



## Game-Based Learning and TOEIC Vocabulary Building: NNES Students' Learning Attitudes and Motivations

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### Abstract

The purpose of this study was to investigate how incorporating a game-based learning website (i.e., Quizlet) into a First-Year English course might have any impact on non-native English speaking (NNES) students' perceptions of English language learning and TOEIC vocabulary building. Specifically, it aimed to explore how students' attitudes and motivations of English language learning and TOEIC vocabulary building might be significantly decreased or increased in such a game-based learning environment. Twenty-five non-English major students in a First-Year English course were recruited on a northeastern college campus in Taiwan. They were asked to fill in a post-course questionnaire regarding their own perceptions of English language learning, game-based learning, and TOEIC vocabulary building. Results indicated that most of the students in this study were insecure about their current English language proficiency and their ability to receive satisfactory grades in their own TOEIC exam. However, it seemed that many students held more positive attitudes towards using Quizlet to build up their TOEIC vocabulary, had higher motivation to learn TOEIC vocabulary, and expressed that they had much more confidence to get better grades in their TOEIC exam by means of this game-based learning website. It might be beneficial for NNES English instructors and educators to adopt game-based learning websites such as Quizlet to enhance their students' learning motivations. Furthermore, this kind of game-based learning website might better prepare these students to ace their TOEIC exam and to have more self-confidence and positive outcomes in their lifelong English language learning.

**Keywords:** game-based learning; TOEIC vocabulary; learning attitudes and motivations

### INTRODUCTION

Due to the encouragement of the Ministry of Education (MOE) in Taiwan, passing the English thresholds has become the essential graduation requirement for many universities in Taiwan for years. Consequently, many Taiwanese students have strived to take up high-stakes tests such as TOEIC, IELTS, and GEPT to achieve a satisfactory score designated by their universities to fulfill this language requirement and get their diploma in return (e.g., Hsieh, 2017).

Vocabulary knowledge and vocabulary size could be highly correlated to the ultimate outcome of English language learning (e.g., Averianova, 2015; Schmitt, 2000; Nation, 2008). In particular, Kiyomi and Oghigian (2009) have suggested that a minimum of 3000 to 4000 words is the threshold to understand most of the content of the TOEIC exam. However, the acquisition of vocabulary is seldom an easy task for any language learners, let alone for low-achieving non-native English speaking (NNES) students in Taiwan. For instance, Huang (2004) had found that the average vocabulary size of the Taiwanese students in her study might be lower than 2000 words, which might significantly problematize their chances of passing the TOEIC exam and other high-stakes English exams.

In addition, most of the students in Taiwan tended to be extremely anxious about reaching the English language graduation threshold designated by their own universities, which was especially excruciating for students who lacked relevant motivations, who felt they were literally forced to study for the test, and who suffered from enormous pressure and anxiety of not being able to receive their diploma in return (e.g., Hsu, 2009; Pan, 2014; Tsai & Tsou, 2009). Hence, it might be imperative for relevant English instructors to redesign their course to better prepare students for passing the TOEIC exam and reaching the English language threshold of their universities.

In light of these aforementioned issues, this study aimed to explore the possibility of incorporating a game-based learning website (i.e., Quizlet) into a First-Year English course at a university in Taiwan. In particular, it purported to investigate students' perceptions of using game-based learning in relation to their English learning and whether their learning motivation of English learning might be significantly increased or decreased in such a game-based learning environment.

## LITERATURE REVIEW

### Game-Based Learning

Game-based Learning (GBL) refers to an educational environment where the primary goal of game content and game play aims to enhance knowledge and skills acquisition of the target players/learners. The scope of game-based learning could be extremely diverse and expansive, ranging from single-player or small group card/board games to complex massively multiplayer online games and alternate reality games. Therefore, the term of game-based learning actually includes a vast group methods and techniques of organization of the pedagogical process in the form of various educational games (e.g., Bakar & Nosratirad, 2013; Chen, 2014; Milton, Jonsen, Hirst, & Lindenburn, 2012; Prensky, 2001; Smith et al., 2013).

