Language Learners' Usage of a Mobile Learning Application for Learning Idioms and Collocations

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ABSTRACT

This study explored how four groups of language learners used a mobile software application for learning idiomatic expressions and collocations. A total of 45 participants in the study used the application for a period of one week. Data collected from the application, a questionnaire, and follow-up interviews showed that participants usage of the application correlated with their average scores on the quizzes in the application and that usage of the application can be predicted by a variety of factors, such as language proficiency, users' average daily usage of their mobile devices, and motivation and learning goals. Findings also underscored the importance of providing language learners with resources to help them learn idiomatic expressions and collocation. Furthermore, results showed that participants have strong positive attitudes toward the use of mobile technology in language learning.

KEYWORDS

Mobile Learning, Idioms, Collocations, Language Learning Apps

INTRODUCTION

A number of studies in the field of mobile assisted language learning within the last decade has examined the effect of mobile devices on language learning, and how mobile devices are used in and outside of the classroom to promote learning (Kukulska-Hulme & Shield, 2007; Levy & Kennedy, 2005; Stockwell, 2013; Thornton & Houser, 2001, 2005; Wong & Looi, 2010). However, little is known about the ways in which learners interact with apps for language learning and how learners view these apps in the context of their language learning. Research has not yet identified the profiles of language learners and the contexts of learning that best suit them. There are many questions that are yet to be answered as to how an app might deliver successful language learning experiences. For instance, will users prefer learning experiences embedded in games? Would learners' language proficiency influence how the app is used? Is there an expiry date for an app? This paper describes how four different groups of language learners use a mobile application to learn idiomatic expressions and collocations. Specifically, this study investigates the ways in which four different groups of English language learners use a mobile app to learn idiomatic expressions and collocations, the extent to which language proficiency influences the use of such an application, and the extent to which usage of mobile phones predicts how learners use their mobile devices for language learning. The research questions were as follows:

1. In what ways do four groups of English language learners use a mobile app to learn idiomatic expressions and collocations?
2. To what extent can learners' usage of mobile devices and their language proficiency predict use of the app?

BACKGROUND LITERATURE

In their study of the acquisition of Italian vocabulary via SMS, Levy and Kennedy (2005) found that students who received text messages featuring definition of vocabulary words in

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Italian during regular intervals learned more vocabulary items and had improved their learning compared to those who did not. Thornton and Houser's (2001) study which investigated the potential for mobile phones to assist Japanese language learners with English vocabulary found that students receiving emails regularly learned more than those students who were only urged to learn vocabulary. However, while there seems to be an advantage for learning via mobile devices, researchers have also found that students still value the PC as resource for more "serious" language learning (Stockwell, 2008, 2013; Thornton & Houser, 2001). In a more recent substantial investigation of how learners interact with mobile apps, Stockwell (2013) tracked 50 leaners of English as they learned vocabulary through server logs that looked at metadata of time of usage, location, and amount of time spent on the learning activities. Stockwell concluded that while mobile devices are used by learners, they spent more time on the PC than on their mobile device. Despite their proliferation and increased sophistication, mobile devices are not often considered by learners to be the main modality for language learning (Stockwell, 2008, 2013; Thornton & Houser, 2001), even though students report that they can be effective for language learning, considering the opportunities of convenience and learning on the go they afford.

Importance of Idiomatic Expressions and Collocations

Idiomatic expressions (formulaic expressions, and lexical expressions) and collocations (ready-made chunks, and multi-word phrases that usually co-occur together) (Granger & Paquot, 2008) are an important aspect of language learning (Boers, Eyckmans, Kappel, Stengers, & Demecheleer, 2006; Farghal & Obiedat, 1995; Firth, 1957; Nesselhauf, 2005; Pawley & Syder, 1983). Pawley and Syder (1983) argue that "fluent and idiomatic control of a language rests to a considerable extent on knowledge of a body of 'sentence stems' which are 'institutionalized' or 'lexicalized'" (p. 191). According to Boers et al. (2006), there are three psycholinguistic reasons why idiomatic expressions are beneficial for language learners: (a) They help learners achieve perceived native-like performance, (b) they are retrieved from memory in chunks which helps learners produce fewer hesitations, and (c) they facilitate fluent language production under real-time conditions. Native speakers of English use idiomatic expressions frequently, and therefore, it is important for second language learners of English to be able to understand them because their understanding of idiomatic expressions may likely facilitate communication with speakers of English. Zhang (1993) found that more proficient second language writers use far more collocations correctly than less proficient writers. Furthermore, Al-Zahrani (1998) found that Saudi students' knowledge of English collocations correlated with their proficiency in English.

The rationale for creating an app to teach idioms and collocations is threefold: (a) The importance of learning idiomatic expressions and collocations for second language learners and their noted difficulty, (b) their seamless implementation in mobile devices, and (c) the opportunities for on the go learning afforded by mobile devices (Nesselhauf & Tschichold, 2002).

METHOD

Description of the application

Idiomobile is a mobile app available via a variety of vendor's online stores, such as Apple's App Store, Google Play (formerly the Android Market) and Blackberry App World. For this research, this app was made available to special handsets. Therefore, it is not currently available commercially anywhere, nor will it be a commercial product in the future. The application contains three main components: A game, a quiz, and a flash-card.

