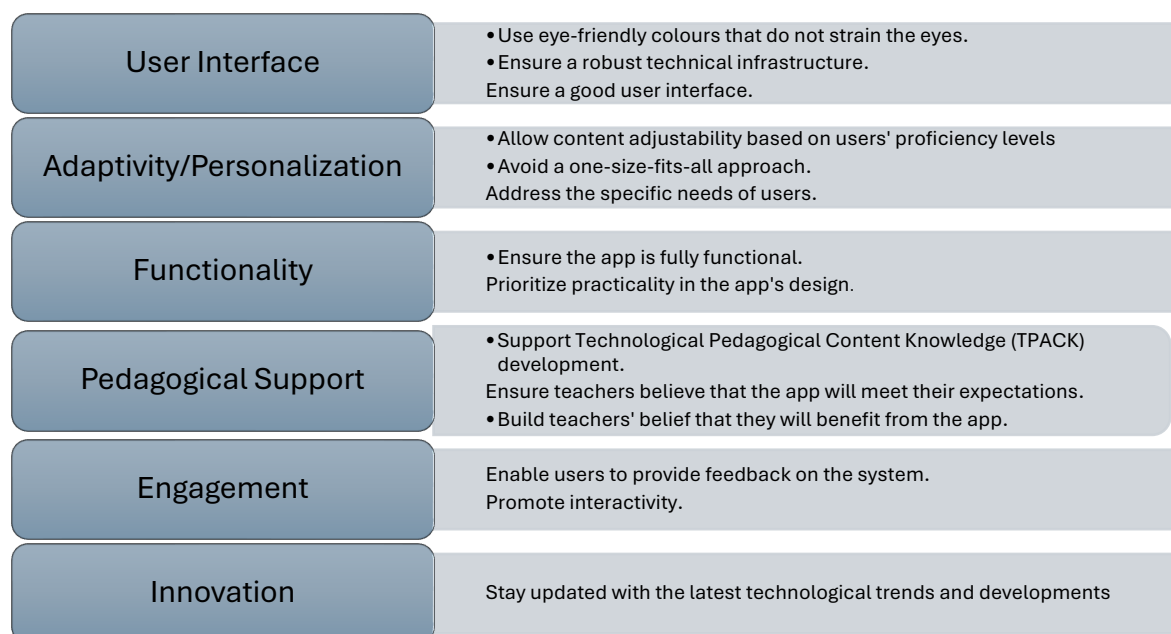


Figure 3. Design of the application

Content of the Application

The second part of the proposed application was related to the content/topics that the app should include. This part included 31 items which were presented below.

Table 3. Content-related items

Items	N	Min	Max	Median	SD
The Mobile Teacher Education App should cover the topics of ...					
Teaching of the four language skills (speaking, listening, writing, reading).	11	6	7	7	,405
Content adaptable to various learning environments (online, traditional classrooms, diverse levels of learners).	11	6	7	7	,467
Strategies for teaching students of different age groups and with varying needs.	11	6	7	7	,467
Videos/ animations/content related to classroom language and basic sentence patterns (e.g. you have homework, the bell rang).	11	4	7	7	1,206
Guidance on conducting basic research related to language teaching.	11	4	7	6	1,095
Measurement and evaluation tools and techniques.	11	6	7	7	,467
Learner types.	11	5	7	7	,688
Diverse teaching methods, techniques, and materials ideas.	11	6	7	7	,505
Distance learning	11	5	7	7	,674
Assessment in distance learning	11	5	7	7	,809
Content preparation	11	6	7	7	,522
Lesson planning techniques.	11	5	7	7	,905
Strategies for motivating students	11	6	7	7	,467
Students' engagement	11	6	7	7	,467
Techniques for managing training processes in platforms like Zoom and Teams.	11	3	7	6	1,221
Curriculum design	11	2	7	6	1,446
Personalized education	11	1	7	7	1,779
Program evaluation	11	2	7	6	1,555
Understanding and addressing individual differences in the teaching process.	11	6	7	7	,522
Classroom management techniques.	11	4	7	7	1,027
Public speaking	11	2	7	6	1,508
Teaching pronunciation, vocabulary, and grammar.	11	5	7	6	,674
Knowledge of curriculum objectives and outcomes.	11	2	7	6	1,489
Awareness of teacher profession laws.	11	1	7	5	1,804
Understanding of rights and responsibilities in the teaching profession.	11	4	7	6	1,136
Managing relationships with superiors and subordinates.	11	2	7	6	1,572
Writing on classroom notebook.	11	4	7	6	1,128
Classroom management	11	2	7	6	1,601
Communication with students.	11	6	7	7	,467
Cultural characteristics of the target language.	11	3	7	7	1,414
Users' positive and negative experiences from previous training programs.	11	1	7	6	1,804

