Designing a TEFL Mobile Application for EFL Teachers: An Empirical Study

BY

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Abstract

This paper provides a description of designing the *KFS TEFL* mobile application that provides a new alternative learning material for EFL teachers. The researcher followed the ADDIE Model for instructional design in producing the application. Before designing the application, a semi-structured online need analysis questionnaire was given to 124 participants with diverse nationalities and academic backgrounds to identify the necessity for developing university TEFL courses. Moreover, the most needed topics to be addressed in the application were selected. The data collected by the need analysis questionnaire were analyzed and used as a basis for designing the application. The application is a comprehensive course that includes six main topics covered with varied material: written explanations, video lectures, quizzes and reference books. The researcher employed three programs for designing the application; namely: Microsoft PowerPoint 2010, iSpring Suite Version 9.3.2 and Website 2 APK Builder Version 2.2. Designing and producing such applications meet the increased demands on online learning after COVID-19. In addition, authentic mobile applications can be published on Google Play to reach a huge audience and be financially profitable for their authors. An evaluation questionnaire was administered to a sample of twenty-seven participants who used the application for six weeks.

*Keywords***:** Mobile Learning (ML)- TEFL curriculum design- educational apps, teachers' professional development.

تصميم تطبيق جوال لتدريس اللغة الإنجليزية كلغة أجنبية للطلاب المعلمين: دراسة إمبريقية

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مُستخلَص

نقدم هذه الدراسة وصفًا لتصميم تطبيق KFS TEFL للجوال، الذي يوفر مادة تعليمية بديلة حديثة لمعلمي اللغة الإنجليزية كلغة أجنبية. اتبعت الباحثة نموذج ADDIE للتصميم التعليمي في إنتاج التطبيق. قبل تصميم التطبيق، تم تقديم استبيان عبر الإنترنت لتحليل الاحتياجات شارك فيه ١٢٤ فرد من جنسيات   و خلفيات أكاديمية متنوعة، و ذلك لتحديد ضرورة تطوير مقررات تدريس اللغة الإنجليزية كلغة أجنبية بالجامعة. علاوة على ذلك، فقد تم اختيار أهم الموضوعات التي يجب تناولها في التطبيق. قامت الباحثة بتحليل البيانات التي تم جمعها بواسطة استبيان تحليل الاحتياجات و إستخدمتها كأساس لتصميم التطبيق.   و التطبيق عبارة عن مقرر شامل؛ يتضمن ستة مواضيع رئيسية تم عرضها بوسائل متنوعة: شروحات مكتوبة، و محاضرات فيديو، و إختبارات إلكترونية،   و مراجع. كما وظفت الباحثة ثلاثة برامج لتصميم التطبيق و هي: Microsoft PowerPoint 2010 و iSpring Suite الإصدار ٩.٣.٢ و Website 2 APK Builder الإصدار ٢.٢. و يلبي تصميم و إنتاج مثل هذه التطبيقات الطلبات المتزايدة على التعلم عبر الإنترنت بعد COVID-19. بالإضافة إلى ذلك، يمكن نشر تطبيقات الهاتف المحمول على Google Play للوصول إلى جمهور كبير وتحقيق أرباح مالية لمؤلفيها. كما تم إجراء استبيان تقييم لعينة من سبعة وعشرين مشاركًا استخدموا التطبيق لمدة ستة أسابيع.

الكلمات المفتاحية : التعلم عبر الجوال (ML) – تصميم مناهج تدريس اللغة الإنجليزية كلغة أجنبية – التطبيقات التعليمية – التطوير المهني للمعلمين.

The educational consequences resulted from the global lockdown imposed by COVID-19 pandemic since March 2020 up to the present necessitate revolutionizing all components of the educational process. General trends advocate online learning solutions as safe, effective and reliable alternatives to face-to-face traditional education. Many individual and institutional efforts were exerted to present adequate learning material and establish environments to fulfill learners' needs. One of the available solutions is Mobile Learning (ML).

Defining ML underwent several phases. In an early phase, the focus of ML was on the used technology itself of how to provide the educational content through PDAs and smartphones. A subsequent phase directed the focus on the mobility of learning. Consequently, ML was defined as "*any learning that happens when the learner is not in a fixed place.*" (Driscoll & Barneveld, 2015: 1). The latest phase interlaced ML with acquisition and productivity. Therefore, ML has been defined as an activity through which persons learn, produce or interact with information using mobile phones.

ML is not confined to dealing with phone sets only; rather, it is believed to focus on the experiences and opportunities offered by the great technological leaps to education. It is mainly based on the concept of dissemination. ML also has to do with constant adaptation to the latest advances of mobile technology (McQuiggan et al., 2015).

Operationally, the researcher defines ML as a form of knowledge intake that leads to flexible and endless opportunities for interaction through a mobile device. It may be noteworthy to assert that mobile in this case is a mere medium rather than a final target.

Mobile applications in the field of language teaching and learning boost obviously and are likely to attain more increase and popularity in the coming decades. Furthermore, English language teachers make use of mobile technologies in enhancing language teaching both inside and outside formal settings (Irudayasamy, Uba & Hankins, 2021).

Learning through mobile devices is preferred to learning on computers and laptops. The logic behind that is the vast availability of mobiles among students that makes ML ubiquitous regardless of the factors of age and social status. Unlike computers and laptops that need some sort of pre-planning for their usage, mobiles do not require such procedures as booking a school lab or asking students to bring their sets

to classrooms. Naturally, most students carry their mobiles wherever they are (Wilden, 2017).