The game in the application is based on a character that encounters a variety of situations where knowledge of how to use idiomatic expressions is necessary. Figure 1 shows an example of the game mode in *Idiomobile*. In each situation, the character faces a problem that requires using the appropriate idiomatic expression or collocation. The

character in the game (who is assisted by the user) is required to use the appropriate expression based on the context and the problem presented. The game contains 30 scenes covering situational language use in a variety of contexts, i.e., in the market, in the airport, in the hotel, to name a few. Each of these scenarios includes pre-defined problems that a character may face, so that every time the user plays the game, the problems in each situation may change. As shown in Figure 1, for example, a common collocation used in a restaurant is the expression "*Can I start you off with something?*" The other scenario shows common collocations in use such as *file a claim*, and *arrange for baggage delivery*.

Figure 1
Game Mode in *Idiomobile*
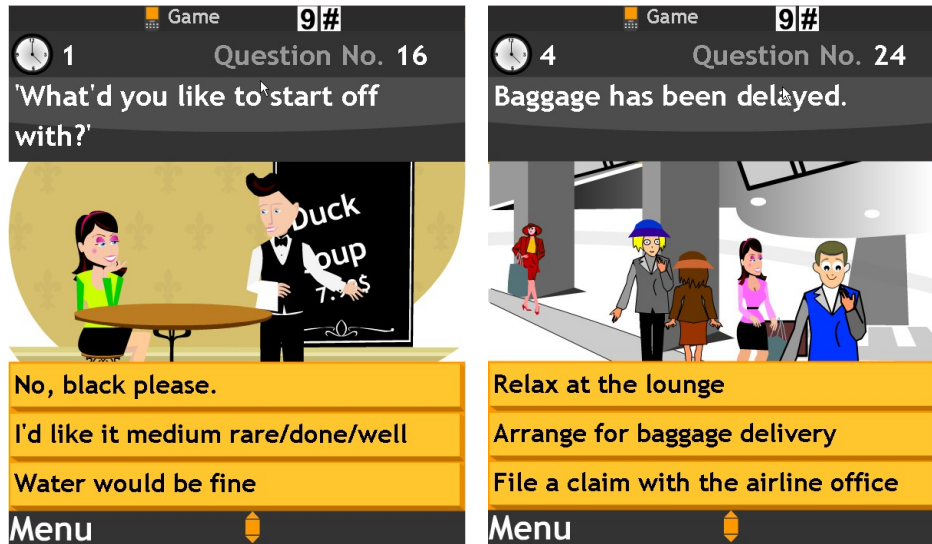
The flash-card component in *Idiomobile* comprises eleven sets of idiomatic expressions that users can review, in the form of flash-card screens that are also accompanied by an example sentence illustrating the given expression (Figure 2). The eleven sets are grouped thematically: *Academic*, *Food*, *Shopping*, *Travel*, *Feelings*, *Body Parts*, *Animals*, *Colors*, *Finance*, *Health*, and *Sports*. Expressions that contain a reference to a color are filed under the *Color* group. Expressions that contain a reference to an animal are filed under the *Animal* group, and so forth.

Figure 2
Flash-Card Component of *Idiomobile*

The quiz component allows for customized, multiple-choice quizzes to assess learning of the idiomatic expressions and collocations. Each quiz can be customized with respect to a) the number of items to include in each quiz, b) themes from which idioms and collocations will be randomly selected, and c) the amount of time to spend on each quiz. Figure 3 illustrates the quiz set-up screen. The options that appear for each idiom in the application include the correct answer and two randomly selected by the application.

The idioms and collocations in this app were collected from websites and books aimed at teaching the most popular idioms. The guiding principles behind selecting the idioms and collocations to be included in the app were frequency of usage and popularity. While there are several methods to generate frequency lists of collocations and idioms and the contexts they appear in, the idioms in the app were selected because they appeared in several websites that aim to teach ESLs idioms and collocations. Some are also culled from texts that focus on teaching idioms and collocations. About a third of them were collected based on the researcher's interaction with native speakers in everyday situations over a period of 13 months. Thus, these were used in day-to-day interactions which learners would find useful.

**Figure 3**
Self-customized Quizzes Available for Learners
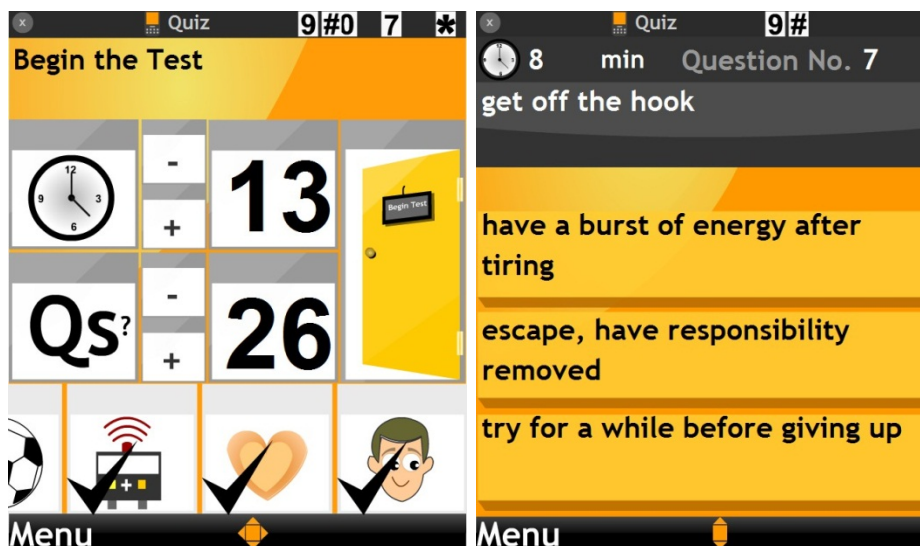
Participants and Design of the Study

