Learners' Perceptions of a Commercial Adventure Video Game for Learning English as a Second/Foreign Language

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Abstract: This paper presents a study of a group of 60 Taiwanese EFL learners' perceptions of a commercial adventure video game for second/foreign language learning. The study results reveal that learners held a positive attitude toward the use of the adventure game for English learning and considered the game particularly beneficial to their listening ability, reading ability, and vocabulary knowledge. Learners also reported their enjoyment of using the game for language learning and stated enhanced motivation in English learning. Nevertheless, learners reported several language barriers encountered while gaming (e.g., fast dialogue, fleeting subtitles) and identified some weaknesses regarding the game designs. The research results of this paper identified both strengths and weaknesses of adventure games for EFL/ESL based on learners' perceptions, and should encourage more studies on the investigation of using adventure games in language learning.

Keywords: Adventure games, video games, learner perception, language learning, English as a second/foreign language

1. Introduction

1.1 Commercial Games in Education

The widespread popularity of digital video games over the last decade has aroused many researchers' interests to examine their educational value. These interests urged many researchers to design and investigate games for educational purposes (a.k.a. games-based learning, GBL), but more are on exploring the usefulness of commercial-off-the-shelf (COTS) games in learning. In their review, Connolly, Boyle, MacArthur, Hainey, and Boyle [3] collected 129 papers on computer games and found that more than half of the papers were research on games for entertainment.

The reasons for using commercial games more than self-designed educational games are not hard to understand. Since designing and integrating educational games requires both investments in training and funding [13], adopting existing commercial games will be a more available choice for most educators. Advocates of commercial video game-based learning also contribute to the acceptance of using COTS games in learning by proposing arguments highlighting these games' educational value [7][8][9][15][16]. For example, James Paul Gee regards video games as a form of "experiential learning" [8] and values highly on its educational potential. Foreman [6] and Prensky [16] also highly commend video games as motivating, learner-centered, and sensory-rich learning tools.

1.2 Commercial Games and Second/Foreign Language Learning

Researchers' interests in video game-based learning have contributed to the widespread occurrences of studies examining its effects on various subjects. One of the widely investigated areas is the learning of second/foreign languages. Studies have been conducted to investigate how commercial video games such as simulation games [12][17], massively multi-player online role-playing games [2][14][18][19][20][22], sports games [4], and music games [5] could facilitate second/foreign language acquisition, and many of the studies had reported encouraging results in language gains and positive learning attitudes.

In addition to the aforementioned game types, there are other game genres that might benefit second/foreign language learners as well. Characterized as highly narrative, story-based games that stimulate discovery learning, adventure games are believed to be particularly language-learning-beneficial by many researchers and DGBL-related professionals. Kirriemur and McFarlane [10] commented that adventure games allow learners to experience contextual learning by having them role-play while playing. Baltra [1] argued that video/computer adventure games are useful tools for developing communicative fluency. Tomasz Szynalski [21] also believed that adventure games can help increase learners' motivation and understanding of spoken English and thus proposed using adventure games in language learning.

Considering its narrative, motivating nature and the advocators' supporting arguments, it seems worthwhile to investigate how adventure games can benefit language learners' learning. However, few studies have targeted the use of adventure games on language learning, and even fewer have investigated how learners feel about this kind of games for English as a second/foreign language (ESL/EFL) learning. Thus, the current study aimed to investigate ESL/EFL learners' perceptions of playing a commercial adventure game for English learning and to answer the following research questions:

1. What language skills and knowledge can be improved via commercial adventure games based on ESL/EFL learners' perceptions?
2. What are the strengths and weaknesses of commercial adventure games based on ESL/EFL learners' perceptions?

2. Methodology

2.1 Participants

Sixty undergraduate freshmen at a national university in Taiwan participated in this study. These participants were all non-English majors from different subject disciplines, including Education (n=34), Liberal Arts (n=9), Science (n=8), Business Management (n=4), Fine Arts (n=3), Music (n=1), and Technology (n=1). Both male (n=10) and female (n=50) students participated in this study, and their average age was around 19.