Nonetheless, opponents to ML have their reasonable reasons as well. They express their fear about such defects as cyberbullying, distraction and 'stranger-danger'. These reasons made some countries – like France – ban the existence and usage of mobiles inside classrooms altogether. Other countries – i. e. Australia – provided guidelines to minimize mobile usage at school as an introduction to a total ban (Kearney, Burden & Schuck, 2020).

Many recent studies handled the effect of ML on English language learning. In the Arab context, Abdel Latif (2021) made a longitudinal study in which he examined the Arab Gulf EFL student teachers' immediate and long-term responses to corpus literacy instruction. He taught a corpus literacy component in the context of a computer-assisted language learning course. Then, he collected data about participants' views on the instruction they received and their own expected future uses of corpora in language learning, teaching and research. After two years, nineteen persons from the participants took a follow-up questionnaire that probed into their beliefs about corpus literacy integration and their multiple uses of corpora. Findings revealed positive immediate and long-term perceptions of corpus literacy instruction. However, corpus instruction did not lead to all the desired changes in student teachers' long-term uses of online corpora as a linguistic and pedagogical resource. Moreover, their attitudes towards doing corpus-based TESOL research were not highly positive. In conclusion, promising developments in language pedagogy and research were expected to be attained due to corpus literacy integration.

In the same year, Fang, Yeh, Luo and Chen (2021) studied the challenges of limited language proficiency. They provided necessary feedback via a task-based language teaching mobile-supported application. Sixty-six EFL university participants took part in a three-week experiment. They were assigned to two groups: an experimental group and a control one. An English achievement test of vocabulary, grammar, and conversation comprehension was administered to determine the effectiveness of technological scaffolds in enhancing the learning outcomes. To explore how scaffolds affected the conversational interaction essential for task performance, students' self-perceived use of oral communication strategies was studied too. Findings indicated that

the mobile-supported group outperformed the control group on the vocabulary and conversation comprehension sub-tests. However, the experimental group performance on the grammar sub-test was not in bar with that of the control one. Furthermore, the mobile-supported group displayed greater awareness of fluency- and accuracy-oriented strategies for speaking than the control group. Implications for designing ML to enhance task-based English language teaching were provided.

EFL university students' learning strategies were changed due to using Mobile-Assisted Language Learning (MALL) environments. This conclusion was reached by Gao and Shen (2021). Their study adopted a context-specific case study design in which 75 Chinese EFL university participants were selected. Both quantitative and qualitative data were collected from a questionnaire and a follow-up interview. In a MALL environment, EFL university students' learning strategies were different in type and frequency from those used by peer students in a teacher-led or an examination-oriented language classroom. It was reported that metacognitive and commitment control strategies were most frequently used in a MALL environment. Moreover, metacognitive strategies were used more than commitment and environmental control ones. Furthermore, satiation and emotion control strategies were also employed notably. The implications of this study were important for understanding and designing MALL for EFL university learners.

In the Saudi context, Alshammari (2020) attempted to explore university students' and staff members' use of mobile technologies to facilitate English language learning and teaching. He also associated pedagogy with mobile technologies. Forty-nine university participants and thirty staff members were interviewed. Thematic analysis results indicated that participants predominantly employ their mobile devices informally outside the classroom to smooth their English language learning. Furthermore, social media were popular among participants and provide outlets to practice English language skills more widely. Notwithstanding, staff members tend to employ formal usage of mobile devices in the teaching context. They provided suggestions on controlling students' use of mobile devices. A comparison between students' and staff members' usages of mobile phones for educational purposes revealed students' supremacy of informal use of mobile devices to staff members' formal use of these devices for educational purposes.

Similar to Gao and Shen's (2021) study, Al-Shehab (2020) shed light on the insufficient evidence about the effectiveness of traditional writing teaching methods integrated with MALL in developing the native Arabic speakers' writing performance. She investigated the role of MALL in enhancing writing skills. The sample for the study consisted of forty female intermediate-level Intensive English Program (IEP) students at an intermediate level at Kuwait University. Participants were tested using a variety of mobile applications and websites. Questionnaires, observation notes, and other qualitative methods from student assignments were used for data collection. Findings indicated the effectiveness of smartphones in developing writing. However, she attracted attention to the complex nature of smartphones. That is why she cautiously interpreted the findings of her study. The traditional approach was compared to process writing to a mobile-assisted approach. In general, learner autonomy was improved by engaging in the writing process both inside and outside of the classroom. Implications for increasing motivation and peer collaboration via the use of mobile technology were suggested as well.

On the same track, Ghorbani and Ebadi (2020) employed a mixed-methods approach to study the instructor's feedback effect in (MALL) on EFL learners' grammatical development. The sample for the study consisted of 40 female EFL learners randomly chosen from the English learning chat groups on Telegram, an online instant messaging application. A quasi-experimental design was used. In terms of tools, Dialang, a free web-based language proficiency test, was used to assess learners' grammatical knowledge. Statistically, the paired samples t-test was utilized to analyze the quantitative data. Findings revealed the significant development of grammatical accuracy due to using chats in Telegram. Moreover, semi-structured interviews were conducted to explore learners' attitudes towards their MALL experience. It was concluded that learners had positive perceptions towards using MALL applications to develop their grammatical structures in online chats.

In a closely related study by Nariyati, Sudirman and Pratiwi (2020), EFL pre-service teachers' perception toward the use of ML in teaching English as a Foreign Language was investigated. The researchers employed the explanatory sequential mixed method as their study design. Seventy participants from Semester 8 students of English Language Education in Ganesha University of Education took part in the study. The employed tools were a questionnaire and an interview. Findings

highlighted EFL pre-service teachers' positive perceptions toward the use of MALL in teaching English. In addition, EFL pre-service teachers were aware of and capable of employing MALL in teaching English.