The participants in this study were divided into four groups based on their self-reported TOEFL scores and the context of their English learning: Advanced students in a graduate English program at a university in the US (hereafter G1) who had the highest average self-reported TOEFL score of all groups (608); students in a graduate business program in the US (hereafter G2) who had the second highest average self-reported TOEFL score (525); students in an intensive English Language program in the Middle East (hereafter G3) who had the third highest average self-reported TOEFL score (510), and students in an intensive English language learning program in the US (hereafter G4) who had the lowest average self-reported TOEFL score (438). Figure 4 displays the range and the average of participants' self-reported TOEFL scores. A discussion of the groups' characteristics can help put these scores in a meaningful context. Not only did the G1 group have the highest self-reported TOEFL score, but it also had the highest average length of residence in an English-speaking community. Learners in this group had spent at least two years living in an English speaking community. In addition, they had studied and learned English on a graduate level, which provided them with strong knowledge of the English language. The G4 group, on the other hand, had the lowest self-reported TOEFL score; they were in an intensive English

program to improve their English. Learners in the G2 group had resided in an English-speaking community at least a year. G3 learners had never been to an English-speaking country. The highest reported TOEFL score for the G1 group was 647, which is not surprising since competitive TOEFL scores are expected for admission to the graduate program. The highest TOEFL score reported for the G2 group was 550. The highest reported TOEFL score for the G3 group was 583. This can be considered an outlier since participants in the G3 group were enrolled in a TOEFL preparation course and are expecting to score higher to pursue degrees in English and/or immigrate to an English speaking country. The highest self-reported TOEFL score for the G4 group was 493. In other words, the self-reported TOEFL scores to a certain extent reflected in general learners' proficiency of English. Paper-based TOEFL scores range from 310 to 667. To help put these TOEFL scores in context, a score of 550 is required for admission to graduate programs at the university where the research was conducted and a score of 500 is required for admission for undergraduates (some majors require a higher score, and this differs by department).

Figure 4
Participants' Reported TOEFL Scores in Each Group
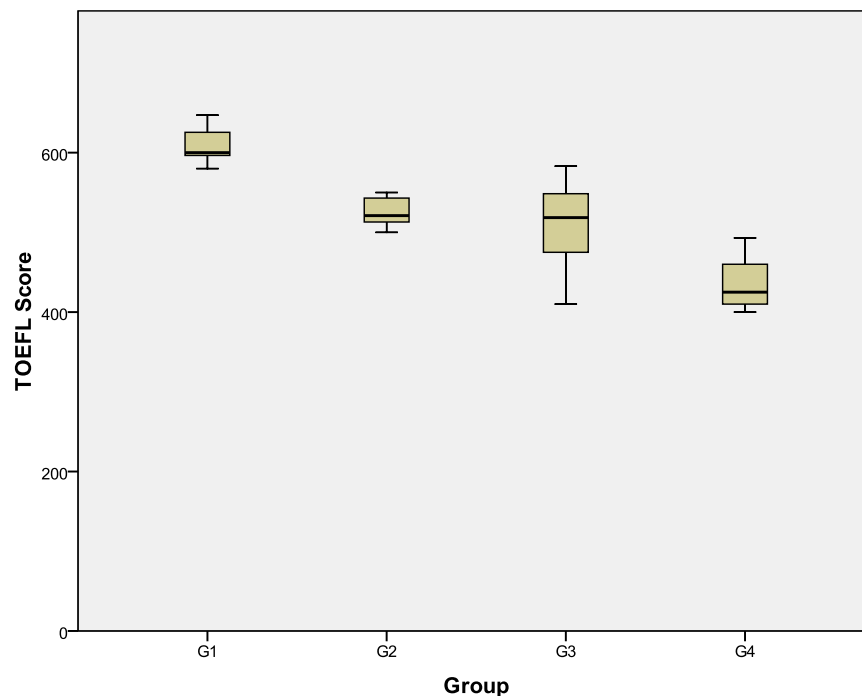
Participants were asked to fill out a preliminary questionnaire which asked them to describe their mobile usage behavior, provide demographic information, and to report the frequency of mobile phone usage and the nature of that usage, i.e., activities they use their mobile devices for (i.e., making calls, texting, listening to music, playing games, and so forth). After completing the questionnaire, participants received smart phones from the researcher with the application pre-installed. These phones were similar in their technical specifications (i.e., had the same operating system, had similar specifications as to their random access memory RAM, and processor speed). The participants were given two training sessions to use the application. A week later, mobile devices were collected from participants, and participants were interviewed regarding their experience with the application.

The participants were not given specific instructions as to how they should use the application. They were simply taught how to use the functions of the application and access

its components. Beyond that, the participants were encouraged to use the application as they saw fit. All data collected by the application on the provided phones was related to how the app, *Idiomobile,* was used. The phones the participants were given were not capable of sending or receiving either calls or text messages. Other functions, like using the camera, the music player, etc., were available. Participants used these phones along with their own personal phones. Because of limited resources, 11 phones were available to be given to participants. Therefore, whenever a group of participants completed a week using the app, the usage data on the phones was extracted and the phones were given to the next 11 participants. The participants used the app for one week, so they all used the app on all weekdays, albeit different start and end dates.

