

The Impact of Mobile Game-Based Language Learning Apps on EFL Learners' Motivation

Nada Gamlo¹

¹ King Abdul-Aziz University, Jeddah, Saudi Arabia

Correspondence: Nada Gamlo, English Language Institute, King Abdul-Aziz University, Jeddah, Saudi Arabia.

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Abstract

This study examines the effect of integrating mobile-game based language learning applications (MGBLLAs) on Saudi female English as a Foreign Language (EFL) students' motivation to learn English. It explores the perceptions of students regarding the pedagogical value of the following free MGBLLAs: *Game books: Great Reader*, *Game to learn English - EnglishTracker*, and *Learn English Vocabulary Pop Quiz*. A group of thirty Saudi female beginner level students, aged from 18-20 years old and enrolled for their foundation year at King Abdulaziz University (KAU) participated in the study. The study was carried out over a seven week period. Data were collected using two questionnaires. A pre-MGBLLAs integration questionnaire was modified to determine students' motivations for learning English. A post-MGBLLAs integration questionnaire designed by the author was also issued. It was utilized to explore the perceptions of students regarding the use of the three mobile game-based language learning apps, and to discover any impact on learner motivation. The results of the pre-MGBLLAs integration revealed that the EFL students were motivated to learn English. However, their motivation was high instrumental motivation, because it is taught as a compulsory course in their foundation year and they must achieve high scores to be able to start studying their preferred major. Significantly, the findings of the post-MGBLLAs integration questionnaire revealed that students perceived the three apps as beneficial for learning and improving motivation. These results contribute to the literature regarding mobile game based learning, and EFL students' motivation.

Keywords: EFL, games, motivation, technology, mobile learning, mobile applications, students' perceptions, instrumental motivation

1. Introduction

Motivation is central when learning a language. Consequently, diverse educational strategies are implemented to encourage broad understanding of the importance of, and nature of, language learning; especially when students are required to learn English, as in Taiwan (Chen et al., 2005). Similarly, in the Saudi higher education context, where Arabic is the mother tongue, English is a compulsory subject. EFL learners therefore require motivation to overcome the obstacles to acquiring English, so that they can master the language. Indeed, it is believed that without resolute motivation, even the brightest learners might prove unable to achieve language proficiency (Cheng & Dörnyei, 2007).

Prior research on language learning has discussed Arab learners' motivation and its importance in successful language learning (Alrabai, 2014; Al-Qahtani, 2013; Akram, 2015; Alkaabi, 2016; Mohammed, 2015; Javid et al., 2012; Moskovsky & Alrabai, 2009; Tahaineh & Daana, 2013). It has been widely observed that lack of motivation is one of the factors causing low English learning proficiency among Arab students (Al-Khairi, 2013). Exploring methods to improve students' motivation to learn English could create more competent English learners, which is the core goal of language educators and researchers. Arguably, excellent motivation among language learners arises from proper teaching (Alamer, 2016; Al-Khairi, 2013). Alamer (2016) argued that using mobile applications appropriately for the purpose of language instruction can facilitate and sustain language learning.

Research into EFL learning affords some insight into the relationship between learners' motivations and the use of mobile applications (Alamer, 2016; Jong et al., 2018). In recent years, there has been an increase in the use of MGBLLAs in EFL classrooms, with researchers citing their various benefits as motivational, interesting, and enhanced learning tools (Gozcu & Caganaga, 2016). There has also been some research investigating the use of

MGBLLAs on learners' motivation, in particular whether they positively affect language performance (Lin et al., 2018; Jong et al., 2018; Papastergiou, 2009; Hwang et al., 2016; Yükseltürk, 2018). However, there has been limited research into this issue and Saudi EFL learners' motivation. Therefore, the current study aims to examine this specifically. It will also investigate the perceptions of EFL students regarding the use of the free MGBLLAs: *Game books: Great Reader, Game to learn English – EnglishTracker, and Learn English Vocabulary Pop Quiz*. It is anticipated that this study will fill the gap in the research by providing information regarding Saudi EFL mobile game based learning applications, and their integration as well as its impact on their motivation to learn English.

