# STUDENTS' PERCEPTIONS OF THE EFFECTIVENESS OF TECHNOLOGY - BASED GAMES IN ENGLISH LANGUAGE LEARNING

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**ABSTRACT**

Games are deemed to be very motivating in English language teaching and learning, and technology-based games can be more engaging. Nevertheless, the use of technology-based games in English language teaching in different contexts can be various due to discrete characteristics of each context. This quantitative study aims at examining students' perceptions of the effectiveness of technology-based games in English language learning at a secondary school in Ba Ria – Vung Tau, Vietnam. It involved a group of 86 students in answering the questionnaires. The gained data were processed by the software SPSS in terms of descriptive statistics. The findings showed that the participants believed in the effectiveness of technology-based games in English language learning as they could enhance their language knowledge, skills and learning motivation via playing technology-based games in English language learning. This study is hoped to contribute its part to better understanding of the effectiveness of technology-based games in education in general and English language teaching in specific in the research context and other similar ones.

# NHẬN THỨC CỦA HỌC SINH VỀ HIỆU QUẢ CỦA TRÒ CHƠI DỰA TRÊN NỀN TẢNG CÔNG NGHỆ TRONG QUÁ TRÌNH HỌC TIẾNG ANH

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**TỪ KHÓA**

Hiệu quả
Học tiếng Anh
Trò chơi
Nhận thức
Công nghệ

**TÓM TẮT**

Trò chơi được cho là tạo động lực trong quá trình dạy và học tiếng Anh, và trò chơi dựa trên nền tảng công nghệ có thể thu hút hơn. Tuy nhiên, việc sử dụng trò chơi dựa trên nền tảng công nghệ trong giảng dạy tiếng Anh ở ngữ cảnh khác nhau có thể khác nhau do đặc điểm riêng biệt của từng ngữ cảnh. Nghiên cứu định lượng này nhằm mục đích tìm hiểu nhận thức của học sinh về hiệu quả của trò chơi dựa trên nền tảng công nghệ trong việc học tiếng Anh tại một trường trung học ở Bà Rịa - Vũng Tàu, Việt Nam. Một nhóm học sinh gồm 86 người tham gia trả lời các bảng câu hỏi. Dữ liệu thu thập được xử lý bởi phần mềm SPSS theo phương pháp thống kê mô tả. Kết quả cho thấy học sinh tin tưởng vào hiệu quả của trò chơi dựa trên nền tảng công nghệ trong việc học tiếng Anh vì họ có thể nâng cao kiến thức ngôn ngữ, kỹ năng và động lực học tập thông qua trò chơi dựa trên nền tảng công nghệ trong việc học tiếng Anh. Nghiên cứu này hy vọng sẽ đóng góp một phần vào việc hiểu rõ hơn về hiệu quả của trò chơi dựa trên nền tảng công nghệ trong dạy học nói chung và dạy tiếng Anh nói riêng trong ở nơi nghiên cứu và các ngữ cảnh tương tự.

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## 1. Introduction

Technology has emerged as a powerful tool in education in general and English language teaching in specific [1]-[3]. Accordingly, it has been actively and innovatively deployed in teaching and learning in various contexts. In the context of Vietnam, the application of information technology in foreign language teaching and learning has been strongly encouraged. Specifically, Directive No. 58 issued Communist Party of Vietnam (CPV) Politburo directs that promoting the application of Information Technology in Education and Training at all levels, grades, and disciplines [4]. Therefore, action plans on the deployment of information technology in education and foreign language teaching have been seriously taken at all levels of teaching and learning in an attempt to leverage the quality of education.