Table 3 demonstrates that the analysis of user preferences for topics in the Mobile Teacher Education App highlights key areas that should be prioritized to maximize its effectiveness. There is strong consensus on the importance of teaching core language skills—speaking, listening, writing, and reading—along with ensuring content adaptability for various learning contexts, including online platforms, traditional classrooms, and diverse learner groups. Applying the criterion of mean = 7 and standard deviation (SD) < 1.00 to determine strong consensus, several content areas emerge as universally endorsed by participants for inclusion in the Mobile Teacher Education App. These include: *"Teaching of the four language skills (speaking, listening, writing, reading)," "Content adaptable to various learning environments," "Strategies for teaching students of different age groups and with varying needs," "Measurement and evaluation tools and techniques," "Diverse teaching methods, techniques, and materials ideas," "Content preparation," "Strategies for motivating students," "Students' engagement," "Understanding and addressing individual differences in the teaching process," and "Communication with students."* All these items received the highest possible median rating (7) with low variability (SD < 1.00), signaling a clear and consistent agreement on their importance.

Although all items received agreement scores above the median value of 5, this study focused on those with the strongest consensus. The item with the lowest median was *"Awareness of teacher profession laws,"* indicating that the participants placed relatively less importance on this topic. Some of the items with lower median scores (M = 6) or higher standard deviations included *"Curriculum design," "Program evaluation," "Teaching pronunciation, grammar, and vocabulary," "Classroom management," "Guidance on conducting basic research," "Managing relationships with superiors and subordinates,"* and *"Public speaking."* (see Table 3). These results suggest that while still considered relevant, these areas were perceived as less critical compared to the others with stronger agreement.

Based on the criteria of "Median = 7" and "SD ≤ 1.0", 14 items demonstrated strong agreement among the participants. For ease of interpretation, the items on which the strongest agreement were found are presented below, grouped under some dimensions (see Figure 4). These dimensions included planning, which refers to lesson preparation and the organization of teaching content taught during the lesson; individualized learning, which involves recognizing learners' individual differences and adapting instruction; accordingly, and teaching methodology, which encompasses English Language Teaching (ELT) approaches, assessment practices, and strategies for fostering learner engagement and motivation.