The study attempted to answer the following questions:

- 1) What are the types and level of motivation among Saudi EFL students?
- 2) How do EFL learners perceive the impact of mobile game-based apps on their motivation to learn English?

2. Literature Review

2.1 Motivation in EFL Learning

Much of the research related to EFL learning to date has focused on motivation as crucial when studying English. The early research identified two types of motivation: instrumental and integrative motivations. Gardner and Lambert (1972) defined instrumental motivation as the desire to learn the second language for a specific purpose, such as passing a degree, getting a job, or travelling. By contrast, integrative motivation is the desire to learn a language to get to know its culture and to communicate with its speakers. It is important to note that discussing EFL students' motivation always relates to context (Chen et al., 2005; Kimura et al., 2001). Warden and Lin (2000) studied Taiwanese EFL learners, and found that students have instrumental motivation to learn English because it is not their native language and they do not use it for communication; they learn it to complete their final exams before starting a career. The authors found a significant level of instrumental motivation in Taiwan as English is required to graduate from the college. Similarly in Palestine, Dwaik and Shehadeh (2010) found lack of integrative motivation among EFL college students, who even responded negatively when questioned about integration with a foreign culture. However, instrumental and required motivations were found not to be sufficient for successful English learning proficiency. However, some students who study English are concerned about the culture of the English language and have integrative motivations. This group seems to show a high level of use of learning strategies and a strong desire to succeed in language learning (Al-Qahtani, 2013).

In the Arab EFL context, specifically in Saudi Arabia, and the United Arab Emirates, studies have revealed that instrumental motivation is greater than integrative motivation (Moskovsky & Alrabai, 2009; Mohammed, 2015; Qashoa, 2006). This can be attributed to students' awareness of the professional benefits of English language learning. Students are aware that mastering English can give them access to prestigious jobs and a successful career.

2.2 Utilizing MGBLLAs to Enhance EFL Learning Motivation

EFL instructors are predominantly concerned with implementing interesting and effective teaching strategies to encourage their students to learn. In Malaysia, Yunus et al. (2013) discovered that (96.2%) of English teachers believed pictures, videos and projectors made lesson time more interesting and facilitated learning. MGBLLAs can be a convenient option for integration in class activities and/or outside the class. Kétyi (2013), in a pilot study of mobile learning, suggested, "If we could integrate the mobile devices in our language teaching practice, our students could gain valuable additional learning time outside the school and that could improve their language learning efficiency" (p. 133). Therefore, faculties at Saudi Arabia institutes are being encouraged to utilize an adequate diversity of teaching strategies when teaching EFL students, to create an enjoyable learning environment. Instructors could take advantage of the fact that students enjoy using their mobile phones for communication and playing games (Alamer, 2016). In particular, it is advised that instructors should integrate mobile game based language learning applications to enhance learners' motivation and encourage lifelong learning (Ebrahimzadeh & Alavi, 2016). Ebrahimzadeh and Alavi (2016) conducted an experiment to evaluate the effect of using digital games for vocabulary learning as a means to create enjoyment and motivate EFL students. The authors found the students enjoyed learning vocabulary by playing digital video games, which significantly enhanced their motivation to learn. Arguably, EFL learning can be accomplished through activities that include visual and audio aids, which could be made available via mobile learning games based applications. When compared to traditional teaching strategies, digital games can also offer learners an interactive learning experience and bolster independent-learning (Lin & Lan, 2015; Yükseltürk, 2018). Moreover, they enable students to connect learning content to everyday life (Cam & Tran, 2017; Hwang et al., 2016).