As such, the innovation of technology has made the teaching and learning more feasible, creative and interesting by inventing technology-based games (TBGs) so that English language learning (ELL) becomes more engaging. Many common TBGs (e.g., Quizizz, Hot potato, Puzzlets, Kahoot, etc.) are believed to be effective in ELL. Scholars [5], [6] state that TBGs can facilitate learners to get engaged in learning new knowledge and skills. Additionally, TBGs are essential for boosting learners' self-confidence and motivation as they can act as a motivator and stimulus for language usage [7], [8]. Thus, studies on the use of TBGs in ELL have been conducted in different contexts. Internationally, Chen and Yang [9] carried out a study on the effects of simulation games on college English as a foreign language (EFL) students' in Taiwan. The research participants believed that they could improve their language skills and learning attitudes by playing simulation games. In another context, Ashraf, Motlagh and Salami [10] did a quasi-experiment to examine the usefulness of online games in EFL students' vocabulary learning. They found out that online games were effective for EFL students in English vocabulary learning. In Vietnam, Phuong [11] did a study exploring EFL students' attitudes towards online TBGs in ELL and found that TBGs were beneficial for students to learn English vocabulary, and students had positive attitudes towards online TBGs in ELL. Tran and Duong [3] conducted a study on young learners' attitudes towards gamified learning activities in ELL, and the findings revealed that young learners' attitudes gamified learning activities in ELL were positive. It is noticed that different aspects of TBGs in ELL have been conducted in many contexts; nevertheless, the use of TBGs in ELL is still new to both teachers and students in different contexts in Vietnam. That is the reason why the insights into the effectiveness of TBGs in ELL have not been unpacked.

Within the research context, it is observed that students still encountered a number of difficulties in ELL. Since the class size was big, ranging from 40 to 50 students, the English language teaching methods and approaches seemed to be traditional and focused much on introducing students' micro language skills (e.g., vocabulary, grammar and pronunciation) other than improving students' micro language skills (e.g., speaking, listening, reading and writing). Furthermore, students' English language proficiency was not similar, which caused difficulties to teachers in deploying effective English language teaching activities. Besides, students were not really motivated in ELL as they were not fully aware of the importance of English. With the aforementioned reasons, in an attempt to leverage the quality of English language teaching and learning at the research context, the use of technology in English language teaching and TBGs has been strongly encouraged. To that aim, this study endeavors to examine EFL students' perceptions of the effectiveness of TBGs in ELL in the context of a secondary school in Vietnam.

## 2. Research methodology

### *2.1. Research setting and participants*

This quantitative research which adapted the post-positivist worldview to collect data [12], [13] was conducted at a secondary school in Ba Ria – Vung Tau, Vietnam. The school has been recently equipped with modern teaching facilities so that teachers could integrate the use of

information technology in their teaching. English was taught as a compulsory subject, and English textbooks were designed by Vietnam's Ministry of Education and Training.

A group of 86 students in grade 6 was conveniently sampled. Among 86 participants, 73 (85%) students had learned English more than three years, and 13 (15%) students had learned English less than three years. More than a half (53%) of students played TBGs at home, and they used different technological devices (e.g., computer, iPad, smart phone) to play TBGs. The participants learned English with TBGs in class over a period of four months. The common TBGs which were Who is faster?, Lucky numbers, Find treasure's location, Memory Challenge, Who is more intelligent were embedded in different stages of the lessons.

### *2.2. Research instrument*

A closed-ended questionnaire which was designed based on the purposes of the study was employed for data collection. It is composed of two main sections: Section A consists questions for respondents' background information; Section B is the main content asking respondents' perceptions of the effectiveness of TBGs in ELL. There were 15 items using five-point Likert scale (from *Strongly disagree* to *Strongly agree*), which were divided into three groups: language knowledge (5 items), language skills (5 items), and learning motivation (5 items). The questionnaire was originally designed in English, and then translated into respondents' mother tongue so that they did not misunderstand the questions. The translated version of the questionnaire was double-checked by an experienced teacher of English to make sure the accuracy of the translated version. The Cronbach's alpha was .78, which means that the questionnaire was reliable.

### *2.3. Procedures for data collection and analysis*

For data collection, the questionnaire had been piloted with ten students who shared similar characteristics in the main study. Different copies of questionnaire were administered to the target students in person. It took them around 15 – 20 minutes to finish the questionnaire. The returned copies of questionnaire were double-checked for their validity, and the number of valid copies of questionnaire was 86.