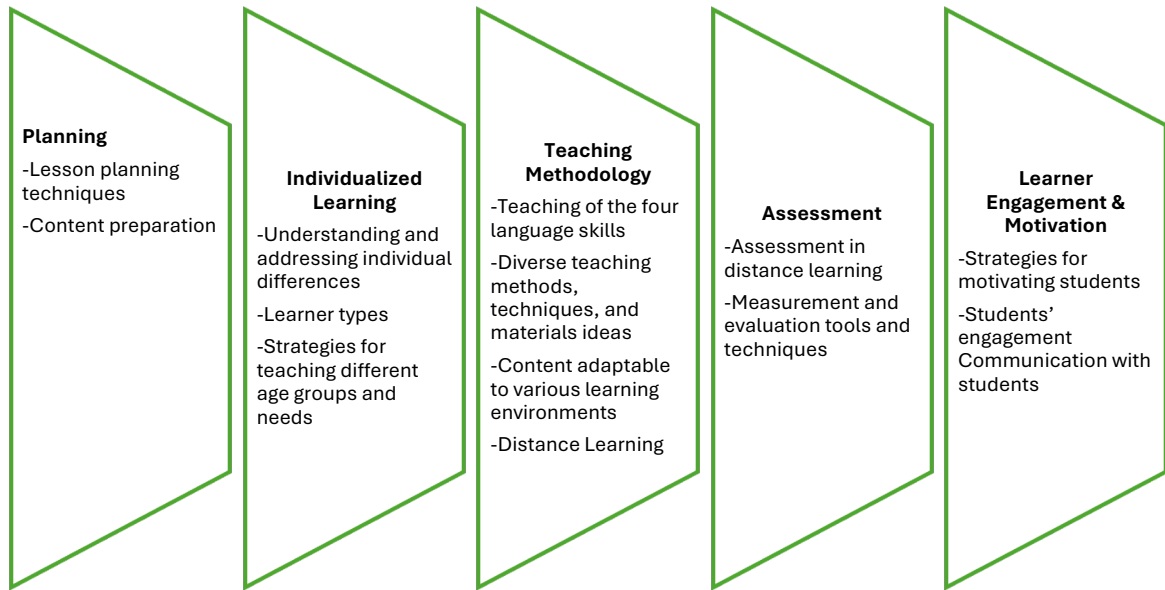


Figure 4. Content of the Application

Discussion

The present study aimed to propose a mobile application model specifically designed for English language teacher education, drawing on expert insights collected through the Delphi method. The findings revealed a strong consensus among experts on comprehensive language skill development, the inclusion of flexible and context-sensitive content, and the importance of a user-friendly, technically robust interface. These components were identified as crucial for creating a sustainable and effective mobile-assisted teacher education tool. To identify an application as effective, both its content and design features must be of high quality. This study supports that view, revealing that the participants placed equal emphasis on the quality of both the instructional content and the app's design. Well-structured, relevant content and user-friendly design elements were seen as essential for a successful mobile learning experience. These findings highlight the importance of a balanced focus on both pedagogical value and technical usability in the development of mobile learning tools. Dahri et al. (2024) also highlight that the content quality, system quality, prior experience, and mobile self-efficacy significantly contribute to task-technology fit, thereby enhancing teacher engagement and improving learning outcomes.

The analysis of user feedback on the Mobile Teacher Education App highlights key features essential for maximizing functionality, personalization/adaptivity, engagement, innovation, usability and pedagogical support. These elements are crucial for ensuring a smooth and accessible user experience. The findings align with previous research (Kumar & Mohite, 2016; Ishaq et al., 2002) underscoring the importance of user-friendly mobile learning environments. Usability testing plays a critical role in assessing the functionality of mobile apps, ensuring that mobile learning remains accessible, practical, and secure (Kumar & Mohite, 2016). Challenges such as low efficiency, limited screen size, reduced bandwidth,

poor display quality, storage constraints, diverse file formats, and compatibility with multiple operating systems can hinder m-learning accessibility (Ishaq et al., 2020). The strong consensus among the participants on the significance of a good user interface, eye-friendly colors, and a fully functional system reinforces earlier findings (Kumar & Mohite, 2016; Ishaq et al, 2002), affirming that usability is a foundational requirement for effective mobile teacher training.

From a pedagogical perspective, the app must incorporate Technological Pedagogical Content Knowledge (TPACK) principles to support teacher development. Users highly value content adjustability based on proficiency levels, avoiding a one-size-fits-all approach. Features such as interactivity and collaboration are also considered essential. Mobile applications have clearly introduced new and enriching dimensions to collaborative knowledge construction (Rulahati et al., 2017). These findings are in parallel with Kearney and Maher's (2019) Mobile Pedagogical framework which identifies authenticity, personalization, and collaboration as the main features of mobile learnings

There are diverse answers on some aspects such as information sharing, learning progress tracking, and gamification. Research offers conflicting perspectives—Hamari et al. (2014) highlight gamification's potential to enhance motivation, while Dichev and Dicheva (2017) caution that its long-term benefits remain uncertain. Similarly, the inclusion of animations and video-based learning received mixed feedback—some experts found them helpful, while the others preferred text-based content or worried about bandwidth. Offering multiple formats, such as videos, text summaries, and interactive graphics, could address this variability. Similarly, institutional collaboration and standardized teacher training had moderate but varied support. While some experts value institutional backing, the others see it as bureaucratic. Making collaboration optional and focusing on flexible training could balance these concerns. Alternative assessments also divided opinions, suggesting the need for customizable evaluation methods. Overall, these findings highlight the importance of flexibility, allowing users to personalize their learning experience rather than adhering to a one-size-fits-all approach.

The content-related items revealed the importance of teaching four skills, teaching methodology, and lesson planning. These elements are widely recognized as essential components of effective teacher training, as they directly contribute to instructional quality and classroom management. In this vein, Richards (2010) emphasizes that foundational teacher knowledge should include language proficiency, pedagogical content knowledge, and contextual adaptability, all of which align with the topics users prioritize. The study also reveals a strong interest in culturally responsive teaching, effective teacher-student communication, and understanding individual differences. These topics align with contemporary educational trends emphasizing inclusivity and personalized learning approaches, which aim to address diverse learner needs, promote equity, and enhance student engagement through tailored instruction (UNESCO, 2017; OECD, 2018). The other topics, such as classroom language, learner types, and teaching methodologies, received high ratings but exhibited slightly more variation in responses. This suggests that while these areas are considered important, users may have differing expectations regarding their depth

and implementation within the app. Additionally, topics related to distance learning, digital assessment, and strategies for student motivation were consistently rated as significant. This reflects the increasing importance of online and hybrid education, reinforcing the need for mobile learning solutions to support modern teaching environments effectively.

