

**CALL to Arms: Generations Clash over Digital Technology in the  
Foreign Language Classroom**

Sandor Danka  
Assumption University, Thailand

### Abstract

Is a smart phone a toy or a tool? Students can't get enough of it – after all, social media notifications and viral videos do take time to reflect on – while teachers, quite understandably, are dismayed to see an excellent educational tool used purely for entertainment. This paper posits that these two concepts are not mutually exclusive. It proposes a possible common ground, 'edutainment,' the integration of interactive mobile technology with the classroom for new opportunities to effectively achieve learning objectives in a light-hearted spirit. This research study describes the attitudes and intentions of 121 Thai English as a Foreign Language (EFL) university students towards a playful, competitive smart phone application, its ease of use and perceived benefits to learning. Results of a cross-sectional examination through a paper-based, 4-page questionnaire seem to indicate general acceptance, widespread use and an altogether positive attitude to the software. The paper concludes by highlighting student impressions of its relevance to their studies and offering recommendations for further integration of digital technology into foreign language classrooms.

**Keywords:** mobile technology; educational smart phone app; computer-assisted language learning; EFL.

## Introduction

Students text, watch videos and update social media. A lecturer facilitates understanding of content through relevant activities. With no overlap, there is no conflict of interest and peace prevails in the classroom. However, teachers resent the recreational use of mobile devices, saying it is detrimental to learning, while learners complain when their instructors prevent them from posting pictures of last night's dinner. Today's students spend their days going from one screen to the next: a TV at home, GPS navigation in the car, a tablet/iPad for fun, a laptop computer for homework, and of course, a smart phone throughout. When in school, however, they get in trouble if any of these "screens" leave their school bags. If they break the rules and have to be separated from these devices, even if only till the end of the day, the emotional pain they feel amounts to that of losing a limb – which is essentially what a mobile phone has become for many of them. This paper posits that there exists a common ground, a learning-centred intersection where a digital mobile device is an asset, not a liability. It examines student behavior and perceptions about an interactive multimedia software application in the specific context of an international university in Thailand.

The concept of digital technology integration per se is not new at this institution: every classroom is equipped with a projector and a computer with Internet connectivity. This study aims to document an educational initiative where both parties, teachers and students alike, step out of their comfort zone. Instructors have to accept that they are not the sole educators in the classroom, and students need to take responsibility for their own learning, to realise that a smart phone can offer much more than pure entertainment. This something old, something new approach to education is often called blended learning. While acknowledging the many different definitions of this concept, this paper follows Sharma & Barrett's (2007) interpretation, that of a combination of traditional, face-to-face teaching with a supplementary online component. Its focus, beyond varying the modality of course content delivery, is the efficient and meaningful integration of the technological and face-to-face elements of the teaching/learning experience (see Tucker, Wycoff, and Green, 2017). One of its many pedagogical advantages is that it moves learning beyond the classroom. By providing instant access to authentic material outside the class, computer-assisted language learning (CALL) allows students to benefit from "circumstances that they [generally] do not associate with learning" (Kukulska-Hulme, 2009), i.e., time spent waiting for a bus, for their friends, or to be seated at a restaurant, which would otherwise be lost for studying. Another advantage is that a computer never gets distracted, bored or tired of being asked the same questions, of having to repeat the same explanations over and over again (Nunan & Lamb, 1996). In addition, this indefatigable virtual tutor may provide personalized training or much-needed remedial practice to struggling learners.

## Literature Review

This paper uses Davis's (1986) *Technology Acceptance Model* (TAM) as its conceptual framework. Although this model is widely used in social psychology and business management, the author believes it is suitable for computer-related educational research purposes as well. Designed to explain how new technology is received and used, it identifies two specific beliefs, perceived usefulness and perceived ease of use, a combination of which first affects attitudes and behavioural intentions, then leads to actual use (Figure 1).

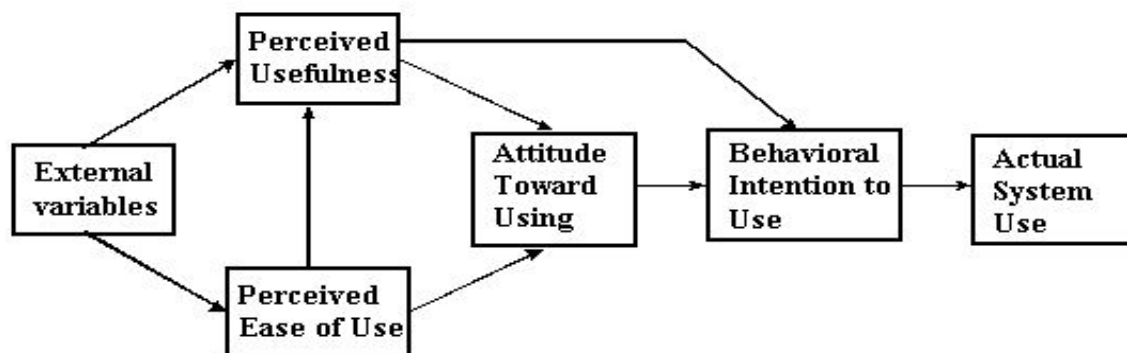


Figure 1: Technology Acceptance Model. Adapted from Davis (1986, 1989).