A number of authors have researched the effect of MGBLLAs on EFL teaching and learning from the perspective of learners' motivation (Alamer, 2016; Avila, 2015; Beserra et al., 2017; Cam & Tran, 2017; De Freitas, 2006; Ebrahimzadeh & Alavi, 2016; Gozcu & Caganaga, 2016; Vasileiadou & Makrina, 2017; Saha & Singh, 2016). In their study of the (SoLoMo) game-based application, Lin et al.'s (2018) experimental group, which used the gaming application recorded better learning outcomes and increased motivation. The majority of the students confirmed the game application was easy to use and helpful. It can be argued that utilizing MGBLLAs could benefit EFL learning. In a qualitative and quantitative study conducted at a university in Vietnam, Cam and Tran (2017) evaluated the use of games for teaching grammar. They concluded that integrating games helped them develop a motivating, engaging and anxiety free grammar learning experience. However, some students experienced difficulties related to not having the necessary vocabulary to communicate with their peers while engaging in game activities; meanwhile others did not understand the instructions, and some were reluctant to communicate using new grammatical structures. The obstacles to implementing MGBLLAs are not discussed in this research.

The following section focuses on the research methods used to design the study and to obtain data.

3. Methodology

This is a quantitative study that aims to examine the impact of using MGBLLAs on EFL students at the English Language Institute (ELI) in King AbdulAziz University (KAU), focusing on students' motivation to learn English. The study also explores the students' perceptions about integrating the free MGBLLAs: *Game books: Great Reader*, *Game to learn English - EnglishTracker*, and *Learn English Vocabulary Pop Quiz*.

3.1 Participants

The participants were from one EFL class comprising 30 Saudi females. Students were beginner level, and aged between 18 and 20 years old. They are all enrolled on a preparatory year program at KAU. The group is taught by the researcher, which meant that it was convenient to carry out the study with them. The study was explained to the students, and they all agreed to participate by signing an informed consent form.

3.2 Methods and Data Collection

Two methods were utilized in this study for data collection: a pre-MGBLLAs integration questionnaire, and a post-MGBLLAs questionnaire. The pre-MGBLLAs integration questionnaire was modified from the literature and aimed to explore students' motivations for learning English. The pre-MGBLLAs integration questionnaire included 11 items answered using a five-point Likert scale to elicit the extent to which students are motivated to learn English, and whether instrumental or integrative motivation dominates. The post-MGBLLAs integration questionnaire was designed by the researchers based on the research on mobile learning. It comprises 12 items also measured on a five-point Likert scale. Its objective was to evaluate if and how the use of MGBLLAs altered students' motivation. The questionnaire asked the participants about their perception of the benefit of using the MGBLLAs, and their interest in them. Both questionnaires were translated into Arabic, i.e. the students' native tongue. Additionally, both the English versions and the translated versions of the questionnaires were checked for accuracy by two of the researcher's colleagues, who are Arabic native speakers and also fluent in English.

After the pre- MGBLLAs questionnaire was administered the students were required to upload the apps on their smart phones. Three apps were used: *Game books: Great Reader*, *Game to learn English – EnglishTracker*, and *Learn English Vocabulary Pop Quiz*.

Game books: Great Reader is an interactive eBook produced by Oxford University Press. It targets primary and upper-primary level students, and focuses on reading skills. It uses audio narration and activities to evaluate learners' reading comprehension. It increases students' motivation by rewarding those who complete tasks with badges and points, which they collect to reach a higher level of the game. *Game to learn English - EnglishTracker* was created for learners at all levels to improve their grammar. The students are rewarded with a star every time they learn a new grammatical rule. The app explains the rules when students make an error. It also allows students to level up, by five grammar rules. *Learn English vocabulary Pop Quiz* is a gameplay app designed for all levels and all ages. It encourages learners to learn new words by presenting interesting images, and tracking progress; it generates more options as learners improve.

An hour was devoted to conducting mobile gaming activities over a six week period. Then the students were required to fill in the post-MGBLLAs integration questionnaires.

IBM SPSS statistics ver. 20 was applied to analyse all the questionnaires. The results were presented and then discussed in relation to relevant literature to answer the research questions.

4. Results

The results for the Inter-Item Pearson Correlations are shown in the following tables. All themes have a statistically significant correlation with a total sum of the scale $p\text{-value} < 0.005$, which means both scales are valid and exhibit internal consistency with the themes (Tables 1 & 2).