Conversely, professional and administrative topics, such as curriculum design, program evaluation, public speaking, awareness of teacher laws, and managing professional relationships, showed variability in user ratings. The variability in responses suggests that while these topics are valuable for some users, they may not be universally applicable and should be included as optional modules rather than core content. The divergence in opinions on curriculum design and program development suggests that while some educators may benefit from training in these areas, others may find them less relevant to their immediate teaching needs. Furthermore, since the Ministry of National Education of Türkiye is responsible for developing the curriculum while teachers primarily implement it rather than designing it themselves, differences in expert opinions on its necessity may arise. However, Nation and Macalister (2010) explain that teachers must develop a strong understanding of curriculum design, as they constantly make crucial decisions in every lesson—determining the importance of content, selecting effective presentation methods, and deciding what to assess—highlighting that curriculum planning is not solely the responsibility of full-time designers but an essential skill for effective teaching.

Topics related to teacher rights and legal frameworks received some of the widest variations in the responses. This may be due to the fact that legal and institutional policies differ significantly across regions, making it challenging to design a universally relevant module. While some educators may seek guidance on legal issues, others may view them as secondary to pedagogical concerns. Instead of making this a core component, the app could provide legal resources as an optional reference guide tailored to different educational contexts.

The study's findings suggest that flexibility is key in designing an effective Mobile Teacher Education App. While core pedagogical topics should remain central, other subjects, especially those related to administrative tasks, legal aspects, and leadership skills, should be optional to accommodate diverse professional needs. Incorporating real-world case studies and interactive learning experiences could also help users to see the practical applications of these topics, making them more engaging and useful. By offering a customizable learning experience, the app can ensure that all educators, regardless of their backgrounds and teaching contexts, can find relevant and meaningful content.

In today's world, where education is increasingly accessible through mobile technologies, enhancing teacher education via mobile platforms offers significant opportunities. The COVID-19 pandemic has accelerated the shift toward technology-based education and revealed the urgency of having flexible, accessible, and scalable educational solutions. This shift has also underscored that mobile learning is not only an option but, at times, a necessity. Therefore, it is essential that teacher educators not only teach the concept of mobile learning but also integrate it into their own instructional practices.

A mobile teacher education app can offer teacher candidates the flexibility to engage with pedagogical content at their own pace, independent of time and place, thereby fostering learner autonomy and self-regulation. Additionally, by promoting interactivity, such an app can create a space for teacher candidates from diverse regions and backgrounds to connect, collaborate, and share experiences—contributing to a richer and more global learning environment.

It is, however, undeniable that technology cannot replace the irreplaceable role of teachers and teacher educators. Their guidance, mentorship, and professional judgment remain fundamental to the teacher development process. Thus, the intention is not for mobile apps to replace teacher educators, but rather to serve as supplementary tools that enhance the learning experience, support independent study, and extend the reach of teacher education programs beyond traditional classroom settings.

Conclusion

This study aimed to propose a mobile application for English language teacher education through expert opinions. It offers valuable insights into developing effective mobile teacher education programs. The findings emphasize prioritizing core pedagogical content such as language teaching skills, classroom management, and student engagement strategies, while offering administrative tasks, legal knowledge, and curriculum planning as optional modules. Furthermore, the variability in responses regarding topics like public speaking, cultural awareness, and digital tools underscores the need for flexible, customizable app designs that allow teachers to personalize their learning experience. This aligns with research on adaptive mobile learning, highlighting personalization and accessibility as crucial for success (e.g. Louhab et al., 2018; Gumbheer et al., 2022). Future app development should focus on interactive, adaptable, and modular learning, empowering teachers to concentrate on relevant professional development content while accessing additional resources as needed. Balancing structured learning with personalized choices, including customizable features and offline accessibility, is key to creating a comprehensive and adaptable mobile teacher training tool that caters to diverse educator needs and evolving teaching contexts.

While this study offers valuable preliminary insights into mobile teacher education app development, its findings should be interpreted within the context of certain limitations. The small sample size of 11 experts, all from Türkiye, restricts the generalizability of the results. Future research employing a larger and more diverse Delphi panel, encompassing experts from various educational contexts and cultural backgrounds, is crucial for obtaining a broader understanding of needs and preferences. Additionally, this study focused primarily on content and feature prioritization. Further investigation is needed to explore practical implementation challenges, such as app usability testing with teachers, evaluating the effectiveness of different interactive learning strategies within the app, and determining optimal content delivery methods for varying internet access levels. Longitudinal studies assessing the long-term impact of mobile teacher education apps on teacher practices and student outcomes are also essential. Finally, research exploring the integration of these apps

with existing professional development programs and school infrastructures would be beneficial for maximizing their impact and sustainability.

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