Being interested in EFL vocabulary learning via mobile application, Klimova and Polakova (2020) administered a questionnaire survey to 28 university participants. The questionnaire administration followed participants' experience of a vocabulary learning mobile app for one semester. The aim was to elicit university students' opinions and investigate their perceptions of employing mobiles in English vocabulary learning. Findings highlighted students' agreement on the positive aspects of vocabulary ML. It was reported that the mobile app was beneficial in preparing students for the final achievement test. There was an appreciation of learning accessibility at any time and any place. In addition, corrective feedback provided by the application was praised as well. The implementation of the mobile app in other courses taught at the faculty was also demanded by participants. Nonetheless, it was reported that the app was not very supportive regarding direct communication. Participants did not find lecturers' notifications encouraging. Besides, pronunciation support was not used effectively. This was attributed to such factors as offering students words and phrases without context and not testing all the items in the final credit test.

Focusing on vocabulary acquisition, Kohnke (2020) developed a vocabulary learning app for improving students' L2 receptive vocabulary. The app encompassed twenty levels and worked with both iOS and Android. The participants for the study were 14 undergraduate students at an English-medium university in Hong Kong. Semi-structured interviews were employed for a holistic overview. Those interviews measured students' perceptions of the app. Findings revealed a strong motivation for acquiring an L2 vocabulary among university students. Moreover, there was a preference for mobile applications using gamified features.

Özcan and Kert (2020) stressed the importance of both vocabulary knowledge and ML. The study aimed to investigate the difference in academic achievement between the students who used a mobile application in a word learning process and those who learn words traditionally in a classroom. Fifty-four participants were assigned to an experimental group and a control one. They used a mobile instant messaging application to enhance collocation. Quantitatively, an

achievement test was administered to both groups. A significant difference was found in favor of the experimental group. Qualitatively, individual interviews with students were held to elicit their opinions on the experiment. Mobile applications provided more memorable learning for 30% of students. Moreover, 20% of students stated that the visuals used by mobile vehicles contributed positively to vocabulary learning. Finally, 10% of students believed that mobile tools accelerated the vocabulary learning process.

Attempting to understand the extent to which the student teachers of English were aware of and proficient in using information and communication technology, Karakas and Kartal (2020) explored student teachers' familiarity with available Web 2.0 tools and mobile applications, the frequency of the use of these tools and the objectives behind using these tools. A large sample of 388 participants from two state universities in Turkey took part in the study. A closed and open-ended question questionnaire was used to collect data. Statistically, descriptive methods were employed. Results pointed out there were low degrees of familiarity towards the Web 2.0 tools and mobile apps among most participants. Furthermore, the most commonly used tools were the ones that contributed to listening and watching native and non-native English speakers. Corpus tools and virtual worlds were not used by student teachers. It was recommended that English language teacher education programs should offer more educational technology courses.

On the same track, Wongsuriya (2020) was interested in the neglected pronunciation in Thai educational systems. The focus of language teaching and learning was on grammar and structural forms. Her study aimed at examining Thai students' English pronunciation and to assess the students' performance in English pronunciation through using Google translate mobile application. Participants for the study were 24 university students who employed the mobile application. They were selected purposefully. The pre-post pronunciation tests and the semi-structured interviews were used as the study instruments. Results revealed that students' pronunciation was significantly improved. All students pointed out that mobile applications assisted them in improving their pronunciation even with those who had limited English pronunciation levels.

Kacetl and Klímová (2019) asserted young generations' familiarity with mobile phones. They also highlighted the promising opportunities

offered by mobile applications in English learning. Reviewing sixteen related studies conducted from 2015 to 2019, it was found that ML has become an eminent feature of foreign language learning. Some key benefits of ML were surveyed. ML enhances learner's cognitive capacity and increases their motivation to learn in both formal and informal situations. Moreover, it promotes the learner's autonomy and confidence. Encouraging personalized learning, ML was also found to help low-achieving students with their study goals. However, the study concluded by stressing the necessity of designing, planning and implementing mobile applications for educative purposes with caution. Students' needs should be taken into account and multiple language skills ought to be developed in authentic learning environments.

The previous review of literature and related studies led to two inferences. Firstly, there is an intense recent trend to employ mobile applications in English language learning and teaching. Technology, in general, and ML, in particular, were regarded by most educators as a safe, economic and practical solution to teaching and learning processes during COVID-19 repeated lockdown crises. Secondly, there was a scarcity in designing authentic mobile applications that deal with TEFL. The focus of most studies was either on learning vocabulary and grammar, or the extent to which learners had technological acceptance of ML. Thus, the idea of this study attempted to fill in a gap in the body of literature concerning the authentic production of mobile applications addressing EFL teachers.

Theoretically, the researcher is inspired by the ML theory. The tenets of this theory highlight the principles of mobility and communication in learning environments. According to the ML theory, students learn asynchronously and move from one topic to another. The learning environment is blended and students' engagement with technology is determined by their own needs. Moreover, it is stressed that the mobile element in the process is the learner rather than technology. In other words, devices are ubiquitous so students can integrate learning with their daily life activities. As for controlling ML environments, it can be divided between instructors and learners alike. Context is constructed by learners through their interaction with devices and with each other. The theory; however, does not deny the fact that ML can both complement and conflict with formal education. ML may raise ethical issues related to both privacy and ownership (Churchill et al., 2015; Ng & Cumming,

2015; Shuler, 2009). In addition, Johri (2020) linked using mobile apps in TESL and TEFL to constructivism. She pointed out that constructivist learning goes from the inside out. In other words, a learner who uses mobile apps constructs his/ her language learning and creates a supportive learning environment.

