



Full Length Research Paper

Understanding the Confidence, Motive and Self-efficacy on Influence of Adventure Game on English reading

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Abstract

The purpose of this study was to explore the relationship of adventure game playing and English learners' reading confidence, motivation, and self efficiency. Forty-five non-English major students in a technology university were surveyed. Comparisons of reading confidence, motivation, and self efficiency between high and low achievement learners were made. The use of adventure games can improve the capability of reading teaching. The results shows that: (1) adventure games can improve the students' learning motivation of reading; (2) adventure games can improve readers' English reading confidence, especially for male students; (3) adventure games can improve students' English reading self efficacy.

Keywords: Confidence, learning motive, self-efficacy, game on English reading.

INTRODUCTION

According to statistics of from 104 Job Bank in 2009, 47.5% of job vacancies in the current job market expect the candidates to have foreign language competence which is critical in workplace. Therefore, it is necessary and critical to learn foreign language (ex. English). In foreign language learning, anxiety results in negative influence. Horwitz et al. (1986) claimed that foreign language anxiety is a unique type of anxiety specific to foreign language learning. Many studies have also focused on anxiety with respect to classroom activities such as speaking and listening, suggesting that oral classroom activities are most problematic and anxiety-provoking for foreign language learners (Horwitz et al., 1986; Steinberg and Horwitz, 1986; MacIntyre and Gardner, 1994a; Price, 1991; Meji'as et al., 1991). Foreign Language Anxiety, recognized as an affective factor in foreign language learning and normally discussed alongside other individual learner differences (Gardner and MacIntyre, 1992, 1993), is still considered to be a relatively new and developing area within foreign

language research (Pinel, 2006). However, there is little research on the influence of English learning anxiety on English Learning especially in English reading.

English reading are important competence needed for the acquisition of knowledge of English. English reading influences a person's acquisition of new international information and their communication competence (Salinger, 2003). Many studies suggest strategies for the instruction of English reading. For instance, Hidi and Anderson (1986) applied extracts and short introductions to help learners comprehend reading materials. Goodman (1989) adopted an inferring strategy which helped good readers. Taiwanese scholar Chi (1997) applied elaborating (enhancement strategy) to effectively enhance readers' comprehension of reading materials. Poor readers tended to be lost in paragraphs and could not organize the fragmental comprehension. O'Mally and Chamot (1990) indicated that reading strategy connected language and background knowledge. Moreover, some scholars suggest that confidence and motive lead to English learning anxiety which influences English learning. English learning anxiety based upon confidence would influence foreign language learners' reading performance. Matsuda and Gobel (2001) stated the important role of "self-confidence" in identifying compo-

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nents of foreign language anxiety. Matsuda and Gobel (2001) found a strong link between "Low Self confidence in Speaking English" and "Reading Confidence/Enjoyment". Horwitz et al. (1986) claimed that there were three components of foreign language anxiety: communication apprehension, test anxiety, and fear of negative evaluation. Therefore, language anxiety manifested itself when students avoided conveying complex messages in the foreign language, i.e. when they displayed a lack of confidence. Thus, if debilitating anxiety affects students' performance or achievement, teachers should be able to identify what it is and help learners cope with or overcome anxiety (cf. Foss and Reitzel, 1991; Crookall and Oxford, 1991; Campbell and Ortiz, 1991; Powell, 1991).

Therefore, this study will try to find how to increase poor readers' English competence. After passing the examination of required subjects, university students in Taiwan have certain capacity of English vocabulary. How can poor readers further enhance English competence? Reading is the critical competence to acquire knowledge of English in English learning. Therefore, in order to enhance poor readers' reading competence, confidence, and motive can be improved, which will result in decreased English learning anxiety and will influence English learning. English learning anxiety effects upon confidence influences foreign language learners' reading performance and learning motive.