Davis, Bagozzi and Warshaw (1989, p. 985) defined perceived ease of use as “the degree to which [a person expects a particular] system to be free of effort.” The authors also described perceived usefulness as “the degree to which [a person believes that using a particular] system will enhance his or her job performance.” External variables include system design, task and user characteristics. These factors were further refined by Venkatesh, Morris, Davis, and Davis (2003), who proposed a *Unified Theory of Acceptance and Use of Technology* (UTAUT). This model extends the scope of intention to use by three major factors: performance expectancy, effort expectancy and social influence. In the current paper, performance expectancy refers to students hoping that the software will help them pass exams; effort expectancy means that it does so without an unreasonable amount of time and effort; and finally, social influence is interpreted as peer pressure, whether others view system use as beneficial or unnecessary.

Perceived benefits are a powerful factor in technology use. As Dörnyei (2007) points out, “it is highly unlikely that every student will do his/her best for a project in which they have little interest and which has no direct bearing on their school grades” (p. 189). In an immediate, often unconscious analysis, the cost/benefit ratio of an assignment is evaluated to decide how much time and effort is needed to complete it (Lankshear & Knobel 2002, as cited in Purushotma, 2005). If a student is not convinced about the ease and usefulness of an activity, they will be less inclined to take part in it. Perceived benefits of using technology in the class include potentially increased efficiency and convenience. Hubbard (2009), for example, posits that the online component improves learning efficiency, learning effectiveness, and is more convenient. Kukulska-Hulme (2009) concurs, stating that computer-assisted tools and teaching methodologies can indeed be very effective, especially for small-group collaborative assignments, e.g., in the case of Quizlet, flashcard design.

The *digital divide*, according to the Merriam-Webster dictionary, encompasses “economic, educational, and social inequalities between those who have computers and online access and those who do not.” Warschauer (2002) extended the original scope of the concept and included access to additional resources: issues of content, language, education and literacy. By this definition, all students who participated in this survey were digitally literate. The overwhelming majority had a mobile phone with a wireless or 3G/4G subscription package to the Internet. They were encouraged to learn with the digital version of part of their textbook. All were reasonably fluent speakers of English. Finally, they could reasonably be expected to be familiar with touch-sensitive smart phone screens and swipe/tap navigation within software applications.

Warschauer, however, did not take into account the importance of generations. Today's cohort of young learners is sometimes referred to as the *Millennials*. Born since the mid-1980s, after the emergence of the Internet, they live in a screen-saturated world (Chamberlin-Quinlisk, 2012, p. 152) with the World Wide Web at their fingertips. Their learning styles are significantly different from the generations preceding them (Black, 2010; Eisner, 2011; Nicholas, 2008; Phillips and Trainor, 2014). Through constant access and exposure, their academic skill set, abilities and expectations, even their preferred channels of communication, are mostly technology-based. Not accommodating their learning styles could lead to “a failure to build a bridge between the technological world millennials live in and the classrooms we expect them to learn in” (Considine, Horton, & Moorman, 2009, p. 473). Smart phone use in classrooms has reached a critical mass, a level where restricting it is not just a Herculean effort, but is also counter-productive. This digitally tuned-in expert generation expects a learning experience that is fundamentally different from that of their parents, and when they are refused, they resist and rebel.

Technological innovations are especially susceptible to fads, of getting popular very quickly, then disappearing just as fast. Gartner's *Hype Cycle* ([www.gartner.com](http://www.gartner.com)) graphically describes the expected lifespan and popularity of fresh initiatives. This model is typically used in the business world, but this author proposes adopting it for educational research to highlight and predict potential obstacles to classroom technology integration. The curve begins with a “technology trigger,” the introduction of a new product/program/process, often accompanied by bold promises. People are inspired and form “inflated expectations” of what it is rumoured to be capable of. When the product cannot live up to these high hopes, people get discouraged and many of them abandon it altogether. Later, with reasonable expectations and more time spent exploring the program's capabilities, “enlightenment,” and finally, “productivity,” i.e., widespread use occurs.

Another factor to potentially influence the diffusion of technological classroom innovation is cognitive bias. Coined at least a century prior and used informally in politics, Leibenstein (1950) introduced the term *bandwagon effect* for economics to describe following the example of others, acting or thinking the way they do. The outcome of many political or marketing campaigns revolves around the concept of conformity: the more people think or act in a certain way, the higher the probability that others will follow suit. The successful implementation of educational technology may also be described by the psychology behind Gartner's *Hype Cycle* curve. Millennial adolescents and young adults are very sensitive to fashion, especially if influential peers are perceived as having an advantage by using a certain product. If interest can be sustained among students, if more of them “jump on the bandwagon,” and recognize its benefits, this trendy new mode of learning may eventually attract more and more voluntary users to achieve general acceptance and widespread adoption (Aldosari & Mekheimer, 2013).