Method

Instruments

The Need Analysis Questionnaire

To establish the application on a real, practical basis; a semi-structured online need analysis questionnaire was prepared by the researcher and published on Google Forms. The questionnaire targeted a wide range of university staff members, supervisors, in-service teachers of English, graduates and EFL prospective teachers. Furthermore, participants of fourteen different nationalities took part in the questionnaire. Table (1) and Figure (1) display the details related to participants' nationalities as well as academic status:

Table (1):
The Need Analysis Questionnaire Participants' Nationalities

Nationality	Number of Participants
Egyptian	80
Turkish	12
British	6
American	6
Mexican	2
Belgian	2
Vietnamese	2
Palestinian	2
Moroccan	2
Tunisian	2
Algerian	2
Pakistani	2
Brazilian	2
Greek	2

The majority of participants were Egyptian and Turkish. British and American participants were in the second rank. An equal proportion of other Arab, European, Asian and South American nationalities participated as well. It is noteworthy to point out that the researcher set a time limit for participation in responding to the need analysis

questionnaire. That is why there was not enough time to receive more responses.
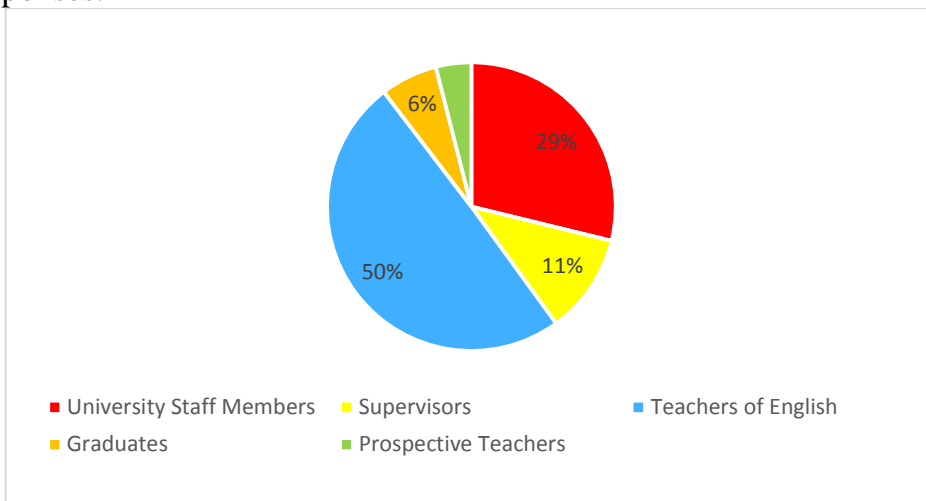

Figure (1): The Need Analysis Questionnaire Participants' Academic Status

Most of the need analysis questionnaire participants were in-service teachers of English, university staff members specialized in TEFL came in the second rank, whereas supervisors came third. Graduates and prospective teachers of English had minor participation in the questionnaire.

Opening the questionnaire, the aim behind its administration was made clear to participants. It was stated that the researcher intended to design a TEFL mobile application to be used in teaching university courses. Hence, participants were kindly requested to submit the questionnaire online.

The need analysis questionnaire included three items: two structured and one unstructured. The first structured item was a yes/ no question which asked about whether participants recommended the need for developing TEFL university courses to keep up with modern novelties. All the 124 participants responded "Yes" confirming the need for innovative content to address the contemporary novelties in the field of English language teaching.

The second item of the questionnaire was also structured. It required participants to select the most six worthwhile topics - in their opinion - that should be included in a modern TEFL application. A list of twelve topics was provided, and six ones gained the highest votes:
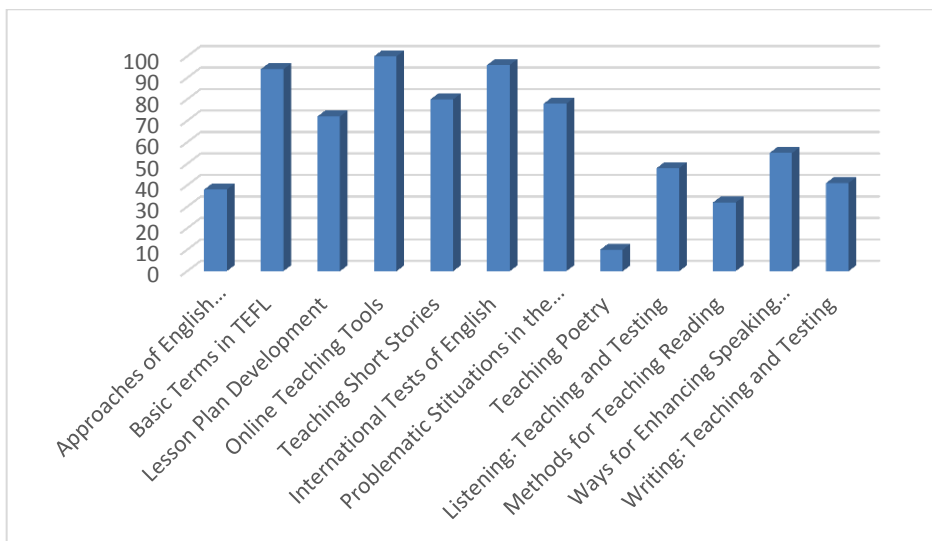
Figure (2): The Results of the Need Analysis Questionnaire