In addition, with economic development, recreation and entertainment have become vital in many people's lives. Of the various leisure activities and entertainment, the computer gaming industry has developed rapidly (Schell, 2001). According to estimations of the Institute for Information Industry in Taiwan, there were 4.5 million online players in Taiwan in 2010. At the annual meeting of the Chinese game industry it was announced that in 2010, there were 75.983 million Chinese online players. According to a 2009 report of ECPAT Taiwan on the causes of teenagers' game playing, killing time was the most likely cause (66.9%); releasing feelings or stress is the most common reason to enjoy the game, (72.1%). Generally speaking, games positively influence teenagers. They can release their emotions by playing games and obtain confidence and identification from peers. Therefore, how can gaming be combined with English reading learning to increase poor readers' English reading competence? What kinds of games can meet players' reasons ("challenge" and "euphoria") to enjoy games? Asgari and Kaufman (2004) suggested that challenge was the important experiential factor to satisfy the players. According to Garris et al. (2002), to turn digital gaming into learning, first of all, it must combine instructional content with game characteristics. Secondly, the game should attract learners and constantly trigger the interactive cycle of judgment and feedback. Finally, the learning goal should be accomplished by participating in the game. Mitchell and

Savill-smith (2004) indicated that game objectives and learning goals of digital game-based learning might not be consistent. The game could be a distraction to learning and it may not satisfy both males and females. Difficulty of the game would influence learning motive and time consumption might affect physical and mental health. In other words, game content should meet the structure and context of English reading materials. Moreover, learners need make efforts to pass the challenges in the game which stops their learning. There is no time limit for overcoming the challenges. In addition, the game is not long and it can meet the demand of mild players. In comparison to various kinds of games, such as Role Playing Games, Strategy Games, Simulation Games, Sport Games, Racing Games, Action Games, and Fighting Games, Adventure Games aim to "unriddle the game". Players only unthread the puzzles according to the situations of the game and they cannot spend time fighting and arranging. They finish the game by successfully unthreading the puzzles. In addition, Adventure Games reveal characteristics of challenge and the situations are based on structure and context of storytelling. They meet the descriptions of Garris et al. (2002) and Mitchell and Savill-Smith (2004) regarding digital game-based learning.

Therefore, the purpose of this paper is to probe into the influence of an Adventure Game on English learners' reading confidence, motive, and self-efficacy.

METHOD

Research subjects

This study used 45 technical university students in non-English departments as subjects and by quasi-experiment, probe into the influence of an Adventure Game on English learners' reading confidence, motive, and self-efficacy. Comparisons of reading confidence, motive and self-efficacy between high and low-achievement learners and genders are made to investigate the feasibility of using Adventure Games to improve reading instruction. Selection of subjects was based upon purposive sampling and the subjects were 45 university freshmen from non-English departments. The ratio of males to females is 18:27. According to these students' English grades in university, they are divided into two groups, high and low achievement. There are 18 high-achievement students and 27 low-achievement students. Among the high-achievement students, 4 are males and 14 are females. Among low-achievement students, 14 are male and 13 are female.

Research procedures

This study is based on pre-test and post-test closed



Figure 1. Display introduction of Alice is dead.

questionnaire survey of 45 students. This study is based on quasi-experiment. Research time is 3 hours. Each participant had a personal computer, earphone/microphone, notebook, and electronic dictionary. There were three stages and each stage lasted for 50 minutes. There was a 10 minutes break after each stage. Before and after the study, participants filled in the questionnaires. In each stage, the participants engaged in English reading through the Adventure Game and they could look up the vocabulary words using the electronic dictionary while reading. In each stage, the subjects were required to read for 30 minutes. After 30 minutes, it was considered as finished reading. The subjects could exit the game and wait for the next stage. The researcher recorded the observations and conducted focused interviews with specific subjects after the experiment.

Research tools

This study adopts the Adventure Game “Alice is Dead” developed by Newgrounds.com (<http://Newgrounds.com>). The game is based on the story Alice in Wonderland. There are three increasing degrees of difficulty. The game guides the players to “unriddle” the game with clues from the text. The text of the game includes two sections: texts of situation and interaction. Players must play the game after reading the situation text. In the game, there is text of interaction to allow the players to modify and play the game.