To sum up, technology acceptance literature seems to agree that integrating a technological component into face-to-face teaching can positively influence student learning. In addition, it could also offer a suitable theoretical background for practical application in the English as a Foreign Language (EFL) classroom. This research paper seeks to present a framework that measures the extent to which CALL is relevant to 121 undergraduate students of the millennial generation and to draw conclusions applicable to a larger population of university-age EFL learners in general. To make digital learning more accessible and attractive to participants, the study was designed to use as its medium a playful software application with custom-made content that it was hoped would serve students' current, real-life needs: academic vocabulary.

## Context

Decontextualized coursework (Egbert, Paulus & Nakamichi, 2002, as cited in McMurry, Rich, Hartshorn, Anderson & Williams, 2016) poses a major threat to both motivation and achievement. Awareness of reasons behind course content decisions may facilitate student involvement. To avoid student sentiments that the word lists they find in each unit of their textbook are *ad-hoc* selections of unrelated lexis, it is important they realize that in the context of tertiary studies, success requires knowledge of academic vocabulary. Sun and Yang (2012) provide an in-depth overview of previous studies to support the argument that “for vocabulary acquisition to occur, a certain degree of comprehension must be achieved.” This paper argues that it is not comprehension that comes first; quite the opposite. It proposes that for undergraduate academic success in a foreign language environment, the more appropriate sequence is vocabulary first, which in turn will facilitate comprehension.

Schmidt (2010) explains academic vocabulary as “non-high-frequency vocabulary common across academic disciplines.” To further elaborate, Nagy, Townsend, Lesaux and Schmitt (2012) add to this definition that it is abstract, can be either oral or written, and is tailored for discussion of “disciplinary content” at educational institutions (p. 92). Assumption University (AU) has an international, multi-cultural faculty and student body; therefore, apart from foreign language courses, the medium of instruction is English. Consequently, familiarity with interdisciplinary phraseology is expected from students who need to interpret, analyse and critically reflect on subject matter areas in faculties as diverse as Communication Arts, Business Management, Law or Nursing.

Academic vocabulary then, by these definitions, has a heavy learning burden (Nation, 2006). It requires explicit instruction and focused, conscious learning, often made more problematic by a lack of context. This inherent difficulty is in stark contrast with the relative usefulness for eventual success at university. In order to avoid guesswork during lectures, foreign language learners need to repeatedly meet a word in context until they can comfortably use it themselves – at least 5–16 exposures, according to Nation (1990). In English for Academic Purposes (EAP) courses of increasing difficulty, AU students acquire the skills necessary to successfully meet their degree requirements. A fundamental criterion for the selection of course content, including vocabulary, is to improve comprehension of scholarly texts and to increase the quality of students’ written work and interpersonal communication skills. The majority of these word families come from the Academic Word List (AWL) developed by Coxhead (2000). During mid-term and final exams, a selection from each set of words is checked as part of students’ progressive assessment. When they can confidently form meaningful, grammatically correct sentences, they have mastered the lists and can “produce coherently structured written assignments” (Coxhead, n.d.).

This research study used a multi-platform software application called Quizlet to investigate student attitudes towards EFL-related technology. In a separate but related survey three months earlier, students’ self-reported digital technology use had been found to be restricted to electronic dictionaries and occasional Google searches for course-related information. By offering a multimedia tool that they could access anytime and anywhere, from smart phones through tablets to personal computers, it was believed that this new approach would provide a significant enough departure from teacher-fronted vocabulary activities, as well as from students’ habitual purposes, i.e., leisure and entertainment, of mobile device use.

Quizlet was chosen for reasons of convenience, relevance and interactivity. Although many other similar apps are available, the author had been introduced to it in a conference plenary session by keynote speaker Pete Sharma (co-author of *Blended Learning*, 2007). The software creates a shortcut icon on users' mobile devices, thus providing convenient, instant access to academic lexis saved offline, on the phone's memory card. Drawn from a database originally compiled by their instructor, the program randomly presents and helps users practise the spelling, meaning and usage of target vocabulary from their course book. Secondly, the Quizlet website and mobile app was expected to be compatible with the current generation of learners and their learning styles. Nicholas (2008) points out that millennials expect communication and instruction via technology; therefore, by suggesting a study option that resonated with them, it was hoped that its adoption ratio would be high, i.e., more students would be interested in giving it a try. Short rounds of memory games, sentence completion or spelling bees could turn cyclical, spaced revision into a fun activity. After all, as Burston (2014) argues, outside distractions make mobile-based language learning better suited for short bursts, rather than longer stretches of concentrated attention. Quizlet employs an interactive, almost game-like approach, and the satisfaction of being at the top of the leader board in one of its mini-competitions may perhaps further motivate students to playfully acquire academically relevant English vocabulary. Once students realise its value as a learning tool, this new format of content delivery and review may ease the burden of memorizing long lists of complicated words.

## Methodology

### Objectives

This study attempts to find positive relationships between students' beliefs and actual use of the target software, Quizlet. It investigates how this mobile application supports educational goals, especially in the context of undergraduate foreign language learners from the millennial generation. Although examining the attitudes of all stakeholders (i.e. learners, teachers and school administrators) may offer a more comprehensive picture, the focus of this paper is restricted to analysing the students' perspective, their expectations, opinions and reflections. Learners' insights were hoped to reveal positive relationships for the research questions and hypotheses of the study, which are outlined below. Instructors and their beliefs concerning the impact of adopting mobile technology, as well as curriculum design decisions and policy recommendations by school administrators are hoped to be explored in a follow-up study.