The most recommended topics to be included in the mobile application were: Online Teaching Tools (chosen by 81% of the participants), International Tests of English Language (selected by 77% of the participants), Basic Terms in TEFL (chosen by 76% of the participants), Teaching Short Stories (selected by 65% of the participants), Problematic Situations in the Classroom: Causes and Solutions (picked by 63% of the participants) and Lesson Plan Development (Chosen by 58% of the participants). Other topics gained lesser votes: Ways for Enhancing Speaking Skill (44%), Listening: Teaching and Testing (39%), Writing: Teaching and Testing (33%), Approaches of English Language Teaching (31%), Methods for Teaching Reading (26%) and, finally, Teaching Poetry (8%). One may note that all topics are important for a TEFL teacher, but the objective was to concentrate on the most persistent topics that meet the current needs of the field.

The third item in the need analysis questionnaire was unstructured. It required participants to provide their further comments, remarks or suggestions about the application project. Valuable insights were written down and enriched the designing step. Besides, some suggestions opened new horizons for further similar research works.

The Programs Used for Designing the Application

Designing the application herself, the researcher used common programs that do not require professional technical programming knowledge or skill. However, these programs present a final satisfactory,

competitive and goal-meeting application. The objectives behind not resorting to a specialized programmer related to offering teachers and lecturers a simple model that they can follow to produce similar applications themselves, and designing mobile applications at no cost.

The *KFS TEFL* application screens were designed by Microsoft PowerPoint 2010. The external links in each session were associated with Google Forms, Google Drive or YouTube. After designing the screens and their links, iSpring Suite Version 9.3.2 was used as an add-in within Microsoft PowerPoint 2010 to transform the PowerPoint Presentation file into an HTML file. Finally, Website 2 APK Builder Version 2.2 was employed to transform the HTML file into an Android Package APK that worked on a mobile phone as an application.

The Application Evaluation Questionnaire

Twenty-seven participants installed the application on their smartphones and went through its six sessions with the researcher's guidance. After finishing the sessions, participants were asked to submit an evaluation questionnaire on Google Forms. The application evaluation questionnaire consisted of nine items: six structured and three unstructured. The data collected by this questionnaire were meticulously analyzed and discussed.

Material

The material of this study is represented in the *KFS TEFL* application. The researcher followed the ADDIE model for instructional design (Kurt, 2019). As its name implies, this model consists of five phases; namely: Analysis, Design, Development, Implementation and Evaluation.

The Analysis Phase

In this phase, the researcher identified the participants: undergraduates, postgraduates and in-service teachers of TEFL who need a comprehensive condensed course that handles the basics as well as the most needed topics for the practical reality of teaching. Need analysis was identified according to the results of the administered need analysis questionnaire and the following main goal for using the application was set:

Providing teachers of English with adequate information and training on the most important topics in Teaching English as a Foreign Language.

Six behavioral objectives branched off the main goal:
At the end of using this application, learners should be able to:

- identify and differentiate the basic terms in the TEFL field.
- develop an integrated lesson plan.
- employ different online tools in planning for and executing the teaching process.
- utilize the different strategies for teaching short stories.
- differentiate between the IELTS and TOEFL in terms of aims, components and performance requirements.
- handle problematic situations in the classroom.

The Design Phase

Using Microsoft PowerPoint 2010, the *KFS TEFL* application content was designed. The content included text, images, videos, quiz buttons and download links of some related sources. The application included forty-five slides: a user interface, About screen, program contents, a final digital library that contained six full-text references and forty-one slides that handled the topics. A link to the researcher's YouTube channel was also inserted to help users watch specialized explanations on TEFL topics (See Figures 3 and 4).
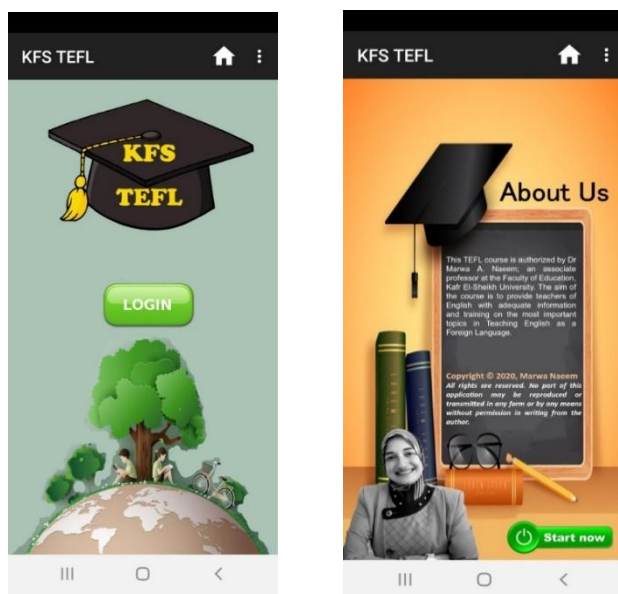