Introduction of display

Alice is dead

The AVG game, Alice is Dead has three versions: Version one : Alice is dead one (<http://freegame.com.tw/>

[flash/avg/avg_p_092.htm](http://freegame.com.tw/flash/avg/avg_p_092.htm)). In this version has more than 36 sentences and about 300 words. The Level of difficulty is easy and it is suggested that the completion time is 20 to 25 minutes. (Figure 1)

Version Two : Alice is Dead two (http://freegame.com.tw/flash/avg/avg_p_092.htm). In this version has more than 60 sentences and about 600 words. The Level of difficulty is medium and it is suggested that the completion time is 30 to 35 minutes.

Version Three : Alice is Dead three (http://freegame.com.tw/flash/avg/avg_p_128.htm). In this version has more than 80 sentences and about 1000 words. The Level of difficulty is difficult and it is suggested that the completion time is 40 to 45 minutes. (Figure 2)

Questionnaire

The questionnaire included three dimensions: “English reading motive”, “English reading confidence” and “self-efficacy of English reading”. A five-point Likert scale was adopted for the responses with the left side (5) indicating “totally disagree” and the right (1) indicating “totally agree”. Descriptions in the questionnaire were presented using positive language. There were 45 items. When constructing the scale, this study adapted the definitions and degrees of “English reading motive”, “English reading confidence” and “self-efficacy of English reading” from those suggested by experts and scholars involved in writing research. Regarding the 45 items in questionnaire, the first 15 items are based on the participants’ English writing motive suggested by Phinney (1991) and the researcher changed it into the participants’ English reading motive. Another 15 items (Items 16 to 30) were revised from Daly and Miler (1975) who focus on the participants’ writing questions. The researcher changed it into the participants’ English reading confidence. The last 15 items (Items 31 to 45) are revised from Jacobs et al. (2005) and Pajares et al.

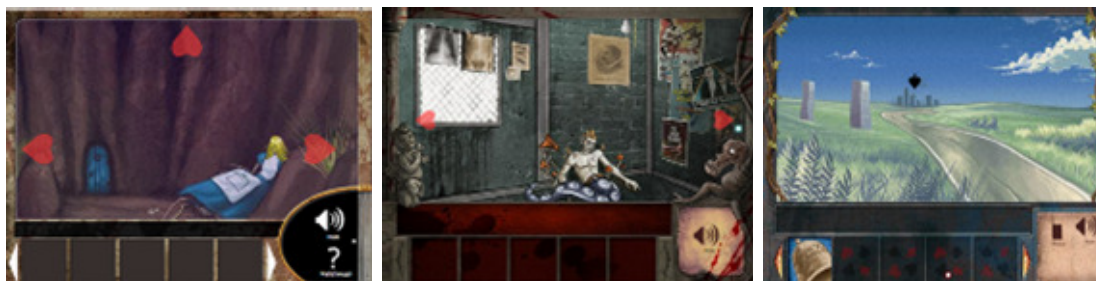


Figure 2. Display the game screen of Alice is dead.

Table 1. Paired-Samples T-test of English reading motive before and after study.

| | Pair variable difference | | | | | t | Freedom | Significance (two-tailed) |
|--------------------|--------------------------|-----------------------|-------------------------------|--|-------------|--------|---------|------------------------------|
| | Mean | Standard deviation | Standard deviation of mean | 95% confidence interval of difference | | | | |
| | | | | Lower limit | Upper limit | | | |
| Before-after study | -2.111 | 6.647 | .990 | -4.108 | -.1139 | -2.130 | 44 | .039 |

(2001) who suggest the participants' self-efficacy of writing. The researcher changed it into the participants' self-efficacy of English reading. The higher the scores obtained by participants in different dimensions are, the higher their reading motive, confidence and self-efficacy will be.

Data Analysis

Statistical analysis on data is based on the Chinese version of SPSS 17.0 for Windows. The analytical methods include descriptive statistics and Paired-Sample T-tests to explore data and validate the hypotheses. The significance level of findings is set as $\alpha = 0.05$.

RESULTS

English reading motive

The test of learning motive of this study aims to find if learners' learning motive is different after participating in Adventure Game English reading. Table 1 shows the statistical results of this experiment. For all learners, before and after study, English reading motives were significantly different ($p < 0.05$). In addition, the 95% confidence interval does not include 0. Thus, after the study, all learners' English reading motives are higher than those before the study. It demonstrates that Adventure Games are significantly effective for improving learners' English reading motive. According to classroom observation records and focused interview results, the researcher realizes that learners are highly interested in English reading learning through Adventure Games.