The present study addresses the following research objectives:

1. Identify the relative significance of factors that lead to Quizlet use.
2. Explore how beliefs, attitudes and intentions predict actual usage.
3. Consider whether access to the software drives actual usage.
4. Actively involve participants in content creation.

### Hypotheses

#### **H1: Perceived ease of use positively influences attitude toward use.**

Digitally literate millennials expertly handle mobile software that requires them to tap or swipe items on a smart phone screen. Familiarity with navigating within these applications was expected to make Quizlet easy to use. Experience with similar program designs and modes of manipulation, and the fact that learning to use this program requires only a moderate amount of effort, are three factors that were expected to characterize student impressions.

### H2: Perceived usefulness determines attitude toward use.

Although a crucial factor in itself, a user-friendly interface does not guarantee acceptance. It is likely that students preparing for examinations focus on end results, on usefulness instead. Expected benefits of educational software must also be taken into consideration when attitude toward use is defined.

### H3: Attitude toward using leads to increased intention to use.

Positive beliefs about the ease of use and usefulness of a program, or satisfaction with its demonstrated features will not necessarily lead to intentions. A user may acknowledge the benefits of an activity, but still be unwilling to try it themselves. The next hypothesis posits a close correlation between positive attitudes and a student's intention to use Quizlet.

### H4: Intention to use is directly and positively associated with actual use.

Regardless of a user's willingness regarding a specific program, he or she may still not get around to using it. Time constraints, other commitments, or forgetfulness are important factors that negatively affect whether a user launches the app. Conversely, a person will not use a program voluntarily if they are not convinced of its merits.

### H5: Satisfied active users will recommend Quizlet to other students.

In a blended classroom, information flows in multiple directions. Students help each other (S2S), and sometimes even advise their technologically less inclined instructors (S2T). In addition, if they are satisfied with a program, they might tell their friends in other classes about it. During Phase 1, they were not overtly encouraged to share their experiences, but two items of the questionnaire in Phase 2 specifically asked about the future likelihood of recommending Quizlet to others.

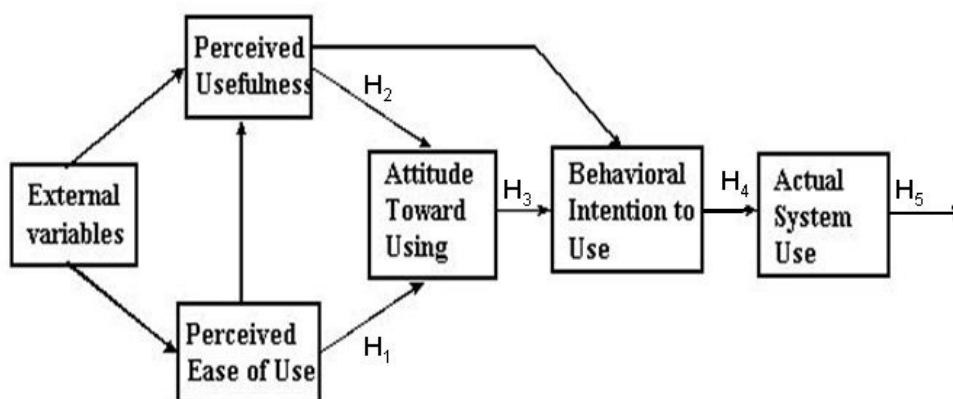


Figure 2: TAM model for Quizlet with hypotheses.

### Population Design

A total of 121 first- and second-year EFL learners took part in this study. They were enrolled in an undergraduate, intermediate-level course at Assumption University, Bangkok, Thailand. Participant selection followed a convenience sampling model: the assistance of faculty members was requested, and all the students in these faculty's randomly assigned classes were surveyed.



## Data Collection Design

Data for this project was gathered between mid-October and early November 2015. During the initial orientation phase, students took part in a 20-minute live demonstration, were shown the features of the software, and were assisted in downloading, installing and registering the application on their mobile devices. Phase 2 took place about one week later. In compliance with ethical guidelines, each participant provided informed consent by signing a form which outlined the purpose of the study and highlighted its voluntary and confidential nature. Pages 2-4 of this self-completed questionnaire package, which on average took about 15 minutes, contained a total of 35 descriptive, factual, behavioural and attitudinal questions. These questions were in English and responses were expected to be in English. They were organized under the headings: Biographical Information (6 items, structured), Actual Use (9 items, Yes/No), Perceived Ease of Use (6 items, Likert-scale), Perceived Usefulness (4 items, Likert-scale), Attitude toward Using (6 items, Likert-scale), and Intention to Use (4 items, Likert-scale). Two questions in the Likert-scale categories were reverse coded to avoid response bias, and these scores were inverted during evaluation.

Between Phases 1 and 2, i.e., during the one-week experimental period, students were encouraged to freely explore the program and to form opinions about its strengths and weaknesses.