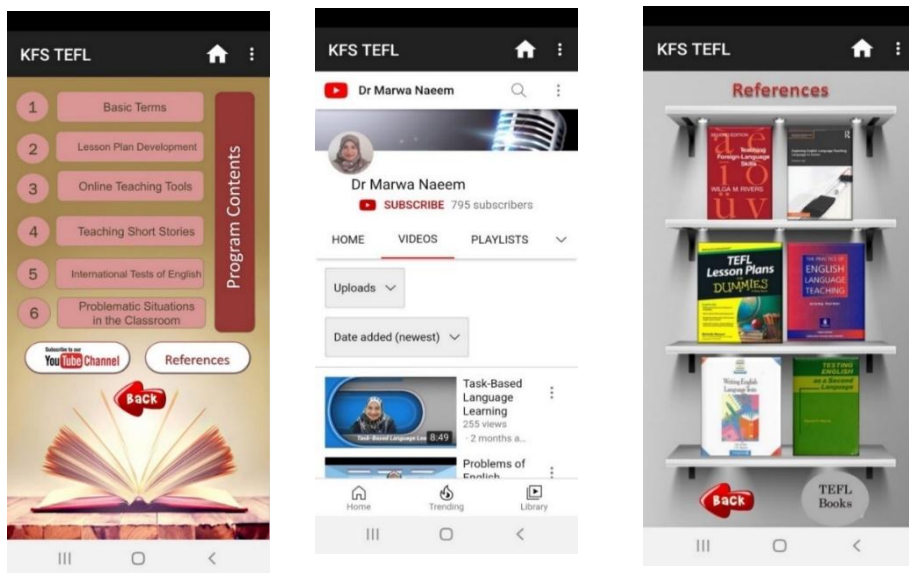*Figure (3): The KFS TEFL Application User Interface and About Screens*

Figure (4): The KFS TEFL Application Program Content, YouTube Link and Reference Screens

The forty-one slides related to the content of the application were distributed according to the ideas each topic covered. Table (2) illustrates the slides distribution among the application topics:

Table (2): The KFS TEFL Application Slide Distribution to the Topics

Topic	Number of Slides
Basic Terms	**3**
Lesson Plan Development	**16**
Online Teaching Tools	**5**
Teaching Short Stories	**2**
International Tests of English	**4**
Problematic Situations in the Classroom	**11**

Each topic starts with an introduction followed by idea presentation. A topic concluded with two options: returning to the Program Content slide or taking a quiz to test one's comprehension of the topic. An example of topic slide screens is shown in Figure (5):
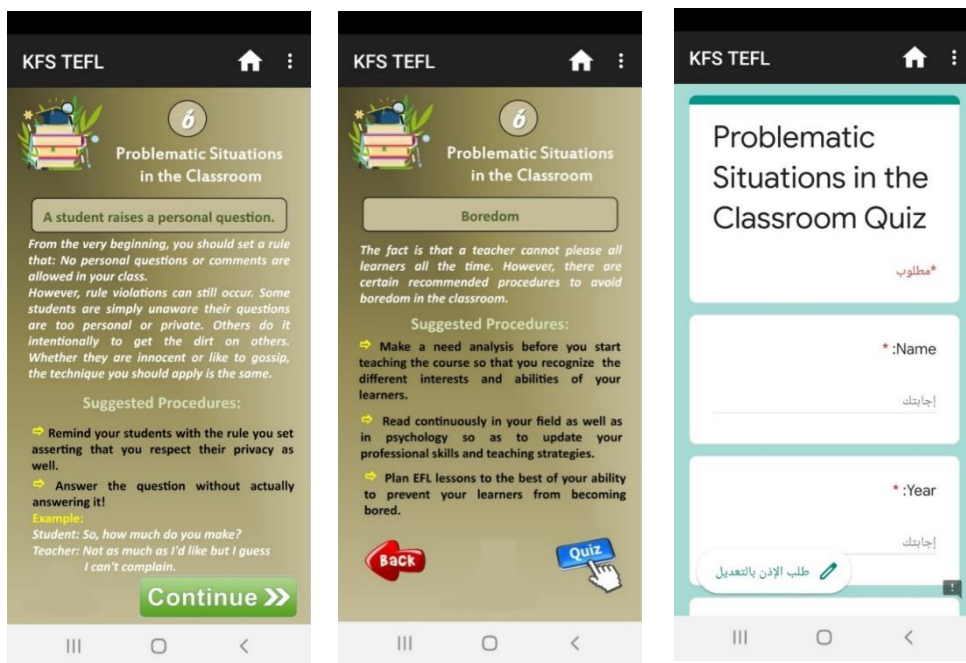
Figure (5): Sample Screens of the KFS TEFL Application Topics

All quizzes are created by Google Forms. They can be used for formative evaluation and render immediate feedback to both the instructor and the beneficiary.

Finishing designing the slides by Microsoft PowerPoint 2010, the researcher utilized the iSpring Suite Version 9.3.2 add-in to adjust the player options and save the project as an HTML format. This was an important step before transforming the design to an APK file that can be set up on smartphones and tablets. Website 2 APK Builder Version 2.2 was used to transform the HTML file into an android application. The program was easy to deal with and only required filling in some data, selecting preferable options and uploading the HTML file and the application icon.

The Implementation Phase

Having generated the APK file, it was ready to be delivered to participants' mobile phones via varied alternatives. Delivery options were both manual and online. In manual delivery, participants received the application APK file on their tablets or smartphones through Bluetooth transferring. Online delivery was done by downloading the application APK file via a link on Google Drive.

The timeline for achieving the objectives was six weeks as participants were encouraged to deal with one topic per week. During

implementation, participants were instructed to contact the researcher online for guidance and support. Fruitful ZOOM meetings were also held to discuss the topics and exchange experiences.

The Evaluation Phase

After six weeks of working on the *KFS TEFL* application, twenty-seven participants were invited to evaluate their experience. An online evaluation questionnaire that contained nine items was submitted and analyzed. Each respondent was required to submit his/ her name along with the academic status to open the questionnaire. The first six items of the questionnaire were structured. The last three items of the questionnaire were unstructured aiming at eliciting evaluators' responses about the merits and the demerits of the application as well as their own suggestions to improve it.