Challenging, fun and entertaining are the images of game-based learning for learners. However, since Adventure Games are different from ordinary RPGs, learners must fully understand the situation and clues, and carefully pass the challenge according to the text of clues. Since difficulty degrees of "Alice is Dead" increase from 1 to 3, learners' motive on applying the adventure game to English reading learning gradually decreases. However, generally speaking, they still have a high degree of learning motive regarding game-based learning.

English reading confidence

The test of reading confidence in the experiment aims to find if learners' reading confidence is different after participating in Adventure Game English reading. Table 2 shows the statistical results of the reading confidence test. Participants with low-achievement English reading had significantly different confidence before and after study ($p < 0.05$). The finding demonstrates that Adventure Game English reading is significantly effective in improving low-achievement learners' reading confidence. Among low-achievement learners, there was a significant difference in reading confidence among males before and after the test ($p < 0.05$). However, there were no other significant differences in reading confidence regarding gender. Based on classroom observation records and focus interview results, the researcher realizes that learners are confident in text reading during the game; however, they are unconfident in passing all the challenges. Malone and Lepper (1987) suggested that the educational game should be designed upon appropriate difficulty and an easy-to-learn environment.

Table 2. Paired-Samples T-test of English reading confidence before and after study.

| | Pair variable difference | | | | | t | Freedom | Significance (two-tailed) |
|------------------------------|--------------------------|-----------------------|-------------------------------|---|-------------|-------|---------|------------------------------|
| | Mean | Standard deviation | Standard deviation of mean | 95%confidence interval of difference | | | | |
| | | | | Lower limit | Upper limit | | | |
| High achievement | 1.000 | 6.693 | 1.460 | -2.046 | 4.046 | .685 | 20 | .501 |
| Low achievement | 2.560 | 6.265 | 1.253 | -.0262 | 5.146 | 2.043 | 24 | .050 |
| Males | 2.388 | 5.922 | 1.395 | -.556 | 5.334 | 1.711 | 17 | .105 |
| Females | 1.185 | 6.754 | 1.299 | -1.486 | 3.857 | .912 | 26 | .370 |
| High- achievement males | -1.000 | 7.438 | 3.719 | -12.836 | 10.836 | -.269 | 3 | .805 |
| High- achievement females | .937 | 6.495 | 1.623 | -2.523 | 4.398 | .577 | 15 | .572 |
| Low- achievement males | 3.357 | 5.343 | 1.428 | .271 | 6.442 | 2.351 | 13 | .035 |
| Low- achievement females | 1.545 | 7.421 | 2.237 | -3.440 | 6.531 | .691 | 10 | .501 |

Table 3. Paired-Samples T-test of English reading self-efficacy before and after study.

| | Pair variable difference | | | | | t | Freedom | Significance (two-tailed) |
|-----------------------------|--------------------------|-----------------------|-------------------------------|---|-------------|--------|---------|------------------------------|
| | Mean | Standard deviation | Standard deviation of mean | 95%confidence interval of difference | | | | |
| | | | | Lower limit | Upper limit | | | |
| Total | -4.222 | 6.908 | 1.029 | -6.297 | -2.147 | -4.100 | 44 | .000 |
| High achievement | -3.428 | 5.114 | 1.116 | -5.756 | -1.101 | -3.072 | 20 | .006 |
| Low achievement | -4.920 | 8.041 | 1.608 | -8.239 | -1.601 | -3.059 | 24 | .005 |
| Males | -3.000 | 8.561 | 2.017 | -7.257 | 1.257 | -1.487 | 17 | .155 |
| Females | -5.037 | 5.577 | 1.073 | -7.244 | -2.830 | -4.692 | 26 | .000 |
| High- achievement males | -.250 | 9.358 | 4.679 | -15.142 | 14.642 | -.053 | 3 | .961 |
| High-achievement females | -4.125 | 3.739 | .934 | -6.118 | -2.132 | -4.412 | 15 | .001 |
| Low-achievement males | -3.785 | 8.523 | 2.278 | -8.707 | 1.135 | -1.662 | 13 | .120 |
| Low- achievement females | -6.363 | 7.526 | 2.269 | -11.420 | -1.307 | -2.804 | 10 | .019 |

