

The Framework for the Rational Analysis of Mobile Education (FRAME): Enhancing Speaking Skills for Military Officers

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Abstract: In the current context of the post Covid-19 pandemic, the field of education has witnessed a significant shift from traditional classroom settings to online learning platforms. However, the accessibility of technology, particularly laptops and computers, remains a hindrance for learners in their pursuit of acquiring proficient speaking skills. Consequently, this obstacle necessitates exploration of alternative solutions, such as mobile applications, which hold promise for enhancing English language proficiency. Prior to the development of mobile applications for ESL classrooms, it is essential to examine and consider the Framework for the Rational Analysis of Mobile Education (FRAME). Therefore, this paper aims to critically review FRAME and its applicability in designing mobile apps to enhance speaking skills for military officers. By thoroughly analyzing FRAME, it becomes evident that this model offers a highly effective design for mobile learning, encompassing three key components that contribute to a comprehensive instructional output. Consequently, the incorporation of FRAME-aligned teaching and learning modules within a mobile application ensures a conducive and holistic mobile learning environment. It is therefore concluded that the integration of FRAME within mobile language learning will yield substantial benefits for learners, educators, and stakeholders alike.

Keywords: *Design and development, English as Second Language (ESL), Framework for the Rational Analysis of Mobile Education (FRAME), military officers, mobile learning, speaking skills*

Introduction

The COVID-19 pandemic has necessitated a shift from physical to online education, presenting various challenges. This article explores the implications of online education on quality education, particularly in light of the Sustainable Development Goals (SDG) Goal 4, which emphasizes the provision of quality education (United Nations, 2022). The adverse impact of the pandemic on educational gains and reading proficiency levels is highlighted. Despite the limitations, the educational community has had to adapt to the new norm of online learning (Jan, 2020; MacIntyre et al., 2020; Oyedotun, 2020). One significant hurdle faced by learners is the lack of access to technological resources, such as laptops and computers, at home (Jan, 2020; Oyedotun, 2020). This scarcity affects learners' motivation to engage in online education.

In the context of military officers, who require proficiency in speaking skills, it is crucial to explore effective strategies to overcome these challenges. While laptops and computers may not be readily available, mobile devices are more accessible and can serve as a platform for informal and lifelong learning. In Malaysia, for instance, smartphones are prevalent, making them an ideal tool for mobile language learning (Malaysian Communications and Multimedia Commission, 2018).

In the field of education, numerous mobile apps have been developed to cater to various learning needs. However, existing mobile apps for English language learning primarily focus on specific skills, such as vocabulary acquisition or grammar, without offering a comprehensive approach (Heil et al., 2016). This limitation is particularly evident when it comes to developing speaking skills for military officers. Current mobile apps lack opportunities for communication, real-world references, and authentic language use, which are crucial for enhancing speaking abilities (Nair & Yunus, 2022). Foreign language proficiency plays a crucial role in the military sector, particularly in international missions and diplomatic engagements. Speaking skills, in particular, hold significant importance for military officers as effective verbal communication is essential for successful interactions with foreign counterparts. However, the acquisition and development of speaking skills in a foreign language pose unique challenges for military personnel, including time constraints, geographical limitations, and the need for specialized and contextually relevant training (Pasichnyk et al., 2021).

To bridge this gap, it is necessary to design mobile apps tailored to the unique requirements of military officers, with a primary focus on enhancing their speaking skills. A comprehensive and effective app should incorporate features that allow for simulated military scenarios, role-playing exercises, and interactive speaking practice to help officers develop fluency, confidence, and proficiency in communication within military context. The mobile apps should also provide comprehensive speaking practice, incorporate communication and peer interaction, and offer authentic and contextualized learning experiences (Pasichnyk et al., 2021).

Therefore, before designing and developing a mobile app for English as a Second Language (ESL) classrooms for military officers, it is essential to consider the Framework for the Rational Analysis of Mobile Education (FRAME) as a model for evaluating the app's usability. By utilizing the Framework for the Rational Analysis of Mobile Education (FRAME) in the development process, mobile apps can be designed to address these needs and optimize the speaking skills development of military officers. Thus, this paper aims to review FRAME in order to adopt mobile learning in ESL classrooms for military officers.