In respect of data analysis, the gained data from questionnaires were processed using the SPSS software version 22 in terms of descriptive statistics (Mean = M; Standard deviation = SD). The interval mean scores were understood as 1.00-1.80: Strong disagree; 1.81-2.60: Disagree; 2.61-3.40: Neutral; 3.41-4.20: Agree; 4.21-5.00: Strongly agree [14]. The data analysis was cross-checked by using the inter-rating approach. One expert in the field of statistics was invited to re-analyse the data to ensure that the data analysis was valid and reliable.

## 3. Results and discussion

### *3.1. Results*

#### *EFL students' perception of the effectiveness of TBGs in ELL*

The results in Table 1 reveal that the total mean score of EFL students' perceptions of the effectiveness of TBGs in ELL is 3.62 (SD=.84) out of five. Reading its components, the mean scores are 3.66 (SD=.82) for students' learning motivation, 3.63 (SD=.83) for language knowledge, and 3.57 (SD=.85) for language skills. Such findings can be interpreted that EFL students believed that TBGs were effective in improving their language knowledge, skills and learning motivation.

**Table 1.** *EFL students' perceptions of the effectiveness of TBGs in ELL*

| No. | Components | N=86 | |
|---|---|---|---|
| | | **M** | **SD** |
| 1 | Language knowledge | 3.63 | .83 |
| 2 | Language skills | 3.57 | .85 |
| 3 | Students' learning motivation | 3.66 | .82 |
| | **Average** | 3.62 | .84 |

*Language knowledge*

As seen in Table 2, the participants agreed that the use of TBGs could enhance their language knowledge. Regarding vocabulary, TBGs helped them "remember" (item 1: M=3.65; SD=.81), "systemize" (item 3: M=3.71; SD=.74) vocabulary and "improve [their] ability of using vocabulary" (item 2: M=3.60; SD=.91). With respect of grammar, TBGs helped them "remember" (item 4: M=3.58; SD=.76) and "practice" (item 5: M=3.63; SD=.93) grammar.

**Table 2.** *EFL students' perceptions of the effectiveness of TBGs in ELL in terms of language knowledge*

| No. | Content | N=86 | |
|---|---|---|---|
| | | M | SD |
| 1 | TBGs help me remember vocabulary. | 3.65 | .81 |
| 2 | TBGs help me improve my ability of using vocabulary. | 3.60 | .91 |
| 3 | TBGs help me systematize my vocabulary. | 3.71 | .74 |
| 4 | I remember grammar well through TBGs. | 3.58 | .76 |
| 5 | TBGs give me chances to practise grammar. | 3.63 | .93 |

*Language knowledge*

The results in Table 3 illustrates that participants agreed that their language skills could be improved via the use of TBGs. They believed that TBGs helped them improve their receptive skills, namely "listening skills" (item 6: M=3.69; SD=.78) and "reading skills" (item 7: M=3.62; SD=.83). For productive skills, participants reckoned that TBGs helped them "write better" (item 8: M=3.52; SD=.87), "speak English more fluently" (item 9: M=3.50; SD=.87), and "communicate in English with others better" (item 10: M=3.51; SD=.92).

**Table 3.** *EFL students' perceptions of the effectiveness of TBGs in ELL in terms of language skills*

| No. | Content | N=86 | |
|---|---|---|---|
| | | M | SD |
| 6 | TBGs help me improve listening skills. | 3.69 | .78 |
| 7 | My reading skills is improved thanks to TBGs. | 3.62 | .83 |
| 8 | TBGs help me write better. | 3.52 | .87 |
| 9 | I speak English more fluently thanks to TBGs. | 3.50 | .87 |
| 10 | I communicate in English with others better. | 3.51 | .92 |

*Learning motivation*

The participants (see Table 4) believed that TBGs could motivate them much in English language learning process. They agreed that TBGs could help them "get more confident in English language learning" (item 14: M=3.73; SD=.73), "concentrate on what is taught" (item 12: M=3.70; SD=.80), "understand the lessons easily" (item 15: M=3.60; SD=.81), and "get engaged in the learning activities" (item 13: M=3.58; SD=.85). Additionally, they also thought that TBGs could motivate them "to use English in English language learning" (item 11: M=3.67; SD=.93).