Table 1. Pre- MGBLLAs questionnaire

Instrumental motivation	<i>r</i>	0.763**
	<i>p-value</i>	0.005
Integrative motivation	<i>r</i>	0.695**
	<i>p-value</i>	0.005

** . Correlation is significant at the 0.01 level (2-tailed).

Table 2. Post-MGBLLAs questionnaire

Impact of using MGBLLAs	<i>r</i>	0.864**
	<i>p-value</i>	0.005
Students' interest in using MGBLLAs when learning English	<i>r</i>	0.909**
	<i>p-value</i>	0.005

** . Correlation is significant at the 0.01 level (2-tailed).

4.1 Pre-MGBLLAs Questionnaire

A parametric test (One Sample t-test) was used to test the significance of the mean for the themes and to scale the values for response (3), which corresponds to “Neither Agree/ Nor Disagree”. This tested the significance of the level of agreement.

The one sample t-test revealed that all the themes and scale were significantly greater than 3 “Neither Agree/ Nor Disagree”; that is there was a significantly strong agreement = $p\text{-values} < 0.005$ (Table 3).

Table 3. Pre-MGBLLAs questionnaire t-test

	N	M	SD	T	P
Instrumental motivation	30	4.23	.50	13.45	0.005
Integrative motivation	30	3.65	.54	6.56	0.005
Pre-apps integration	30	3.96	.38	13.94	0.005

The results describing students' motivation to learn English indicate that the intensity of instrumental motivation is ($M=4.23$), which is significantly higher than integrative motivation ($M=3.69$).

The table below (Table 4) presents the percentage of agreements for each level of the scale, and the associated themes. The students had a stronger level of instrumental motivation relative to their integrative motivation.

Table 4. Level of agreement on the pre-MGBLLAs questionnaire

	Strongly Disagree	Disagree	Neither Disagree	Agree/ Nor	Agree	Strongly Agree
Instrumental motivation	3.3%	5.6%	10.6%		26.1%	54.4%
Integrative motivation	2.0%	10.0%	28.0%		41.3%	18.7%
Mean pre-integration Scale:	2.7%	7.6%	18.5%		33.0%	38.2%

4.2 Post- MGBLLAs Questionnaire

The one sample t-test showed all the themes and scales for the post-questionnaire returned responses significantly greater than 3 “Neither Agree/ Nor Disagree”; that is the students significantly strongly agreed = p-values < 0.005 (Table 5).

Table 5. Post-MGBLLAs questionnaire t-test

	N	M	SD	T	P
Impact of using MGBLLAs	30	4.38	.539	14.02	0.005
Students' interest in using MGBLLAs when learning English	30	4.32	.465	15.58	0.005
Post-integration questionnaire (impact of MGBLLAs on students' motivation to learn)	30	4.35	.441	16.73	0.005

The following table (Table 6) presents the percentage agreement for each level of the scale and its themes. 86% of the students agreed that using MGBLLAs was beneficial as a means to improve their motivation to learn English, and perceived of this as an interesting and memorable experience that they intend to continue to engage in.

Table 6. Level of agreement in post- MGBLLAs questionnaire

	Strongly Disagree	Disagree	Neither Nor Disagree	Agree/ Agree	Strongly Agree
Impact of using MGBLLAs	0.0%	2.0%	12.0%	32.0%	54.0%
Students' interest in using MGBLLAs when learning English	1.0%	1.9%	11.0%	36.2%	50.0%
Post-integration questionnaire (impact of MGBLLAs on students' motivation to learn)	0.6%	1.9%	11.4%	34.4%	51.7%

The Likert scale scores were normally distributed $p > 0.005$. Therefore, the independent sample t-test was used to compare the means for both scales. The mean score for post-integration (impact of MGBLLAs on students' motivation to learn) (4.35 ± 0.44) was significantly higher than the mean score for pre-integration (motivation questionnaire) (3.96 ± 0.38), $t(3.6)$ and p value < 0.001 (Table 7).