Data Collection

Data collection consisted of a preliminary questionnaire, application usage, and exit interviews. Only data from participants who had completed all of these parts were included in the final analysis. The total number of participants who took part in the study was 64. Those who completed all parts of the study were 45.

Data on application usage included the number of screens visited, the number of quizzes taken, the scores on each quiz, and the number of correct and incorrect attempts at answering questions. To ensure familiarity with using mobile devices, participants were asked about their mobile usage prior to the study. Participants indicated that they used their phones regularly between 1 and 2 hours on average per day as shown in Figure 5. Usage refers to participants' use of all of the phone's functions. Based on data from the questionnaire, participants mostly used their phones to text and listen to music, besides making and receiving calls. Figure 5 shows that roughly fifteen percent of participants indicated that they used their phones on average between 15 minutes and half an hour a day, 18 percent between 3-5 hours a day, and the remaining between 1-2 hours a day.

Figure 5
Average Phone Usage per Day for All Participants as Reported on the Questionnaire (Prior to the study)
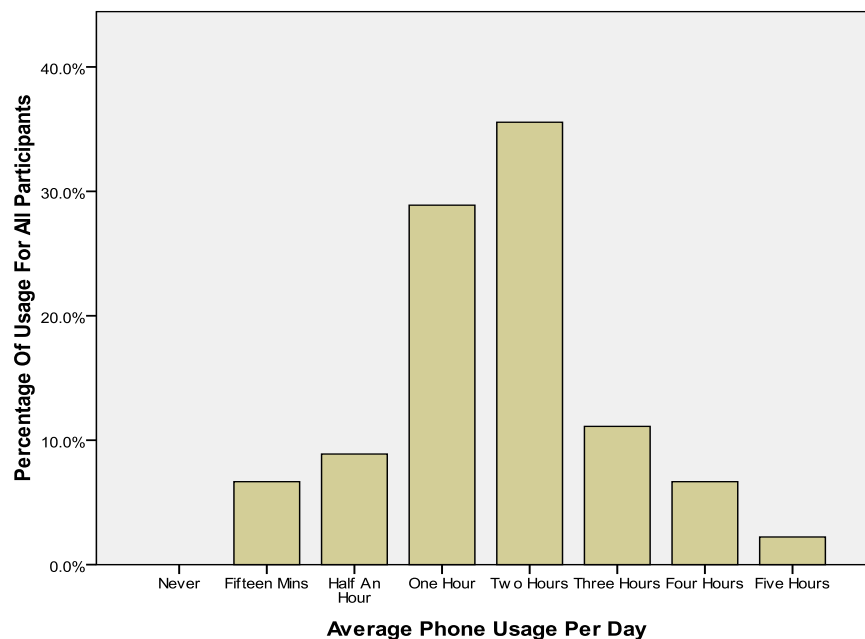
RESULT AND DISCUSSION

App Usage Patterns by the Four Groups

Learners (*n*=45) used *Idiomobile* 1,262 times. Usage was measured by the number of screen visits, so every screen visit was counted to report the usage data. On average, each learner used *Idiomobile* 28 times, about 4 times per day during the week. G1 used *Idiomobile* more than any other group, about 39.7 percent of the total usage time, G2 with 30 percent, G3 with 19.17 percent, and G4 with 11 percent. Figure 6 presents usage of *Idiomobile* by all groups.
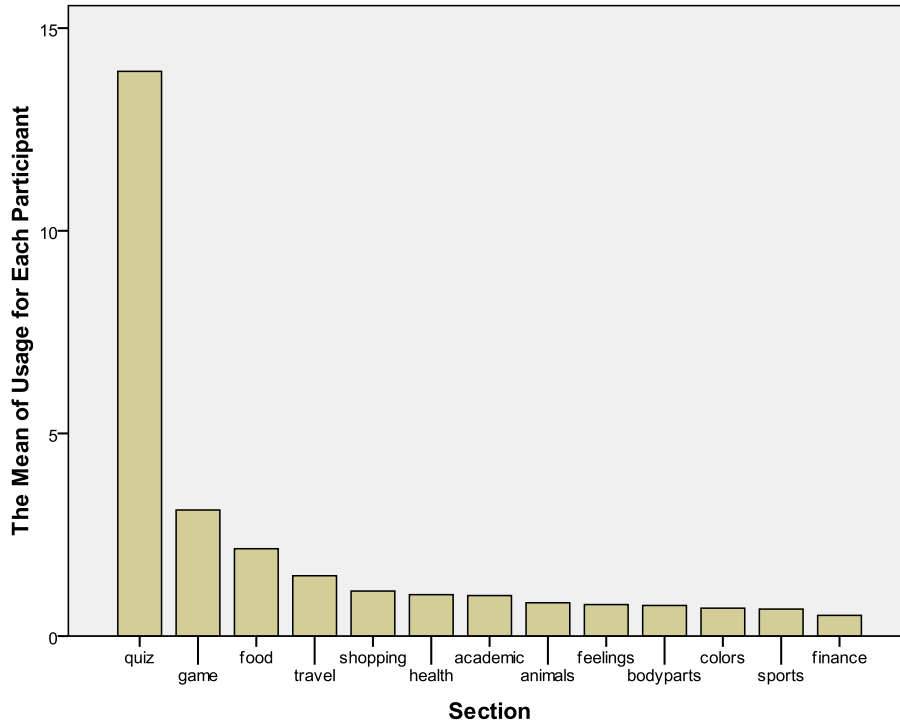
Figure 6
Four Groups' Usage of *Idiomobile*
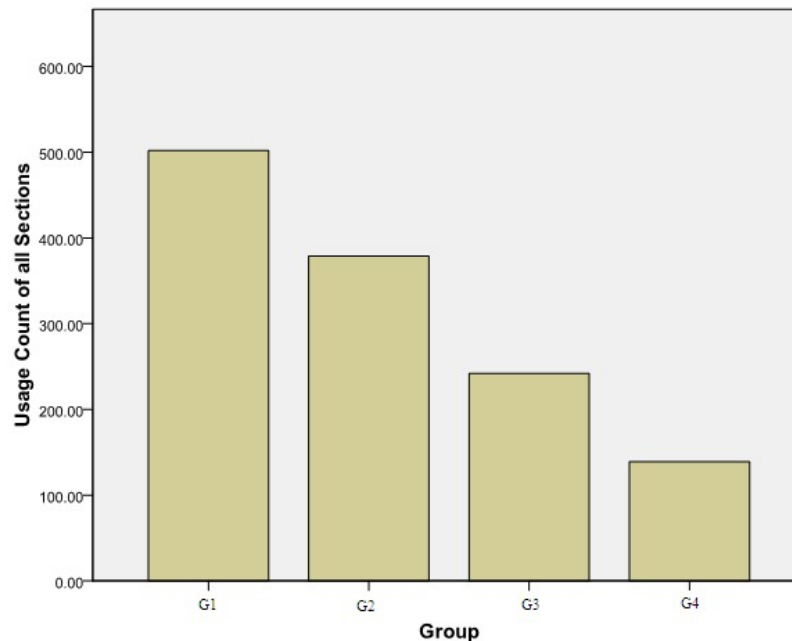
Usage of Components