**Table 4.** *EFL students' perceptions of the effectiveness of TBGs in ELL in terms of learning motivation*

| No. | Content | N=86 | |
|---|---|---|---|
| | | M | SD |
| 11 | TBGs motivate me to use English in English language learning. | 3.67 | .93 |
| 12 | TBGs help me concentrate on what is taught. | 3.70 | .80 |
| 13 | TBGs help me get engaged in the learning activities. | 3.58 | .85 |
| 14 | TBGs help me get more confident in English language learning. | 3.73 | .73 |
| 15 | TBGs help me understand the lessons easily. | 3.60 | .81 |

### *3.2. Discussion*

This study has unpacked that the research participants in this study believed the effectiveness of TBGs in ELL as students could enhance their language knowledge, skills and learning

motivation via TBGs. It was found out that EFL learners in this study could improve their language knowledge via TBGs. When TBGs were appropriately designed for ELL, students could gain their language knowledge in terms of vocabulary and grammar. Additionally, TBGs are believed to be interesting and engaging [3], [5], so EFL learners aged from 12 to 13 seemed to get involved in TBGs actively. That could be the reason why the learners could play but learn what they were supposed to learn. This finding is partially aligned with that from studies conducted by Lai and Gu [1], who have found out that learners' language knowledge could be improved by taking part in the use of technology in ELL.

With respect to language skills, EFL students could improve their four macro English language skills, viz. reading, speaking, listening and writing via TBGs. Since activities for TBGs were aimed at helping students practice their language knowledge and skills, they could play games, practice their language skills and improve them. Moreover, since students in this study had experience in playing TBGs both in class and at home, they may find such games useful for improving their English language skills. This finding is supported by Chen and Yang [9], who have found that EFL students' English language skills could be leveraged by playing TBGs.

For learning motivation, EFL students were found to be motivated in ELL via TBGs. The participants in this study were still young, and they could enjoy TBGs, so it may be easy for them to get motivated in playing TBGs. In addition, TBGs are often highly engaging, motivating and fun if activities for TBGs are carefully designed. This finding is partially corroborated with that from studies conducted by Ashraf, Motlagh and Salami [10] and Phuong [11], who have concluded that students were interested in playing TBGs in ELL.

## 4. Conclusion

The study has concluded that EFL students in this study believed in the effectiveness of TBGs in ELL because they could improve their language knowledge, skills and learning motivation via playing TBGs in ELL. As such, the pedagogical implications are suggested. Firstly, teachers should be trained to know how to use TBGs effectively and appropriately so that they can design learning activities embedded with TBGs in different types of lessons. As there are various TBGs that can be used in English language teaching and learning, teachers should be instructed to select TBGs appropriate for their teaching. Secondly, students' playing TBGs should be instructed, monitored and checked to make sure that students can play TBGs in ELL effectively. In addition, students should be trained and encouraged to play TBGs in ELL in order to develop their language knowledge and skills autonomously. Students should be introduced different resources appropriate for their TBGs, and given feedback promptly so that they can adjust their playing TBGs. Thirdly, as TBGs are proved to be effective in English language teaching and learning, administrators should have appropriate incentives to encourage teachers and students to use technology in teaching and learning. Administrators should equip teachers and students with more modern technological devices which allow teachers and students to use in-class and out-of-class easily. They can also call for research on the use of TBGs in English language teaching and learning so that they can seek for more creative and better ways of using TBGs in English language teaching and learning.

This study still had some drawbacks. Firstly, the study employed only questionnaire for data collection from a single group of participants in grade 6. Secondly, only one source of quantitative data was not triangulated from other sources. Thirdly, students' perception of the effectiveness of TBGs in ELL was explored. Therefore, further research on this area should include the mixed-methods design to collect data from a bigger sample size, and it should be a quasi-experiment to compare the effectiveness of TBGs in ELL from different groups of students.

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