Definition of Mobile Learning

Mobile learning, defined as the use of mobile devices and applications for language learning purposes, has gained considerable attention in recent years. The portability and ubiquity of mobile devices make them an ideal platform for delivering language learning content and facilitating practice opportunities for learners (O'Malley et al., 2005). The initial conceptualization of mobile learning can be traced back to the concept of palm-based learning, as defined by Quinn (2001). Another important aspect of mobile learning is the emphasis on

the mobility of learning itself, rather than being limited to a specific device, allowing learners the flexibility to engage in learning activities anytime and anywhere (O'Malley et al., 2005). Sharples et al. (2006) further expanded the understanding of mobile learning by defining it as the integration of technology, pedagogy, environment, and social interaction, highlighting the mobile nature of all these components. Quinn (2001) had originally introduced the concept of mobile learning as hands-on learning utilizing mobile devices. However, O'Malley et al. (2005) clarified that mobile learning pertains to the mobility of learning, emphasizing the ability to learn on the move rather than focusing solely on the devices used. This demonstrates the potential of mobile learning to enable learners to engage in educational activities at their convenience and in various locations.

With the evolution of technology and time, Sharples et al. (2006) provided a more comprehensive definition of mobile learning, incorporating the mobility of technology, pedagogy, environment, and social interactions. This broader definition positions mobile learning as a versatile tool applicable to education. Based on this understanding, mobile learning was selected as a complementary tool to enhance the English speaking skills of military officers. Mobile learning has gained increasing popularity in the digital era, driven by the growing availability of diverse mobile devices with various functions and features that capture users' interest (Toperesu et al., 2019).

In the context of the post-COVID-19 pandemic era, education has undergone a significant shift from traditional face-to-face classes to online learning. This unprecedented situation has underscored the importance of e-learning and mobile learning. Mobile devices play a critical role in teaching and learning as they serve as the primary tool for continued learning in the home environment (Romero-Rodriguez et al., 2020).

Previous Studies on Mobile Learning

Numerous studies have been conducted to explore the implementation of mobile learning both in Malaysia and globally. Mobile learning, as a subset of Mobile-Assisted Language Learning (MALL), has garnered significant attention, resulting in an upsurge of research in this domain. The integration of social media into the teaching process has emerged as a prominent trend within mobile learning. Notably, a considerable body of research has focused on Mobile-Assisted Language Learning (MALL) in the context of English as a Second Language (ESL). For instance, Artyushina et al. (2017) investigated the use of podcasting as a means of enhancing ESL learning, particularly listening skills. The findings revealed a positive impact, as learners displayed a keen interest in engaging with ESL study materials through mobile devices. Additionally, Kilar-Magdziejcz (2017) reported on the implementation of Bring Your Own Device (BYOD) policies to foster improvement in ESL classrooms. Despite the changes these policies introduced to the teaching process, the BYOD concept demonstrated favorable outcomes. These studies offer distinct perspectives on the approaches to mobile learning, with one emphasizing the supplementary role of mobile devices in instruction, while the other advocates for the adoption of BYOD in the classroom. Nevertheless, the efficacy of mobile learning as a valuable tool for teaching and learning has been well established.

On the other hand, research in the field of mobile language learning has shown promising results in enhancing language skills for military personnel. For instance, a study conducted by Niculescu and Obilisteanu (2017) demonstrated that military cadets who engaged in mobile learning activities showed significant improvements in their language proficiency as it attracts cadets' attention and motivation, helps in enriching their vocabularies and developing independent work habits in meeting their own learning needs. Similarly, Tucker (2010) found that the integration of mobile learning into military training programs resulted in successful training among officers. Apart from that, Hsu and Chao (2023) reported positive acceptance of mobile learning from military students' perspective. Thus, these findings support the notion that mobile language learning can effectively address the specific language needs of military officers, particularly in terms of speaking skills.