Results

Among the twenty-seven respondents who evaluated the application, there were fifteen in-service teachers of English from various sectors, i.e., governmental, Azhari and language schools. Besides, six teachers took part in the application evaluation. Three university graduates and an equal number of staff members used the application as well.

The first structured item of the questionnaire required respondents' opinions about the design of the application in terms of fonts, colors and screen backgrounds. Most respondents – 55.6% – decided that the application design was excellent. About 22.2% of respondents found the application design very good, and an equal percentage found it good. No responses were given to either "accepted" or "poor" design.

Working on the application was evaluated in terms of being easy or difficult by the second structured item of the questionnaire. A majority of 66.7% decided that using the application is very easy. A less number of respondents – almost 22.2% – considered working on the application is easy. However, the application was difficult for 11.1% of those who tried it. Neither "normal" nor "very difficult" were selected by any respondent.

The third item of the questionnaire was also structured. It inquired about how respondents found the academic content of the application. The application content was found comprehensive for 77.8% of respondents. Meanwhile, 22.2% of respondents stated that the content was adequate. Moreover, nobody found the application content insufficient.

As for evaluating the integrated quizzes, the fourth structured item of the evaluation questionnaire rendered 55.6% of responses that regarded the quizzes section to be quite adequate. Almost 44.4% of responses found the quizzes comprehensive. To add, no respondent selected the "insufficient" distractor.

Moreover, respondents were asked to what extent they found the references integrated with the application beneficial. A three Likert scale item was set for this purpose. Results showed that 77.8% of respondents regarded the references in the application as very beneficial, while 22.2% of them stated that the references were quite beneficial. No response went to the "insufficient" distractor.

The sixth item of the evaluation questionnaire was a yes/ no question that investigated the use of the videos on the integrated YouTube channel. The majority of respondents – 66.7% – made use of the related videos on the researcher's YouTube channel; however, 33.3% of respondents did not.

Item seven was unstructured. It elicited responses about the merits of the application. There were common responses and unique ones. Concerning the common responses, 33% of respondents appreciated the application simplicity and ease of usage. Another merit of the application, provided by 22% of respondents, was the availability of full-text references. Giving the gist of the most needed topics in TEFL was also stated by 22% of respondents. Other unique merits were also given. The application was said to be useful and suitable for a wide range of audience (TEFL undergraduates, postgraduates, regular teachers, supervisors … etc.) Working offline was highlighted by another respondent. In addition, the application was reported as enjoyable, exciting and not boring. This lines with Johri (2020) who drew attention to the fact that smartphones enhance motivation and lead to more pleasurable learning practices. Furthermore, smartphones promote learners' skills.

In the eighth unstructured item of the evaluation questionnaire, the application demerits were elicited. Almost 44% of the respondents stated that the application has no demerits. Meanwhile, 22% of respondents complained of a technical problem as text fonts mixed up when the application was installed on their phones. Only one respondent reported the plenty of examples in the lesson plan development as a demerit.

Similarly, a respondent believed that not being sharable among users' mobiles was a disadvantage of the application too.

   Respondents' suggestions to develop the application were requested in the last item of the evaluative questionnaire. A quarter of respondents had no suggestions to develop the questionnaire mentioning that it was ideal for them in its current form. However, some unique ideas were provided. Providing immediate feedback after quizzes was advocated. Furthermore, decreasing font sizes and background colors so that reading becomes faster was proposed. Another suggestion for bettering the application design and making it more attractive was adding sounds when surfing the application and incorporating voice reading of texts. In addition, the session of teaching short stories was recommended to include more operational guidelines for teachers. Eventually, adding more references was proposed.

Discussion

   In general, the results rendered by the application evaluation questionnaire indicated an obvious plaudit of ML in the higher education context. In this concern, the current study lined with Thedpitak and Somphong's (2021) in which they concluded that EFL university students' attitudes towards using mobile applications in language learning were positive. This also accorded with the findings attained by Abu-Ayfah (2020) who concluded that most EFL university students perceived mobile applications as helpful tools for English language learning. Furthermore, Muhammad (2020) recommended the incorporation of ML in EFL college courses as she found a positive impact of mobile applications on EFL majors' critical reading skills. On the same track, Crompton and Burke (2018) suggested that higher education faculty should consider the chance to expand their language instruction with ML both inside and outside formal settings.

   Analyzing university students' needs and building mobile applications via the production-oriented approach were advocated by Zhang (2020). Such practices were found effective in stimulating students' learning motivation and enhancing their communicative competence, especially in English production skills. In 2019, Klimova concluded that utilizing mobiles in foreign language learning enhances university students' performance. However, she asserted the necessity of designing such learning applications according to students' needs and

being continuously facilitated by a teacher. Besides, ML is believed to be an appropriate complementary method to other forms of course delivery.

On the same track, it is believed that perceived usefulness and attitudes are greatly influencing factors of employing ML in higher education. The success of integrating mobile applications into higher education courses can be predicted by such factors as learners' perceived enjoyment, self-efficacy and ease of use (Qashou, 2021).

The simple dynamic design of the *KFS TEFL* application attained users' approval. The researcher was keen to acquire adequate knowledge about the basics of educational material design before producing the application so as not to resort to a technician. The aim behind this was to achieve her ideas about the application and keeping it as easy to use and bereft of linguistic mistakes as possible. This principle was highlighted by Haug (2019) as he assured the designers' constant need for acquiring such material knowledge as the internalization of facts, information, and skills.