## Results

Raw data from the questionnaires was processed using IBM SPSS 23.0 analysis software. Descriptive biographical statistics of the participants are presented in Table 1.

Table 1: Descriptive respondent statistics.

Respondent characteristics	Frequency	Percentage
<i>Gender</i>		
Male	41	33.9
Female	80	66.1
<i>Age (in years)</i>		
17-18	3	2.5
19-20	107	88.4
21-22	9	7.4
23-24	2	1.7
over 25	0	0
<i>Owns a smart phone</i>		
Yes	121	100
No	0	0
<i>Has mobile Internet</i>		
Yes	119	98.3
No	2	1.7
<i>Hours spent online per day</i>		
less than 1 hour	2	1.7
1-3 hours	19	15.7
4-6 hours	52	43.0
over 6 hours	48	39.7

Cronbach’s alpha values were all above the recommended benchmark of 0.7, proving the reliability of the model. Exploratory Factor Analysis batteries returned .822 for Kaiser-Meyer-Olkin (KMO) measure for sampling adequacy (checking for variance among variables, with suggested values above 0.5), and 1265.659 for Bartlett’s test of Sphericity at the .000 significance level. According to Factor Extraction and Eigenvalues, the eight strongest factors accounted for 62.684 % of total variance overall. Finally, a Multiple Ordinary Least Square Regression sought to identify possible cause-and-effect relationships between dependent variables (Attitude, Intention and Actual Use). Figure 3 shows the results of hypotheses testing, relationships between variables, and their significance.

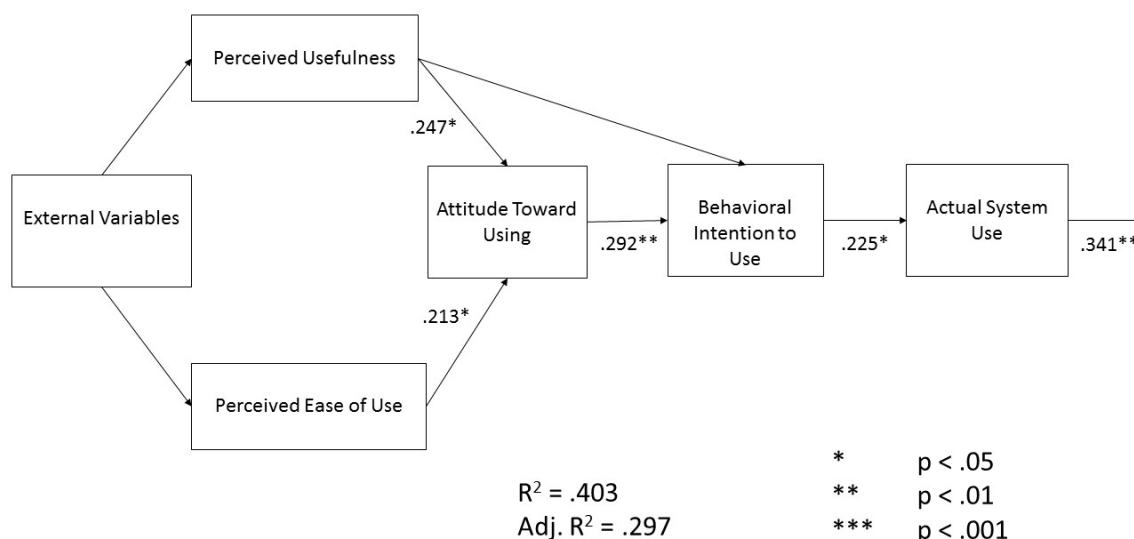


Figure 3: Hypothesis diagram and test results.

Actual Use is a reliable indicator for educational technology acceptance. Tables 2 and 3 summarize the results of the Actual Use regression equation, with statistically significant evidence for both current and projected system use.

Table 2: Regression analysis for Actual use (1).

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.397	1	6.397	8.241	.005 <sup>b</sup>
	Residual	92.380	119	.776		
	Total	98.777	120			

Table 3: Regression analysis for Actual use (2).

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.880	.176		10.669	.000
Did you use Quizlet during the past 7 days? (Yes=1; No=0)	.568	.198	.254	2.871	.005

The frequency graph in Figure 4 presents actual system use (by student numbers/percentages) in a visual form, highlighting student groups that are of special interest for long-term success.