Usability of Mobile Learning

Usability encompasses the evaluation of software tools, encompassing factors such as understandability, learnability, usability, and desirability (Moumane et al., 2016). Baharudin et al. (2013) defined usability within the context of four factors: user, environment, technology, and task or activity. Zahra et al. (2017) emphasized the ease with which users can accomplish tasks using an application. Although different definitions of usability exist, the general consensus is that it refers to assessing the usability of a tool from various perspectives. In the context of mobile learning, usability pertains to the extent to which mobile applications can be effectively utilized. For instance, Kuhnel et al. (2018) examined the usability of mobile phones in terms of design and navigation, while Kumar and Mohite (2018) conducted a systematic review to evaluate the usability of mobile learning applications, considering aspects such as learnability, ease of use, usefulness, and user satisfaction. Hence, the usability of a mobile device encompasses the overall design quality and user satisfaction.

The Framework for the Rational Analysis of Mobile Education (FRAME), introduced by Koole (2009), offers a model for understanding the relationship between social interaction, learning capabilities, and the educational significance of mobile devices. The FRAME model is shown in Figure 1 as follows.

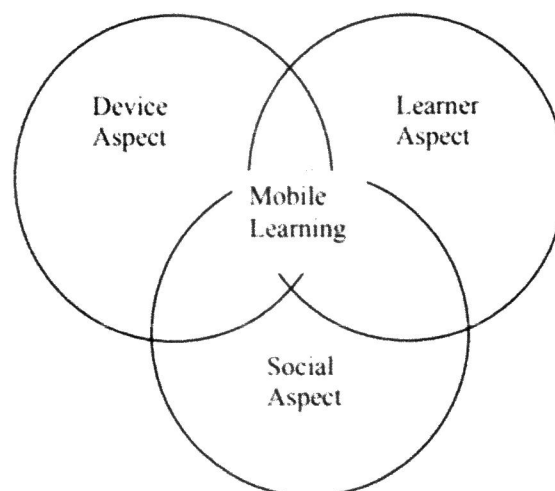


Figure 1. The Framework for the Rational Analysis of Mobile Education (FRAME) by Koole (2009)

As depicted in Figure 1, the FRAME model encompasses three key aspects in the development of mobile learning modules: the device aspect, the learner aspect, and the social aspect. The device aspect entails the physical, technical, and functional description of the mobile device, encompassing hardware, user interface, compatibility, and technical considerations. It is crucial to ensure user-friendly design in mobile learning modules to facilitate effective learning retention. The learner aspect focuses on the cognitive dimension of learners, taking into account their tasks, contexts, and prior knowledge. Designing mobile learning activities within real-world contexts that align with learners' background and cognitive abilities can lead to more desirable learning outcomes. Finally, the social aspect emphasizes learners' interaction and communication autonomy through mobile learning, enabling communication and collaboration without physical presence. Mobile app developers should consider social platforms that facilitate interaction among learners and teachers to support the learning process.

The FRAME model has gained recognition as a valuable framework for assessing the usability of mobile learning applications (Kumar & Mohite, 2018; Lall et al., 2019; Liu et al., 2020; Mares-Rosas et al., 2017; Uther, 2019). It takes into account technical aspects such as device usability and ease of use, as well as pedagogical elements, including learners' cognitive and social skills. Consequently, the FRAME model serves as a guiding framework for the development of mobile applications, ensuring the incorporation of desired usability features as perceived by users and learners.

Conclusion

This article presents a review of the Framework for the Rational Analysis of Mobile Education (FRAME) in the context of utilizing mobile learning to enhance speaking skills for military officers. The military officers need a mobile learning platform to facilitate their learning due to their nature of work. The FRAME model is identified as the most effective approach for designing mobile learning interventions, incorporating three interconnected components to ensure a comprehensive learning experience. When developing a mobile application aligned with the FRAME model, all aspects necessary for an optimal mobile learning environment are taken into consideration. The device aspect encompasses the incorporation of intuitive and visually appealing icons and a well-designed application interface. The learner aspect involves the inclusion of learning elements in the mobile application that are rooted in established learning theories. The social aspect of the mobile app encourages active discussion and interaction among users through forums and chat features. The selection of the FRAME model is justified by its holistic consideration of these key factors. Moreover, the three aspects are interdependent, facilitating enhanced learning adaptability for learners through the effective integration of devices and learning materials. Future research endeavors could focus on the design and development of mobile applications using FRAME as a reference framework. In conclusion, adopting mobile learning within the FRAME model is anticipated to yield beneficial outcomes for learners, teachers, and stakeholders involved in the learning process.

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