2.2 Instrument

A commercial adventure game called *Back to the Future (BTTF): The Game* was purchased and provided to the participants. The video game is largely based on the story of the famous science fiction movie Back to the Future. In the game, the player controls the leading character, Marty, to explore the 3D environments by interacting with the non-player characters (NPCs) and surrounding objects (Figure 1). Some objects in the game can be picked up and stored in the inventory, and then can be used later to interact with other characters or objects to proceed in the game.

As a commercial adventure game, the *BTTF* game provides abundant textual and aural language input. When playing, the player can simultaneously hear the dialogues spoken by English native speakers and read the English subtitles (Figure 2). In addition to subtitles, all the usable objects in the game are labeled. Hovering on an item shows its name (Figure 3). The game also includes great graphic/sound effects, motivating game tasks, and simple game controls. The player can engage in different demanding tasks using the mouse, keyboard or game controller. In case the game missions are too challenging, the game also provides a list of goals and built-in hints for the player to advance the game. Because of its multiple language input (e.g., textual, pictorial, and aural) and attractive game features, *BTTF* was chosen as the instrument in this study.
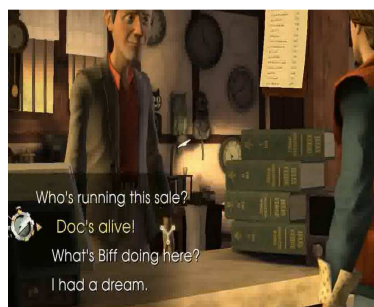
Figure 1. Interacting with NPC   **Figure 2.** Synchronous dialogue and subtitle   **Figure 3.** Presentation of word and symbol

2.3 Data Collection

All participants played the *BTTF* game in a laboratory setting. Because it takes at least 8 hours to complete the whole *BTTF* game, all participants were allotted one hour to experience the game in case they might be exhausted from a long hands-on session. After one hour, all participants were asked to take a five-point Likert scale survey questionnaire. The questionnaire investigated the participants' perceptions of a) playing the game toward language learning and b) the game design of the *BTTF* game. In addition to the Likert scale survey items, the participants were required to answer some open-ended questions regarding a) possible language gains after game-playing and b) the strengths/weaknesses of the game. Both the questionnaire and the open-ended questions aimed to explore the possible language gains as well as motivating features of adventure video games.

3. Results

3.1 Perception of Back to the Future for Language Learning

The results of the survey, as presented in Table 1, showed that students considered the *BTTF* game helpful in improving their English ability (M=4.15). Among the investigated language ability/knowledge, listening (M=4.17), reading (M=4.00), and vocabulary (M=4.17) are the skills that benefited the most from game playing, whereas skills/knowledge like speaking (M=3.00), writing (M=2.78), and grammar (M=2.78) benefited less. Students also showed positive attitudes toward the helpfulness of adventure video games in English learning (M=4.12) and expressed their willingness (M=4.18) to use this kind of games for language learning.

Table 1. Mean scores for the perceptions of the game's helpfulness for language learning

Items	Mean (SD)
The game helps me improve my English listening ability.	4.17 (0.64)
The game helps me improve my English speaking ability.	3.00 (0.92)
The game helps me improve my English reading ability.	4.00 (0.64)
The game helps me improve my English writing ability.	2.78 (0.69)
The game helps me improve my English vocabulary knowledge.	4.17 (0.67)
The game helps me improve my English grammar knowledge.	3.20 (0.73)
In general, the game helps me improve my English ability.	4.15 (0.55)
I think playing adventure video games helps me improve my English ability.	4.12 (0.56)
I am willing to use adventure video games to improve my English ability.	4.18 (0.75)
Average Mean (SD)	3.75 (0.68)

Students' responses to the open-ended question regarding their language gains also reveal similar results to that of the survey questionnaire, as shown in Table 2. Students commented that playing the game could enhance their listening ability and the presentation of subtitles helped them comprehend some fast dialogues. The instructions/subtitles also helped to increase their reading ability and speed. In addition, playing the game provided a chance for them to learn many new words in a context-rich, all-English environment, and it also introduced them to some new colloquial usages. Students also reported that learning English through playing the video game enhanced their learning motivation in an enjoyable way.