To date, many of the previous studies regarding game-based learning have focused on the literature of digital game-based learning (e.g., Bakar & Nosratirad, 2013; Chen, 2014; Clark et al., 2015; Franciosi, 2017; Levine, 2006; Hay, 2005; Hsu & Tsai, 2013; Peterson, 2011, 2012; Reinders, 2012) and often focused on using the entertaining power of digital games to serve an educational purpose (Prensky, 2001). For instance, Reinders (2012) examined the pedagogical potential of digital game-based learning and its benefits for language acquisition. Levine (2006) also pointed out the fact that digital games, more

than books, movies, and music, could provide lots of opportunities for students to make various decisions on the spot, which was an integral part of the learning process.

### **Game-Based Learning and Language Learning Motivations**

Most of the previous studies on game-based learning focused on examining the learner motivations in a digital game-based learning environment (e.g., Chen, 2015; Chiu, 2013; Clark et al., 2016; Erhel and Jamet, 2013; Peterson, 2011, 2012; Smith et al., 2013; Wang et al., 2008). For instance, Wang et al (2008) proposed that gamers in Singapore displayed higher scores in passion and performed better on weekends. Chen (2015) concluded that elementary school students had higher motivations to learn English in a digital game-based learning environment. Erhel and Jamet (2013) demonstrated that a game-based learning educational environment could significantly contribute to the ultimate learning effective and motivations of the target players/learners.

Some of the previous studies have confirmed that game-based learning could enhance the learning motivations of the target language learners (e.g., Bakar & Nosratirad, 2013; Liu & Chu, 2010; Hays, 2005; Peterson, 2011, 2012). For instance, Bakar and Nosratirad (2013) found that low proficiency students became more motivated to learn English vocabulary in a fun and interactive environment. Liu and Chu (2010) exemplified that game-based learning could actually promote students' English learning effectiveness and motivations of listening and speaking than a non-gaming approach. Peterson (2011, 2012) concluded that learners/gamers had higher learning motivations in massively multiplayer online role-playing games (MMORPG) that provided abundant opportunities for learners/players to engage in an environment such as MMORPG that allowed them to collaborate and engage in various social interactions with other learners/players.

While some of the previous studies have indicated numerous benefits of using game-based learning to facilitate language learning and to enhance students' learning motivation, there seems to be a dearth of empirical research about the effect of games on learning in formal school settings (e.g., Godwin-Jones, 2014; Mitchell & Savill-Smith, 2004; Hays, 2005) to guide future research and practice, especially in an expanding circle country (Kachru, 1991) such as Taiwan. Moreover, most of the previous studies have not empirically examined the learning attitudes and motivations of students in a high-stakes standardized environment such as TOEIC vocabulary acquisition of students in Taiwan by taking a game-based learning approach (i.e., Quizlet).

Therefore, the purpose of the study was to explore the possibility of incorporating a game-based learning website (i.e., Quizlet) into a First-Year English course at a university in Taiwan. In particular, it purported to investigate students' perceptions of using game-based learning in relation to their English learning and whether their learning motivations of English learning might be significantly increased or decreased in such a game-based learning environment.

The overarching question that guided this study was listed as follows:

1. What were the students' perceptions of game-based learning (GBL) in a First-Year English course in Taiwan? In what ways might GBL increase or decrease learning attitudes and motivations of these students?

## **METHODOLOGY**

### **Research Design**

This study was a quantitative study that purported to examine students' learning attitudes and motivations of game-based language (GBL) in a First-Year English course in Taiwan. As a result, a closed-end questionnaire was designed to collect relevant data.

### **Site and Participants**

This study was conducted in a northeastern university in Taiwan during the fall semester in the academic year of 2019-2020. Twenty-Five Non-English Major students enrolled in a First-Year English course at this university were recruited for this study. Characteristics of these participants were: 1) aged between 18 to 19 2) pre-intermediate to upper-intermediate language learners 3) born and raised in Taiwan and 4) recruited from different majors (e.g., information engineering, food science, and business administration).