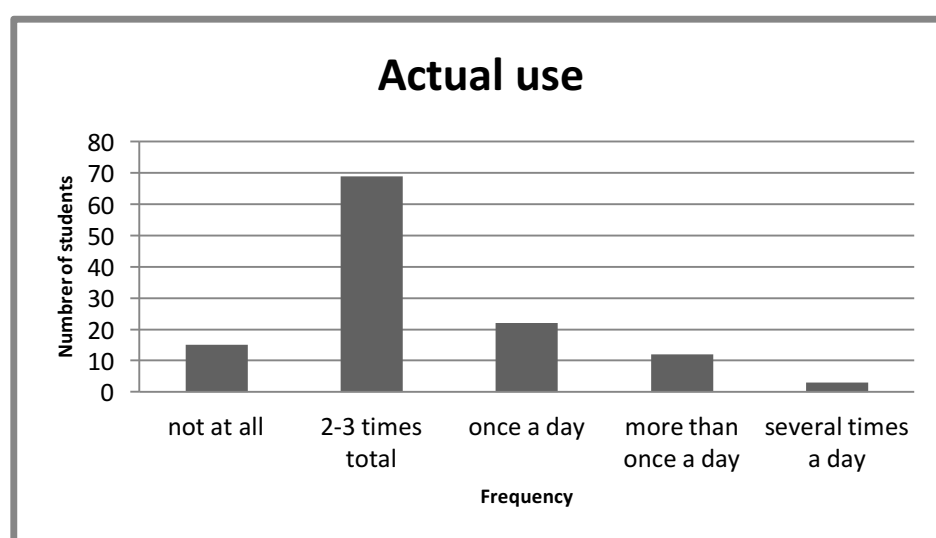


Figure 4: Actual use.

Actual use data is presented in Tables 2 and 3, as well as in Figure 4. The p-value for F is .005 (very significant), which means that no sampling error occurred during the procedure. The unstandardized  $\beta$  value of .568 (at the  $p = .005$  significance level) suggests that the slope of the equation for Quizlet users is positive. In other words, the more often a student uses the software, the more likely it is that he or she is going to return to it.

Quizlet allows registered users the freedom to create card sets in any language. Another reliable and perhaps slightly more accessible indicator for Actual Use data is if students design their own word lists, especially if they do so without being prompted by their instructor. Several participants figured out how to modify the original English input, generating personalized sets in their mother tongue. As computer text-to-speech and an auto-play feature are both available for several languages, a smart phone and a pair of Bluetooth headphones were all they needed for a hands-free audio dictionary to review the target vocabulary lists without their mobile ever having to leave the school bag. Several students reported using, but not necessarily insisting on this audio feature, perhaps indirectly implying that computer text-to-speech synthesis is not yet advanced enough for learning English pronunciation.

## Discussion

Over 98% of participating students had a mobile internet package, and by their own account, 43% spent between 4-6 hours a day online, with almost as many (39.7%) admitting to regularly spending over 6 hours every day on the World Wide Web. Since Quizlet is free to download and use, by having a phone with Internet connectivity, today's language learners can overcome the single most important obstacle to technology integration—access. Although the Quizlet websites and students' target word lists can also be accessed on a personal computer, one of the implied objectives of the study was to focus on mobile devices that students never seem to part from. Consequently, it appears that schools no longer need language laboratories, or to invest in expensive IT infrastructure: every student comes to school with a mobile device that can facilitate informal language learning both in and outside the classroom – even in cyberspace.

### Summary of Hypothesis Testing and Research Objective Outcomes

- Hypothesis 1: Supported. Regression analysis found a strong correlation between perceived ease of use and attitude.
- Hypothesis 2: Supported. Findings confirm a strong correlation between perceived usefulness and attitude.
- Hypothesis 3: Supported. Results indicate a strong correlation between attitude and intention to use.
- Hypothesis 4: Supported. Participants' intention to use the software was measured at the  $p < .05$  significance level.
- Hypothesis 5: Supported. Satisfied, active users would tell others about the software.

Research objective 1 sought to identify the relative significance of factors that lead to system use. This investigation used two core variables as its starting point, Ease of Use and Perceived Usefulness. Of the two, Perceived Usefulness proved to be stronger, suggesting that even when students struggle, they willingly tolerate a steep learning curve if they can expect benefits at the end.

Research objective 2 addressed how beliefs, attitudes and intentions predict actual usage. Results indicate that except for a small minority, slightly over one-tenth of users, if students find the software easy to use and have positive attitudes toward it, they will indeed use it for vocabulary study before exams.

Results for research objective 3 seem to suggest that it would be a mistake to equate access with success. Students do not use educational software just because it is available to them. Constant motivation and encouragement are needed, as are teacher efforts to monitor that when in the classroom, phones are used for educational purposes only.

Research objective 4 set out to actively involve students in materials design. The threat of disciplinary action is a poor, short-term motivator. Being creatively involved in content creation, on the other hand, may instill in students a long-term perspective, getting them one step closer to their future goals with English. Encouraging students to participate in making Quizlet sets on their own may result not only in a sense of ownership, but also in increased willingness to actively learn, rather than passively consume content that is tailor-made for (and by) them.

## Conclusions and Limitations

This paper sets out to explore student beliefs, intentions and behavioural attitudes toward a multimedia software application called Quizlet. It focuses on perceptions of undergraduate EFL learners regarding the contribution of a specific digital educational technology tool to the curriculum and to their learning objectives. There exist, however, several pedagogical and procedural limitations that need to be acknowledged when interpreting the findings of this study. First, its cross-sectional methodology implies a strictly exploratory focus. Without a pre- and post-test or comparison/control groups, it does not claim to evaluate or enhance the effectiveness of digital learning within its context. Therefore, it is possible that a quasi-experimental research design with a follow-up round of data collection may offer a complementary perspective.