Figure 7 shows usage of all components in the application. The most used section in the application was the *Quiz* section. The *Quiz* section was accessed 627 times by all groups with an average of 14 quizzes for each participant. The *Flash-Card* component was accessed 495 times by all groups and the *Game* component was accessed 140 times by all groups. Figure 8 shows The *Flash-Card* component was the second most used component of the app with *Food*, *Travel*, and *Shopping* respectively being the most used of the 11 thematically grouped sets. Participants' usage of the application earlier in the study was significantly higher than towards the end of the study. Learners used *Idiomobile* 28 times on average on the first day of the study, and 2 times on average on the last day of the study. The usage of *Idiomobile* declined consistently after the first day of the study till day 4 when it increased on average but continued to decline afterwards. One explanation for the decline of using *Idiomobile* may have to do with learners' excitement at the beginning of the study about using the application, and the decline of interest afterwards. Seventy-seven percent of English learners in all groups used *Idiomobile* daily over the course of the study.

Figure 7
The Mean of Usage of Each Section in the Application

Figure 8
The Mean Usage of Each Component in the Application
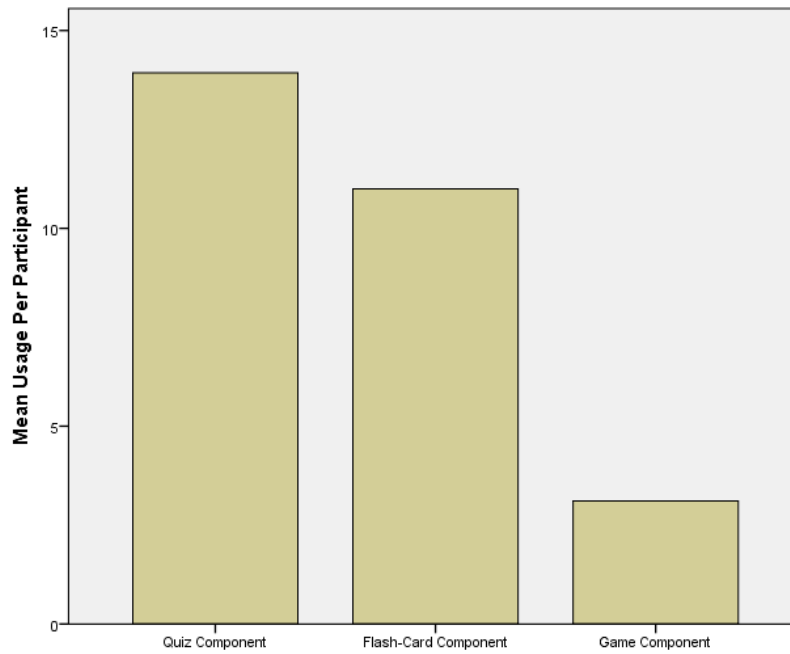
Several explanations could explain why the *quiz* section was the most visited, but the two of these that emerged from the interviews with participants indicated that feedback and control were recurring themes. During each quiz, participants received immediate feedback as to whether or not they answered the question correctly in form of a score increment.

Participants were not provided with the correct answer if they incorrectly made a selection; only a score that showed an incorrect answer had been made. Several of the participants indicated that they are used to quizzes as a form of assessment and felt comfortable doing them. As for control, participants had complete control over features of the quizzes that they customized them to focus on certain themes of idiomatic expressions or to set a specific amount of time for each quiz. They also completed short quizzes whenever they had a spare moment to use the application.