While students reported some language gains after gaming, they also identified several language barriers. For example, some students complained that the fast dialogues and the fleeting subtitles caused them some problems in comprehending the text. The language used in the game, either its structure or vocabulary, was also difficult to several students. A small number of students considered the game less helpful in improving their speaking and writing ability, and expressed their doubts as to whether their English skills could benefit from game playing.

Table 2. Summary of participants' comments on language/learning gains and difficulties

		Gains	Difficulties
Language	**Listening**	• Enhances general listening ability (22) • Enhances listening with the aid of subtitles (4)	• Fast dialogue (7)
	Speaking		• Less beneficial (1)
	Reading	• Enhances general reading ability (11) • Increases reading speed (1)	• Fleeting subtitles (5)
	Writing		• Less beneficial (1)
	Vocabulary	• Enlarges vocabulary size (22) • Learning vocabulary in context (14) • Recognizing learned vocabulary (1)	• Difficult vocabulary (2)
	Grammar		

Others	• Acquiring new colloquial expressions (2) • Engaging in an all-English environment (1)	•	Difficult language (1)
Learning	• Enhances learning motivation (7)	•	Not educational (1)

Note. The identified times of each item are given in parentheses

3.2 Perception of the design of Back to the Future

In addition to the helpfulness of the video game, students also expressed their fondness for the game design. They liked the storyline (M=4.37), the graphic design (M=4.07), and the audio design (M=4.08) of the game the most. Compared to these features, students regarded the given instructions/hints (M=3.75), the difficulty level of the game missions (M=3.65) and the language level (M=3.52) as the less satisfactory designs of the game. Nevertheless, they still had a positive impression of the overall game design and were motivated to play the game (M=4.07). Table 3 shows the means and standard deviations for the perceptions of the game design.

Table 3. Mean scores for the perceptions of the game design

Items	Mean (SD)
The game is easy to control and gives clear/sufficient instructions/hints.	3.75 (0.73)
The game missions are moderately changeling.	3.65 (0.86)
The difficulty level of the language used in the game is moderate.	3.52 (0.77)
The storyline of the game attracts me.	4.37 (0.82)
The graphic design of the game attracts me.	4.07 (0.84)
The audio design of the game attracts me.	4.08 (0.83)
The game can attract me to keep playing.	4.07 (0.71)
Average Mean (SD)	3.93 (0.79)

As for responses to the open-ended question, students' comments of the game design echoed with the survey results. They identified the intriguing storyline of the game as one of the salient strengths, and recognized the gameplay design (e.g. game missions, character development, useful hints, multiple routes, simple game controls, and entertaining cut-scenes) as the most satisfactory design of the game. They also liked the game's delicate art design and great audio design (dubbing, sound effects, and background music). Students reported that they gained a sense of achievement after complete the game missions, and that they were engaged in playing the game for aforementioned attractive features. They also thought that the subtitles and item names provided in the game helped them to proceed in the game more smoothly.

Although many students identified the gameplay design as the most welcomed design of the game, some students also pointed out several unsatisfactory features. Among the identified weaknesses, unclear/insufficient hints and challenging game missions were the two major features that students complained about, which echoed the statistical results. Students reported that certain missions require complex procedures to accomplish, and they did not have the know-how to play this kind of game. Even though they referred to the built-in hints, they sometimes still did not know what they should do to achieve the missions. A number of students suggested that the built-in hints should be more detailed and explicit so that they can know what to do to solve the game missions. In addition, some

students considered the pacing of the game somehow slow, and they also complained that there were too many dialogues in the game. A small number of students also expressed difficulties in controlling the leading character's movements. While many students liked the storyline and the art design of the game, a few students felt the storyline was boring and the graphic design was unattractive. Table 4 presents both the identified strengths and weaknesses of the game.