Difficulty of games can be a challenge for learners. Although challenge is a key to a successful game (Pagulayan, 2003), it should not influence learning. However, for low-achievement male students, since in their daily lives, they encounter challenges in games, regarding game use and logic, they are more able to deal with the game and frustration. Thus, they highly agree that they can play the game as well as learn English.

Self-efficacy of English reading

Self-efficacy is “a judgment of one's ability to organize and execute given types of performances,” (Bandura, 1997). The test of reading self-efficacy aimed to find if

learners' reading self-efficacy is different after participating in the experiment involving an Adventure Game with English reading. According to Table 3, t-values of English reading self-efficacy for the test groups, high achievement, low achievement, females, high achievement females, and low achievement females indicated significant differences ($p < 0.05$). This demonstrates that Adventure Games with English reading are significantly effective in improving the reading self-efficacy of female learners. However, as shown in Table 3, t-values for males, high-achievement males, and low-achievement male learners' English reading self-efficacy before and after the study did not reach the established significance level (0.05). In other words, male learners with either high or low-achievement do not

demonstrate significant differences in reading self-efficacy. According to classroom observation records and focus interview results, the researcher realizes that female learners enjoy interacting with games. Feedback and clues of the game will lead to their careful reading of text. The finding is consistent with Prensky (2001) and Squire et al. (2005) who indicate that modern teenagers enjoy interactive learning. However, male learners are more eager to pass the challenges rather than understand the situations. They prefer traditional lectures regarding English reading learning. It shows that males do not treat the game as reading material for English learning and they simply regard it as an ordinary game. The finding meets the statement of Prensky (2001) that educational games are treated as common ones.

CONCLUSIONS AND SUGGESTIONS

This study aims to recognize enhancement of learning motive and value by game-based learning and search for more proper reasons to include games in instruction and learning. Thus, it applied the adventure game "Alice is Dead" to English reading learning to probe into the reading anxiety, motive, and self-efficacy of high and low English achievement learners as well as the feasibility to apply the games to reading comprehension. The conclusions are shown below:

1. Adventure Games effectively increase learning motive of English reading.

Traditional digital learning is boring for learners (Pivec, 2007). However, games can trigger their learning motive. Learners will be involved and concentrated. Thus, game-based learning has gradually become popular in e-learning. In other words, learning by computer games is also part of education. However, the instructors must be careful of the balance among learning goals, instructional activities, classroom time management, and motive. Game-based learning can be properly designed according to teaching materials with different learning objectives, student characteristics, and learning situations to appropriately incorporate games and learning.

2. Adventure Games effectively increase low-achievement learners' English reading confidence, particularly low-achievement males'.

Mitchell and Savill (2004) suggested that game-based learning was significantly criticized due to addiction and violence caused by games. Moreover, many studies (Kuo, 2007; O'Leary, Diepenhorst, and Savill-Smith, 2005) indicate that effectiveness between game-based learning and traditional digital learning or traditional instruction is not significantly different. However, according to findings of this study, Adventure Games effectively increase low-achievement students' English reading confidence, particularly for low-achievement males. It shows that game-based learning can result in different possibilities for low-achievement learners. It will

rely on future research to develop different learning experiences and opportunities for low-achievement learners.

3. Adventure Games effectively enhance self-efficacy of English reading. However, males do not reveal significant differences.

It can be feasible to apply Adventure Games to English reading learning. However, balancing between games and learning and strategy of game-based learning will rely upon further studies. How to provide learners with appropriate and positive game experience is considerably important. Many past studies (Ng and Wiemer-Hastings, 2005; Yee, 2002) demonstrate that current game designs tend to result in learners' indulgence and addiction. Therefore, in game-based learning, teachers should not only instruct students with correct game learning concepts, such as time management, but also carefully guide the students and select the games for them since there are negative effects such as addiction and violence.

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