Next, the study made a few assumptions about its participants which may not be valid universally. For example, it expected learners with smart phones (100% of the population) to have constant access to the Internet, which, except for two students, they all did. However, it would be potentially misleading to assume that constant, instant access means unlimited time that students would be willing to devote to educational purposes. A teacher can, at best, encourage independent learning and provide engaging content that students find useful for their studies. Moreover, the fact that every student can afford the costs of buying a mobile device or the expenses of a monthly Internet subscription was taken for granted. In other contexts, however, these financial burdens may be important constraints that influence final results.

Lastly, Figure 4 identifies 12.4% of the target population that reported no use whatsoever. Reasons for use/non-use were not part of the original survey; therefore, the motives of this group of under-motivated students are unclear at the moment. Future investigations of student resistance would be a possible complementary study to fill the gap in understanding left by this research project. In addition, there are three occasionally overlapping factors that may also affect Quizlet use: deadlines, scope and logistics. Firstly, students are less inclined to practice if the exam is weeks away, but a test the following morning may provoke a last-minute effort, despite knowing that cramming the night before rarely results in long-term retention. A quick flip through cards or a mini-game in Quizlet, on the other hand, takes but a few minutes, and these regular, cyclical review sessions may bring about long-term benefits.

The second area that would benefit from further scrutiny is scope. This research project involved 8 out of a total of 91 classes in the English II program offered in that semester. There were 121 respondents, covering 5.49 % of the target population, thus satisfying requirements for external validity. At first glance it would seem that results obtained here could be generalized for the entire English II student body. However, a shift in learner and teacher attitudes and behaviours cannot be expected to come about overnight, nor without help from faculty and administrators – most likely through a relatively large investment of energy and enthusiasm. Gartner's *Hype Cycle* begins with a sharp rise; if this surge could be sustained with the help of the bandwagon effect, if Quizlet could become both trendy and popular, seen as an effective contributor to long-term academic success, this positive image would probably support its widespread adoption.

Finally, the logistics of integration must also be considered when proposing changes to curricula. Following institutional guidelines, teachers will have to make decisions about the extent to which they wish to make Quizlet a part of their classroom routine. Should they use the official academic word sets or create their own? In an otherwise tightly packed syllabus,

how often and for how long should they let students “play around” on their phones? Should they devote valuable class time to Quizlet games at all, or assign vocabulary learning as homework and count on students being responsible enough to do it? These are all questions that will need to be answered during continued evaluation and improvement of the Quizlet initiative.

### **Recommendations**

Offering instant results, creating inflated expectations among students, faculty or school administrators would be unrealistic, unwise and probably untrue. Quizlet integration should be perceived as an extension to the current AU teaching/learning framework where technology-assisted language teaching is already expressly emphasised. Giving students an option to take English language learning into their own hands – literally speaking – making allowances for their personal digital devices and the resulting attitude shift, on the other hand, may yield positive effects. Pedagogical implications that point towards recommendation to adopt should include learner autonomy, interactivity, automatic error correction, immediate feedback, and the fact that the rationale behind the activity (acquiring academic vocabulary) is never in doubt for anyone concerned.

Results of this study may be interpreted as that of a needs analysis, with findings that seem to support a move toward adoption. Its subjects are members of the millennial generation who are empowered to create and encouraged to be responsible for their own learning. Working in teams on academic vocabulary fosters interpersonal skills; networking socially offers a chance to creatively and collaboratively approach problem-solving, while having a degree of control over subject matter, however small, inspires them because they feel their input is valued, that they are taken seriously.

Heterick and Twigg (2003) assert that a blended learning experience is mutually beneficial for both students and their *alma mater*. Reporting on the findings of a survey of student performance and achievement carried out in 30 academic institutions in the United States, they indicate “increased course completion rates, improved retention, better student attitudes toward the subject matter, and increased student satisfaction.” This paper makes no such bold claims; it does contend, however, that Quizlet integration has the potential to make a modest contribution to the efficiency of teaching/learning English. The ultimate question is not *whether* Thai academic institutions should augment existing blended and online curricula, but *when*. A methodology that incorporates multi-modality and self-directed learning reaches students anytime, anywhere and can also convince previously resisting faculty of its value. As everybody in the classroom becomes aware of its benefits, this personalized, constantly updated training platform can help prevent a conflict of interest, a clash of generations: effectively engaged Millennials will feel that teachers finally speak their language.