### **Data Collection**

The main instrument for this study was a questionnaire designed by the researcher (see Appendix). This post-course questionnaire was given to all students on the last day of the course. In this questionnaire there were eight statements pertaining to students' confidence of their English language proficiency and their learning attitudes and motivations of using a game-based learning website (i.e., Quizlet) to learn relevant TOEIC vocabulary in this course. Each statement was designed on a 5-point Likert-Scale, including strongly agree, agree, neutral, disagree, and strongly disagree as all possible options for students to voice their opinion on each statement.

### **Data Analysis**

All of the questionnaires were first calculated on a 5-point Likert-Scale (i.e., strongly agree=5, agree=4, neutral=3, disagree=2, and strongly disagree=1) to get the mean of each statement. Next, the results of each statement was cross-examined by the researcher to further unravel students' possible perceptions of using Quizlet to learn TOEIC vocabulary in this course.

## **RESULTS AND DISCUSSION**

This study purported to examine Taiwanese non-English major college students' perceptions of English language learning and TOEIC vocabulary building via a game-based learning website (i.e., Quizlet). Consequently, a 5-point Likert-Scale questionnaire was designed and distributed to each student on the last day of their course. The results of the questionnaire were then calculated and summarized as follows (see Table 1).

**Table 1.** Results of the Post-Course Questionnaire

Statement	Mean
1. I have confidence in my own English language proficiency.	3.51
2. I have confidence in getting very satisfactory results in the TOEIC exam in the near future.	2.98
3. Vocabulary is crucial to pass my TOEIC exam.	4.77
4. Memorizing relevant TOEIC vocabulary is very difficult for me.	4.42
5. Using Quizlet to learn TOEIC vocabulary is fun.	4.63
6. Quizlet motivates me to ace TOEIC vocabulary.	4.84
7. Quizlet is an effective tool to help me master TOEIC vocabulary.	4.43
8. After using Quizlet, I have more confidence in getting better grades in my TOEIC exam.	4.67

Based on the results of the questionnaire, most of the students seemed to be insecure about their current English language proficiency and their ability to receive satisfactory grades in their own TOEIC exam. In addition, while over 95% of the students valued the importance of mastering TOEIC vocabulary to ace their TOEIC exam, it was noteworthy that almost 90% of the students indicated that they did encounter difficulties in memorizing TOEIC vocabulary on their own. These findings correspond to the previous studies concerning NNES students' lack of confidence in their English language proficiency and their anxiety of possible failures in high-stakes exams such as TOEIC to not be able to get their diploma in return (e.g., Hsieh, 2017; Hsu, 2009; Pan, 2014; Tsai & Tsou, 2009). Furthermore, these findings also confirm that the size and knowledge of relevant vocabulary might be crucial for the ultimate outcome of language learning, especially in a high-stakes testing environment such as taking a TOEIC exam (e.g., Averianova, 2015; Huang, 2004; Kiyomi & Oghigian, 2009; Schmitt, 2000; Nation, 2008).

Nevertheless, after these participants had adopted Quizlet to learn TOEIC for a semester, it seemed that many students began to exhibit more positive attitudes towards using Quizlet to build up their TOEIC vocabulary, had higher motivation to learn TOEIC vocabulary, and expressed that they had much more confidence to get better grades in their TOEIC exam by means of this game-based learning website. As can be seen from Table 1, 93% of the participants agreed that it was interesting to use Quizlet to learn TOEIC vocabulary on their own, and almost 90% of the participants acknowledged the indispensable role Quizlet had played in facilitating their acquisition of TOEIC vocabulary. In particular, approximately 97% of the participants advocated that using Quizlet had significantly enhanced their motivations to master TOEIC vocabulary and 93% of the participants did have much more confidence in taking the TOEIC exams. These findings reaffirm the entertaining elements of game-based learning (e.g., Prensky, 2001) and corroborate that game-based learning could indeed enhance the learning motivations of these language learners (e.g., Bakar & Nosratirad, 2013; Liu & Chu, 2010; Hays, 2005; Peterson, 2011, 2012)

## IMPLICATIONS AND CONCLUSIONS

This study investigated how incorporating a game-based learning website (i.e., Quizlet) into a First-Year English course might have any impact on non-native English speaking

(NNES) students' perceptions of English language learning and TOEIC vocabulary building. Results revealed that most of the students in this study were insecure about their current English language proficiency and their ability to receive satisfactory grades in their own TOEIC exam. However, it seemed that many students held more positive attitudes towards using Quizlet to build up their TOEIC vocabulary, had higher motivation to learn TOEIC vocabulary, and expressed that they had much more confidence to get better grades in their TOEIC exam by means of this game-based learning website.