Table 7. Post/Pre- MGBLLAs questionnaire independent t-test

	N	M	SD	T	P
Post- app integration	30	4.35	0.44	3.6	0.001
Pre-app integration	30	3.96	0.38		

5. Discussion

This section discusses the findings of the study. The evidence collected using the pre-MGBLLAs questionnaire suggested that the EFL students had a higher level of instrumental motivation than integrative motivation. This result was anticipated because EFL students in Saudi Arabia in general, and at the preparatory level in particular, study English solely to obtain their degree and to access a good future job. Therefore, the students are motivated because English is a compulsory subject in their preparatory year, which they must pass to continue their studies. This finding has been reported in relation to similar contexts in the literature, included in the work of Moskovsky and Alrabai (2009), who examined the level of motivation among Saudi EFL learners from public schools and universities. The authors found students had a high level of instrumental motivation, which was apparent in their strong agreement over items that relate to learning English to achieve a job with a high income, to getting good grades, and travelling abroad. In Jordan, a similar study was conducted by Tahaineh and Daana (2013), who found that undergraduate students had a strong motivation to learn English, and were looking for every possible method to acquire high grades in the English subject. The survey results indicate that students had instrumental motivation to learn English. However, some research in the Saudi EFL context reported that students have high

levels of both instrumental and integrative motivations (Alrabai, 2014).

The findings from the post-MGBLLAs questionnaire suggested the majority of students believed using MGBLLAs was beneficial as a way to motivate them to learn English. They found that the applications are easy to use, and are accessible, which makes it convenient for them to practice English more. This result can be seen as expected, because digital games are popular and widely used by this generation. The reported benefits of MGBLLAs have been commented on by other researchers; for example, Berns et al. (2016), who found hybrid game-based apps like VocabTrainerA1 increased students' motivation to learn a second language (L2). Moreover, they were perceived as a useful tool for language learning. Students in the current study also believed that using MGBLLAs delivered an interesting and memorable experience, noting that they will continue using them to learn English. This is consistent with Cam and Tran' (2017) research, which found that in a Vietnamese university the majority of students agreed that games support an interesting and interactive lesson. Similarly, in a study at a university in Taiwan, Yen et al. (2016) found that the experimental group, which used a mobile vocabulary learning application with game related functions expressed significantly higher satisfaction and effectiveness than the control group that used a mobile app without a gaming function. The authors concluded that the experimental group perceived the game element as providing an effective learning platform for learning vocabulary. It is probably the fun factor associated with MGBLLAs that appeals to learners and motivates them to learn the L2. The current study demonstrated a positive correlation between the use of MGBLLAs and English learning motivation. Integrating MGBLLAs in EFL teaching can support traditional instruction with a variety of visual and fun activities, enhancing students' motivation to learn English and reinforcing their learning (De Freitas, 2006). This encourages EFL teachers and educators to design classroom activities that integrate game based applications to enrich the English learning process and make it more interesting and productive.

6. Limitations

The study has some limitations to consider here. The population of the study was relatively small; i.e. one class (30 students). A larger group could have produced more generalizable data. In addition, data was collected from female students only, due to the segregation in education between males and females in Saudi Arabia. Investigating both genders would be beneficial for future studies, to include different experiences and provoke a wider discussion. Time constraints applied to the study, as it was limited to one module (i.e. seven weeks). A longer period of study should be considered in any future research.

7. Conclusion

The study explored the impact of integrating MGBLLAs on Saudi EFL learners' motivation and their perception of their value when learning English. The findings suggested some educational implications. Specifically, we recommend that teachers should integrate MGBLLAs with their L2 students and encourage their use to bolster their language learning and improve their motivation. Clearly, these applications should be selected according to students' level and needs, as well as meeting their interests, to achieve productive learning results.

This study contributes to the literature regarding the use of digital games for learning in the context of EFL in Saudi Arabia, and sheds light on the impact of MGBLLAs to improve EFL learners' motivation in the context of higher education. The current research offers educators and decision-makers valuable insights into EFL education at Saudi universities, and suggests ways to improve learning outcomes.

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