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## References

- Aldosari, H. S., & Mekheimer, M. A. A. (2013). The bandwagon effect in the adoption of e-learning systems in language learning. *GSTF Journal on Computing*, 2(4), 61–81.
- Black, A. (2010). Gen Y: Who they are and how they learn. *Educational Horizons*, 88(2), 92–101.
- Burston, J. (2014). MALL: The pedagogical challenges. *Computer Assisted Language Learning*, 24(4), 344–257. <https://doi.org/10.1080/09588221.2014.914539>
- Chamberlin-Quinlisk, C. (2012). TESOL and media education: Navigating our screen-saturated worlds. *TESOL Quarterly*, 46(1), 152–164. <https://doi.org/10.1002/tesq.7>
- Considine, D., Horton, J., & Moorman, G. (2009). Teaching and reading the millennial generation through media literacy. *Journal of Adolescent & Adult Literacy*, 52(6), 471–481. <https://doi.org/10.1598/JAAL.52.6.2>
- Coxhead, A. (2000). A new academic word List. *TESOL Quarterly*, 34(2), 213–238. <https://doi.org/10.2307/3587951>
- Coxhead, A. (n.d.). *An introduction to the academic word list*. Retrieved on July 7, 2017 from [https://www.academia.edu/6556194/An\\_Introduction\\_to\\_the\\_Academic\\_Word\\_List\\_What\\_is\\_the\\_Academic\\_Word\\_List](https://www.academia.edu/6556194/An_Introduction_to_the_Academic_Word_List_What_is_the_Academic_Word_List)
- Davis, F. D. (1986). *A technology acceptance model for empirically testing new end user information systems: Theory and results* (Unpublished doctoral dissertation). Massachusetts Institute of Technology: Cambridge, MA.
- Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13, 318–339. <https://doi.org/10.2307/249008>
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science Journal*, 35(8), 982–1003. <https://doi.org/10.1287/mnsc.35.8.982>
- Dörnyei, Z. (2007). *Research Methods in Applied Linguistics*. Oxford: Oxford University Press.
- Eisner, S. P. (2011). Teaching Generation Y college students: Three initiatives. *Journal of College Teaching and Learning*, 1(9), 69–84.
- Gartner's Hype Cycle. Retrieved on July 27, 2017 from <http://www.gartner.com/technology/research/methodologies/hype-cycle.jsp>
- Heterick, B., & Twigg, C. (2003). *The learning marketplace*. Retrieved on July 7, 2017 from <http://www.thencat.org/Newsletters/Feb03.html>
- Hubbard, P. (2009). *Computer assisted language learning: Critical concepts in linguistics*. London: Routledge.
- Kukulska-Hulme, A. (2009). Will mobile learning change language learning? *ReCALL*, 21(2), 157–165. <https://doi.org/10.1017/S0958344009000202>

- Leibenstein, H. (1950). Bandwagon, snob and Veblen effects in the theory of consumers' demand. *Quarterly Journal of Economics* 64(2), 183–207. <https://doi.org/10.2307/1882692>
- McMurry, B., Rich, P. J., Hartshorn, K. J., Anderson, N. J., & Williams, D. D. (2016). Criteria language teachers use when selecting CALL technologies. *The Journal of Language Teaching and Learning*, 6(1), 49–65.
- Merriam-Webster Dictionary Online*. Available at <https://www.merriam-webster.com>
- Miller, R. L., Acton, C., Fullerton, D. A., Maltby, J., & Campling, J. (2009). *SPSS for social scientists* (2<sup>nd</sup> ed.). Basingstoke: Palgrave Macmillan.
- Nagy, W., Townsend, D., Lesaux, N., & Schmitt, N. (2012). Words as tools: Learning academic vocabulary as language acquisition. *Reading Research Quarterly*, 47(1), 91–108. <https://doi.org/10.1002/RRQ.011>
- Nation, P. (1990). *Teaching and learning vocabulary*. New York: Newbury House.
- Nation, P. (2006). Vocabulary: Second Language. In Brown, K. (Ed.). *Encyclopedia of Language & Linguistics* (2<sup>nd</sup> ed.) (pp. 448-454). Amsterdam: Elsevier. <https://doi.org/10.1016/B0-08-044854-2/00635-0>
- Nicholas, A. (2008). Preferred learning methods of the millennial generation. *Faculty and Staff – Articles & Papers*. Paper 18. Retrieved on July 7, 2017 from [http://digitalcommons.salve.edu/cgi/viewcontent.cgi?article=1017&context=fac\\_staff\\_public](http://digitalcommons.salve.edu/cgi/viewcontent.cgi?article=1017&context=fac_staff_public)
- Nunan, D., & Lamb, C. (1996). *The self-directed teacher: Managing the learning process*. Cambridge: Cambridge University Press.
- Phillips, C. R., & Trainor, J. E. (2014). Millennial students and the flipped classroom. *Journal of Business and Educational Leadership*, 5(1), 102–112.
- Purushotma, R. (2005). Commentary: You're not studying, you're just... *Language Learning & Technology*, 9(1), 80-96. Retrieved on July 7, 2017 from <http://llt.msu.edu/vol9num1/purushotma>
- Schmitt, N. (2010). *Researching vocabulary: A vocabulary research manual*. Basingstoke: Palgrave Macmillan. <https://doi.org/10.1057/9780230293977>
- Sharma, P., & Barrett, B. (2007). *Blended learning: Using technology in and beyond the language classroom*. Oxford: Macmillan.
- Tucker, C. R., Wycoff, T., & Green, J. T. (2017). *Blended learning in action: A practical guide toward sustainable change*. Thousand Oaks, CA: Corwin.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478.
- Warschauer, M. (2002). *Reconceptualising the digital divide*. Retrieved on July 7, 2017 from <http://firstmonday.org/article/view/967/888/#author>



**Corresponding author:** Sandor Danka  
**Email:** s.danka.tl@gmail.com