Despite their overt merits, ML applications have minor usability problems. Kumar and Mohite (2017) emphasized mobile small screen sizes, little input capability and processing power. These characteristics present a challenge for designing and using ML applications in the educational context. Nevertheless, they asserted the ease of use as a crucial factor in a successful ML application. Designing the program herself, the researcher attempted to keep the application interface and navigation as simple as possible. Neither complicated login requirements nor difficult surfing procedures were necessary. That is why a reasonable number of its users found it convenient and simple. The principle of encouraging educators to design mobile applications themselves was advocated by Hsu and Ching (2013). They believed that even with limited programming skills, educators are still able to develop their customized mobile apps according to their various needs. Peer support, instructors' guidance and online generating tools were recommended.

In the researcher's own opinion, designing ML applications should not overemphasize form at the cost of content. In other words, a designer ought to take care of the academic content he/ she presents rather than getting infatuated with the endless options that such modern technology provides. ML applications are not games. They are not meant for entertainment. Rather, they are an alternative to other traditional sources

like books and references. Yet, all sources of learning still have objectives to achieve and a content to convey.

Formative evaluation is regarded to be motivating and substantial for promoting learning experiences. In the *KFS TEFL* application, a quiz is available after each session so that users can self-evaluate their assimilation. This option was praised by many users such as Hanafi, Murtadho and Ikhsan (2020) who pointed out that formative evaluation influenced students' skills positively. They added that formative evaluation is a catalyst for learning motivation. Similarly, Louhab, Bahnasse and Talea (2018) drew attention to the fact that assessment is an essential part of any learning process. They emphasized what they called Formative Assessment in Context-Aware Mobile Learning (AFA-CAML). The aim of AFA-CAML was to assess learners formatively considering the educational context based on the CAT (Computerized Adaptive Tests) theory.

Although modern learning tools are fantastic, traditional learning sources; namely: books are indispensable. Ziakun (2020) asserted the increasing demand for books even in online learning environments that were globally adopted as a consequence of COVID-19 pandemic. She argued that books are the main and necessary means of learning. In addition, books help learners concentrate, increase their interest and guide young learners to independent practical work. References explain and help to consolidate knowledge. The reference section in the *KFS TEFL* application was allotted to this concern. A downloadable PDF library of valuable specialized reference books was available for the application users.

In a recent study, Saputri (2021) appreciated the use of YouTube in English learning and highlighted YouTube positive impact on teachers as it enables them to deliver the learning material easily to students. Moreover, YouTube was believed to have a positive impact on students understanding of the learning material itself due to the plenty of elements – images, text and sounds – a video incorporates. However, there are such challenges in using YouTube as the difficulty of understanding native videos and the poor internet connection. In designing the current *KFS TEFL* application, the researcher inserted a link of her YouTube channel on which related videos to the session topics were offered. The challenges were treated by using a steady-toned academic language, the possibility of replaying videos and reducing video display quality so that

they can easily stream without interruptions even with low internet speed.

ML merits are many. Focusing on ML in higher education, George (2019) listed such advantages of ML as ubiquitousness among university students and increasing student engagement. Besides, mobiles are cheaper than PCs, consequently, they are an economic source of learning for college learners. Flexibility and promoting equal learning opportunities are other considerable pros of ML. Moreover, Baytiyeh (2019) asserted the key role of ML technologies in maintaining education delivery during crisis cases when education services are disrupted. Being a reliable means, mobiles supported the continuity of education delivery during temporary school closures caused by the COVID-19 pandemic. The researcher invested all these merits in creating the *KFS TEFL* application seeking to offer its users a reliable and interesting learning source.

Despite its overt advantages, ML was reckoned to carry its own cons. Mobiles are accused of distracting learners and giving space for deviating from the set educational goals. For some scholars, utilizing mobiles in the teaching process is rather arduous. Many staff members do not possess the necessary skills to integrate mobile applications into their curricula. Likewise, mobiles have a negative connotation to wasting time and surfing inappropriate content. That is why some scholars ban mobile usage in the classroom. Finally, the small size of most mobile screens may make it difficult to display a satisfactory amount of information (George, 2019). The utilizing of the current *KFS TEFL* application attempted to avoid and overcome as many demerits of ML as possible. The users' age and levels supposed that they would not be highly distracted on using mobiles for learning. Besides, setting a schedule for the sessions and the quizzes guaranteed little or no distractions. The challenge of the small size of mobile screens was overcome by the possibility of magnifying texts and displaying information in a successive order through flexible buttons and hyperlinks.

Zhang (2020) advocated employing the ADDIE Model to design instructional materials. The different stages of the model help a designer take care of the minute details of the designed material. Moreover, the steps provided by the model make the designer more organized and aware of each stage requirements. Using the ADDIE Model in designing

the *KFS TEFL* rendered a reliable and scientifically established application.

Compared to similar applications, the impact of *KFS TEFL* on EFL teachers' professional development lined with the results attained by Mejang and Suksawas (2021) who examined the effect of a teacher-training program employing a message application on developing teachers' comprehensive development. It was found that the message application had a positive impact on teachers' knowledge, skills and attitudes towards English teaching.

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Conclusion

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Designing mobile applications to enhance English language teaching theory and practice for EFL teachers is a worldwide demand. There is a scarcity of such specialized applications. To establish such applications on a scientific basis, a thorough need analysis has to be carried out prior to the design process. In addition, it is preferred to design simple, clear-cut applications so that the emphasis is laid on pedagogical outcomes rather than technical or layout features.

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