Exit Interviews

Learners expressed satisfaction about receiving feedback from *Idiomobile* with regard to their performance and/or interaction at any given point. Learning experiences involving interaction between humans and the machine are valued because they allow for risk-taking (Pennington, 1996; Skehan, 1998; Spears & Lea, 1992). This risk-taking refers to learners' ability to practice language without fear of losing face or embarrassment of saying the wrong the thing. Pennington (1996) argues that language learners are likely to produce more language through the activities made available by the computer, and in turn produce more comprehensible input and comprehensible output (Swain, 1985). Feedback also promotes control of the learning experience which is well documented in the literature (Watts, 1997; Wenden, 1991). Learners also indicated the feedback helped them figure the amount of practice and learning they needed. In addition, they reported that the feedback helped them be selective with the kinds of idioms and collocations to practice so more time is spent on the ones that are difficult to understand, which in turn allowed learners to take control of their learning. Another recurring theme from the follow-up interviews was the ability of *Idiomobile* to provide a challenge for learners to learn idioms and collocations. Several learners indicated that because they kept getting new idioms and collocations every time they took a quiz, they felt challenged by *Idiomobile* which in turn led to more practice. The following participant commented on the challenging aspect by saying (participants are referred to using pseudonyms):

> When you are showered with idioms, you can't tell what to remember or not. It made feel embarrassed that I don't know some of the idioms. When I was taking the quiz, I was feeling like I must beat the computer. So I tried to set a perfect score, so even when I get one wrong, I start over to retake another quiz. I sometimes got frustrated [that I can't get a perfect score] but it made me use it which is good. (Wardah)

Because *Idiomobile* could select idiomatic expressions from a large pool, participants kept getting new idioms and collocations, and this provided more reasons to continue practicing. Therefore, combining the interactive nature of *Idiomobile* and the difficulty of idioms and collocations was crucial in understanding why learners' usage of the quizzes and games was particularly high. Some learners across the groups indicated that they are used to taking quizzes and tests, and therefore, the quiz section was a familiar section to use. One student commented:

> Sometimes when I'm relaxed, I'd pick the phone and navigate through the application. Sometimes I used it for the sake of the study. But once I get there, I get hooked up! It's nice I liked it. I like taking quizzes. Every time I take a quiz, I feel that I am learning. (Dia)

Not all learners, however, liked quizzes. One learner conveyed anxiety about tests and quizzes, and even though learners were not told to use any specific section nor were they forced to use the quizzes, some learners still did not like the quiz format. They still indicated that it should remain as part of the application since it can provide feedback for students who are accustomed to testing. This student commented:

> I don't like evaluation. I like to learn without being assessed. I still think that you should definitely keep the quizzes. I have a test anxiety. I hate testing. I

think if the user spends more time with other sections, they will use them more than the quizzes. (Saad)

TOEFL Scores and Knowledge of Idioms and Collocations

To what extent did learners' proficiency in English and in particular their knowledge of idioms and collocations influence their use of the application? The Pearson correlation in Table 1 indicates that there is a positive significant correlation between the self-reported TOEFL score and the average scores on the quizzes the participants took in the application. The correlation coefficient between learners' self-reported TOEFL scores and the quizzes average score is positive ($R= 0.472$), and significant ($p< 0.05$).

Table 1
Correlation between Self-reported TOEFL Score and Quizzes Average Score

Correlations		
		Average Scores
Self-Reported TOEFL	Pearson Correlation	.472[**]
	Sig. (2-tailed)	.001
	**. Correlation is significant ($p<0.05$) (2-tailed).	

However, there could be other factors that may have contributed to this correlation. One of these is learners' usage of *Idiomobile*. Because of continued exposure to *Idiomobile* and in turn to idiomatic expressions and collocations, learners were likely to become familiar with their meaning. This can be examined in a multiple regression analysis to test whether self-reported TOEFL scores or usage of *Idiomobile* would predict the average scores on the quizzes. Based on the results of such a test in Table 2, the correlation coefficient for the self-reported TOEFL scores is low ($r=0.138$), and insignificant ($p=0.289$).

Table 2
Coefficients for Quizzes' Average Score and TOEFL and Usage of *Idiomobile*

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.374	10.719		-.128	.899
	Usage of *Idiomobile*	16.212	3.356	.624	4.830	.000
	Self-reported TOEFL scores	.023	.021	.138	1.073	.289
	a. Dependent Variable: Quizzes Average Score					

However, the correlation coefficient for usage of *Idiomobile* is positive ($r= 0.624$) and significant ($p=0.000$). This indicates that while the self-reported TOEFL scores correlated positively and significantly with average scores on the quizzes when taken separately, there was no significant correlation when taking into consideration usage of *Idiomobile*. This indicates that usage of *Idiomobile* was a better predictor of learners' average scores on the quizzes than the self-reported TOEFL scores. There may be several reasons why the analysis showed this pattern. First of all, the quizzes learners took mainly focused on idiomatic expressions and collocation, which are not the focus of the TOEFL test which measures learners' ability in reading, listening, speaking, and writing in academic English; thus, idiomatic expressions and collocations which appear more frequently in day to day conversations may not necessarily be reflected as frequently on the TOEFL test. Second, learners' usage of *Idiomobile* enabled them to go over a large number of idiomatic

expressions and collocations that may have eventually appeared on the quizzes, and they were therefore more likely to identify them on the quizzes.