Based on the findings of this study, it might be beneficial for NNES English instructors and educators to adopt game-based learning websites such as Quizlet to enhance their students' learning motivations. For instance, low proficiency language learners might increase their learning motivations under this kind of game-based learning environment (e.g., Bakar & Nosratirad, 2013; Chen, 2015; Erhel and Jamet, 2013; Smith et al., 2013). Additionally, game-based learning might promote students' English learning motivations of listening and speaking than a non-gaming approach (e.g., Liu & Chu, 2010).

Furthermore, this kind of game-based learning website (i.e., Quizlet) might better prepare these students to ace their TOEIC exam and to have more self-confidence and positive outcomes in their lifelong English language learning. For instance, Dreyer (2014) had demonstrated that Quizlet could facilitate the overall vocabulary acquisition process of high school students in an urban remedial writing program. Franciosi (2017) also proved that game-based learning on Quizlet could significantly promote the transferability of learned English vocabulary.

This study was a pilot study designed to get the preliminary results of how a game-based learning website (i.e., Quizlet) might contribute to NNES students' learning attitudes and motivations during their acquisition of TOEIC vocabulary. Since there were only 25 non-English major college students in a First-Year English course who had participated in this study, it might be better for future studies to compare and contrast how a larger pool of participants consisting of different disciplines and language proficiencies might have lower or higher learning motivations under this kind of game-based learning environment. In addition, future students might consider to explore how these NNES students might exhibit different attitudes when they learn their disciplinary courses other than their general education courses (i.e., First-Year English course) under this kind of game-based learning environment.

## REFERENCES

- Averianova, I. (2015). *Vocabulary acquisition in L2: does CALL really help?*. In F. Helm, L. Bradley, M. Guarda, & S. Thouësny (Eds), *Critical CALL – Proceedings of the 2015 EUROCALL Conference*, Padova, Italy (pp. 30-35). Retrieved from Dublin: Research-publishing.net. <http://dx.doi.org/10.14705/rpnet.2015.000306>
- Bakar, N. A., & Nosratirad, E. (2013). Sustaining vocabulary acquisition through computer game: A case study. *Asian Social Science*, 9(5), 235–242.
- Chen, Y. L. (2014). Virtual reality software usage in an EFL scenario: An empirical study. *Journal of Software*, 9(2), 374-38.
- Chen, Y. L. (2015). The impact of technology-integrated instruction to elementary school children's language learning motivation and performance. *Journal of Literature and Art Studies*, 5(8), 679-685.
- Chiu, T. (2013). Computer-assisted second language vocabulary instruction: A meta-analysis. *British Journal of Educational Technology*, 44(2), 52–56.
- Clark, D. B., Tanner-Smith, E. E., & Killingsworth, S. (2016). *Digital games, design, and learning: A systematic review and meta-analysis*. Menlo Park, CA: SRI International.
- Erhel, S., & Jamet, E. (2013). Digital game-based learning: impact of instructions and feedback on motivation and learning effectiveness. *Computers & Education*, 67, 156-167
- Franciosi, S. J. (2017). The effect of computer game-based learning on FL vocabulary transferability. *Educational Technology & Society*, 20(1), 123–133.
- Godwin-Jones, R. (2014). Games in language learning: Opportunities and challenges. *Language Learning & Technology*, 18(2), 9–19.
- Hays, R. T. (2005). *The effectiveness of instructional games: a literature review and discussion*. Naval Air Warfare Center Training System Division (No. 2005-004).
- Hsieh, C. N. (2017). *The case of Taiwan: Perceptions of college students about the use of the TOEIC tests as a condition of graduation (Research Report No. RR-17-45)*. Princeton, NJ: Educational Testing Service.
- Hsu, H.-F. (2009). *The impact of implementing English proficiency tests as a graduation requirement at Taiwanese universities of technology* (Unpublished doctoral dissertation). University of York, York, Canada.
- Huang, C. C. (2004). *High school and university students' vocabulary knowledge, content knowledge and differential reading comprehension*. Taipei, Taiwan: Crane.
- Hsu, C., & Tsai, C. (2013). Examining the effects of combining self-explanation principles with an educational game on learning science concepts. *Interactive Learning Environments*, 21(2), 104–115.
- Kachru, B. (1992). *The Other Tongue: English across Cultures*. University of Illinois Press, Urbana, IL
- Kiyomi, C., & Oghigian, K. (2009). How many words do you need to know to understand TOEIC, TOEFL & EIKEN? An examination of text coverage and high frequency vocabulary. *The Journal of Asia TEFL*, 6, 121-148.
- Levine, J. (2006). Why gaming? *Library Technology Reports*, 42(5), 10-17.
- Liu, T. Y., & Chu, Y. L. (2010). Using ubiquitous games in an English listening and speaking course: Impact on learning outcomes and motivation. *Computers and Education*, 55, 630- 643.