Table 4. Summary of participants' comments on the strengths and weaknesses of the game

	Strengths	Weaknesses
Art Design	• Delicate graphic design (12) • Vivid character depiction (2)	• Poor graphic design (4) • Poor 3D quality (3)
Audio Design	• Great dubbing (4) • Great sound effects (3) • Great background music (1)	• Poor sound effects (3)
Gameplay Design	• Intriguing storyline (24) • Engaging game missions (11) • Attractive character development (6) • Sufficient/useful hints (5) • Multiple routes (4) • Simple game controls (3) • Entertaining cut-scenes (2)	• Unclear/insufficient hints (6) • Difficult/complex game missions (6) • Slow gaming pace (5) • Lengthy dialogues (4) • Hard to control the character's movements (3) • Boring storyline (2)
Others	• English subtitles/words provided (7) • Sense of achievement (5) • Entertaining and appealing (4)	• Poor alignment of the dialogues and subtitles (4)

Note. The identified times of each item are given in parentheses

4. Discussion

This study investigated ESL/EFL students' perceptions of a commercial adventure video game for language learning. Both students' perceptions of language gains and of game design after playing the game were examined, and the study yielded the following major findings.

First, students held positive attitudes toward the use of this kind of game for language learning, and they believed this game is particularly helpful in improving their receptive language abilities/knowledge such as vocabulary, listening, and reading. The context-rich learning environment of the game allow students to receive multiple language input (e.g., textual, pictorial, and aural). For example, many students reported that the game could increase their vocabulary size by presenting new words with symbols. Picture aids have been proven to be an important factor for effective vocabulary learning and retention [23]. It is thus reasonable for students to consider the game to be beneficial for vocabulary acquisition.

Although students reported improved receptive language skill/knowledge, they thought the game was less beneficial to their productive language knowledge (e.g. writing and speaking). Students were constantly receiving language input when playing the game, but they had limited opportunities to produce language output. Even though they could choose different replies whenever encountering a dialogue tree, the pre-set, fixed replies did not allow students to reconstruct the sentence structures. Students were also not allowed to

create their own sentences as replies. The lack of allowing creative language production could be seen as one of the major limitations of using commercial adventure video games for language learning. Hence, for educators who intend to facilitate language learners' speaking and writing skills through commercial adventure games, they should be more careful when adopting this type of game for language learning.

In terms of their perceptions of the game, students expressed their fondness for the overall game design and identified several attractive features that motivated their interest both in gaming and learning. To most of the students, the storyline and the challenging game missions are the two major attractive factors that motivate them to use the game. The challenging game missions, however, were also regarded as one of the major drawbacks of the game design to some students. The discrepancy in students' perceptions of the game missions might result from different language proficiency between students. As mentioned in the previous section, certain students commented that the language used in the game was somehow overwhelming to them. It is possible that they did not know how to deal with the current mission because they could not fully comprehend (or miscomprehended) the conveyed messages. They thus failed to complete certain missions and considered these game missions difficult.

In addition to language proficiency, students' gaming proficiency might also contribute to the discrepancy in the difficulty level of the game missions. Some students in this study already specified that they did not know how to play this kind of game, even though they have no difficulties in decoding the language. For less experienced adventure gamers, it might require more effort to familiarize themselves with the needed skills to complete the game missions. The lack of related gaming experiences might influence learners' perception of video games for language learning, which was already reported in Lee, Cheon and Key's study [11]. Hence, it would be worthwhile to investigate whether language proficiency and gaming experiences can positively/negatively affect learners' perceptions of adventure video games for language learning.

5. Conclusion

Generally speaking, this survey study shows that learners enjoy playing commercial adventure video games and consider these games useful tools to facilitate second/foreign language learning. For further study, it is suggested to conduct empirical research to further explore how and to what degree such games can assist learners in enhancing the previously identified language aspects. Factors such as learners' language proficiency levels and gaming experiences should also be included to determine what types of learners will benefit more from playing commercial adventure video games.

Acknowledgements

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