In addition, this brings up an important point about the difficulty of idioms and the appropriateness of the application for learners with the lowest average TOEFL score. It can be argued that G4 participants felt overwhelmed with the difficulty of idioms and reasoned that learning idioms was not possible based on the quizzes and games. Or perhaps they felt the idioms were not necessary for them at their current learning stage and that their time could be better spent learning other aspects of the language.

General Mobile Phone Usage and Use of the App

Based on learners' reported daily average of phone usage on the questionnaire and usage of *Idiomobile*, there is a positive significant correlation between average daily phone usage and usage of *Idiomobile* as can be seen in Table 3. This correlation indicates that learners who use their mobile phones on a frequent basis are more likely to use learning applications like *Idiomobile*. It is important to note, however, that learners' usage habits of mobile devices would not necessarily transfer to all kinds of applications. For example, the G4 group had the highest reported average daily usage of mobile devices but used *Idiomobile* the least of all groups. On the other hand, learners in the G1 group who reported the lowest average daily usage of mobile phones used *Idiomobile* the most.

Table 3
Correlation between Average Daily Phone Usage and Usage of *Idiomobile*

Correlations		
		Usage of *Idiomobile*
Average Daily Phone Usage	Pearson Correlation	.336[*]
	Sig. (2-tailed)	.024
		*. Correlation is significant ($p<0.05$) (2-tailed).

This could be further explained by the characteristics of the G1 group, whose usage reflected characteristics of highly motivated learners. Research has shown that motivation positively correlates with success in the second language learning process (Baker, 1992; Gardner, 1985; McGroarty, 1996; Oxford, 1996; Oxford & Shearin, 1994; Samimy & Tabuse, 1992; Segalowitz & Freed, 2004). Highly motivated learners tend to spend more time in their learning process, are attentive during a given learning task, and tend to be high risk-takers in their learning, which enables them to use failure and success to their advantage. Masgoret and Gardner (2003) argue that there are certain characteristics that are found in motivated individuals: They spend effort, they are persistent, they focus on the task at hand, they enjoy the activity, experience reinforcement from successes, and are upset when they fail, and they make use of learning strategies to aid them in learning. Dörnyei (2000) considers motivation one of the two key components (aptitude being the second component) that determines to a certain extent the rate and success of foreign language learning. According to Dörnyei, not only does motivation provide the necessary impetus for learning, but it also sustains the effort for long term learning (p. 425). G1 participants exhibited many of the characteristics reported in the literature of highly motivated language learners. They are persistent and goal oriented, and this was obvious in a variety of ways. First, they had the highest amount of application usage of any group. They used the application far more than the rest of the groups. Their usage of the application reflects specific features, showing that they are goal oriented. For example, they are the only group whose participants customized the quizzes to include selected thematic groups of idiomatic expressions and collocations to be quizzed on.

Research has also shown that learners' degree of fluency in a language allows them to use a variety of learning strategies in their language learning process (Nunan, 1999). Thus, learners who are more proficient tend to have more learning techniques, and thus,

can use these learning strategies to their advantage. G1 participants focused only on taking quizzes and attempting to find ways to use idioms they learned. This suggests that they are aware of which idioms they would want to practice because they deemed them as important. It can also be argued that G1 users had more knowledge about idiomatic expressions and collocations and therefore could have used the tests for self-assessment. The interviews with G1 participants showed that they have employed far more strategies than participants in the other groups, such as finding ways to practice the idiomatic expressions in everyday situations.

The results indicate that a better understanding of learners' profiles will likely guide better mobile learning development. Mobile devices provide a perfect fit for learners who not only want to take control of but also personalize their learning experience learning experiences. According to Godwin-Jones (2011), mobile devices fit individualized informal learning because of their personal nature since users choose the apps to download to their device and control how often, when, and where they use them. Godwin-Jones also argues that not only academic learning vis-à-vis mobile devices should be encouraged, but also informal learning "when tied to learners' lives outside the academic environment" (p. 8). Other studies of mobile learning document this personalization feature which is an obvious characteristic of mobile learning and has significant implications for content creators, designers, educators, and decision makers. First, it indicates that understanding the learner's profile, i.e., learning habits, behaviors, and other characteristics helps identify the extent of the success of the mobile learning experience. In a study by Wong and Looi (2010) which examined participants' learning of English prepositions and Chinese idioms via mobile-assisted authentic content creation and social meaning-making, the authors found that while students were engaged in the mobile learning experience in class, they did not take the after-school informal learning activity as a serious endeavor. The authors argue that students did not perceive their mobile smartphone as a learning tool. Kukulska-Hulme (2010) documents in analyzing recent trends of learner-centered education how "learners are tentatively developing their own vision of how they wish to learn, through the ways they use technology to support learning." (p. 4) Therefore, the new tools created and the content that comes with these tools, according to Kukulska-Hulme, must address the needs of learners in the context of their learning experiences.