- Milton, J., Jonsen, S., Hirst, S., & Lindenburn, S. (2012). Foreign language vocabulary development through activities in an online 3D environment. *The Language Learning Journal*, 40(1), 99–112.
- Mitchell, A., & Savill-Smith, C. (2004). *The use of computer games for learning*. Retrieved from [http://www.m-learning.org/archive/docs/The%20use%20of%](http://www.m-learning.org/archive/docs/The%20use%20of%20computer%20games%20for%20learning.pdf)
- Nation, I. S. P. (2008). *Teaching vocabulary. Strategies and techniques*. Boston, USA: Heinle, Cengage Learning
- Pan, Y.-C. (2014). Learner washback variability in standardized exit tests. *TESL-EJ*, 18(2), 1–30.
- Peterson, M. (2011). Digital gaming and second language development: Japanese learners' interactions in a MMORPG. *Digital Culture & Education*, 3(1), 56–73.
- Peterson, M. (2012). Learner interaction in a massively multiplayer online role-playing game (MMORPG): A sociocultural discourse analysis. *ReCALL*, 24(3), 361–380.
- Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon*, 9(5). Retrieved December 2, 2018 from <https://reurl.cc/xO1Ze>
- Reinders, H. (Ed.). (2012). *New language learning and teaching environments: Digital games in language learning and teaching*. Houndsmill, GBR: Palgrave Macmillan.
- Schmitt, N. (2000). *Vocabulary in language teaching*. Cambridge: Cambridge University Press.
- Smith, G. G., Li, M., Drobisz, J., Park, H.-R., Kim, D., & Smith, S. D. (2013). Play games or study? Computer games in eBooks to learn English vocabulary. *Computers & Education*, 69, 274–286.
- Tsai, Y., & Tsou, C.-H. (2009). A standardized English language proficiency test as the graduation benchmark: Student perspectives on its application in higher education. *Assessment in Education: Principles, Policy & Practice*, 16(3), 319–330.
- Wang, C., Khoo, A., Liu, W., & Divaharan, S. (2008). Passion and intrinsic motivation in digital gaming. *CyberPsychology & Behavior*, 11(1), 39–45.

**APPENDIX - QUESTIONNAIRE**

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I have confidence in my own English language proficiency.					
2. I have confidence in getting very satisfactory grades in my TOEIC exam in the near future.					
3. Vocabulary is crucial to pass my TOEIC exam.					
4. Memorizing relevant TOEIC vocabulary is very difficult for me.					
5. Using Quizlet to learn TOEIC vocabulary is fun.					
6. Quizlet motivates me to ace TOEIC vocabulary.					
7. Quizlet is an effective tool to help me master TOEIC vocabulary.					
8. After using Quizlet, I have more confidence in getting better grades in my TOEIC exam.					