CONCLUSION

This study examined how four groups of language learners used a mobile application for learning idiomatic expressions and collocations. Data showed the quiz section was the most used by all groups, and that usage of the application declined over the course of the study when novelty of the app would eventually abate. Results indicated language proficiency could explain the difference between G1 and G4 in terms of the usage of the application. While G1 participants felt that learning idioms and collocation aligned with their long-term goals being teachers of English, G4 participants may have felt that idioms and collocations were overwhelming and not a priority in their language learning process. Findings also showed that usage of mobile devices in general correlates positively with usage of *Idiomobile,* although participants in the study who had the highest reported average daily usage of mobile devices used *Idiomobile* the least of all groups. On the other hand, participants who reported the lowest average daily usage of mobile phones used *Idiomobile* the most.

The purpose of this research was to explore the ways L2 learners use a mobile learning application to improve their learning of idiomatic expressions and collocations. The study showed that learners' profiles, in terms of their learning goals, proficiency level, and mobile use behavior, predicted their usage of the application to a certain extent. Nonetheless, other variables that were not examined in this research could also explain how learners' profiles could inform application content and design. An example of such variables would be the medium being used; it could be that students attend to learning using tablets and large form-factor devices more seriously, considering they provide more power and

screen real estate compared to mobile devices, as Stockwell (2013) findings of learners' preference to the PC over mobile devices as they undertake serious study. One of the shortcomings of this research is that the limited amount of time learners were given to interact with the application. However, the week-long use of the application provided some information as to which parts of the application were mostly used. Technical limitations, such as device memory limitations, limitation on video and audio, and general performance limitations, caused programs to lag are less of an issue on newer devices. Hence, with improved capabilities, exploring usage of mobile devices in a variety of contexts could help identify usage of mobile language learning applications.

While this study explored some aspects of mobile application usage, other aspects that have not been explored could be the focus of future research. In particular, mobile device usage ought to be examined from a longitudinal perspective to identify which variables influence app usage overtime. In addition, research could examine the mobile app landscape on learners' devices (to examine what actual apps are the most used apps and how often) which would yield valuable insights into the kinds of language learning apps users interact with. This study was a small-scale study; therefore, a study with a larger sample may be able to shed more light on usage patterns in a variety of contexts and with users of various learning backgrounds. Considering the diversity of mobile devices which range from tablets to other small form-factor smartphones, researchers could investigate how they are currently being used in classrooms and how they influence students' performance in class which can be valuable in identifying which of these might be relied on for serious language learning and how they can be used to motivate learners. Several research studies mentioned in the paper have found that while learners strongly believe in mobile learning, they do not still view it as the main source of language learning compared to the PC. An in-depth analysis of this aspect might yield findings that will contribute to better mobile language learning experiences.

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APPENDIX A: PRELIMINARY QUESTIONNAIRE

Dear Participant

I would like to ask you to help me by responding to the following statements. There are no "right" or "wrong" answers. I am interested in your opinions about the use of mobile devices in second language learning. Please answer all the questions sincerely in order to help me with this investigation. Thank you

How long have you been in the US?
☐ NEVER
☐ Less than a year
☐ 1-2 years
☐ 3-4 years
☐ 4-5 years
☐ 5-6 years
☐ 6-7 years
☐ More than 7 years

Please write down the date of your entry to the US
_____
How old were you when you started learning English?
_____
What is your first language?
_____
What is your recent TOEFL score? If you have not taken the TOEFL, please leave this field empty
_____
Please check which form of TOEFL you have taken
☐ PPT

☐ CPT
☐ IPT
☐ iBT

Which other languages do you know?

Language	Poor	Average	Fluent	Native-Like
Arabic				
Armenian				
Chinese				
English				
French				
German				
Hebrew				
Italian				
Japanese				
Korean				
Russian				
Spanish				
Turkish				
Other:				

On average, how often per day (in minutes) do you do any of the following?

	Never	15	30	60	120	180	240
Watch TV shows in English to help you understand spoken English.							
Listen to Podcasts to help you learn English.							
Interact with English native speakers to help you learn English.							
Participate in activities where English is practiced and/or spoken to help you improve your English.							
Read books in English other than your class books to help you learn English.							
Go online and surf the web to learn English.							
Play games online to learn English.							
Use your laptop to access exercises online to learn English.							

Read the news/blogs online to improve your English.							

On average, how often do you use your mobile phone per day to

	Never	Less than 15 minutes	15-30 minutes	45-60 minutes	1-2 hours	3-4 hours	More than 5 hours
Check your email.							
Surf the internet.							
Play games.							
Listen to music.							
Chat with friends.							
Send text messages.							
Read the news.							

On average, how often do you use any of these devices PER DAY

	Never	Less than 15 minutes	15-30	45-60	1-2	3-4	More than 5 hours
Mobile Phone							
iPod(MP3)							
PDA (Personal Digital Assistant)							
Portable Game							
Mini-Laptop							
PC							
Other							

Please respond to the following statements. There are no "right" or "wrong" answers. I am interested in your opinions about the use of mobile devices in second language learning. Please answer all the questions as accurately as possible. Thank you

	Strongly Agree	Agree	No Answer	Strongly Disagree	Disagree
Mobile devices can be used to help second language learners in their language learning.					
Teachers should allow students to use mobile devices during class for language learning purposes.					
Dictionaries on mobile device help me in learning English.					
Mobile games are a good way for me to learn English.					
I consider myself to be a motivated second language.					
My main goal of learning English is to be able to communicate with other people.					

My main goal of learning English is to succeed in school.					
My main goal of learning English is to succeed in my work.					
Other Goals (please specify)					

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