THE EFFECT OF GAME GENRES ON USE OF SECOND/FOREIGN LANGUAGE LEARNING STRATEGIES

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ABSTRACT

This study investigates the effects of game genres on the choice of certain language learning strategies among Taiwanese college students. The sample for the study consists of 162 undergraduate freshmen in an institute of technology in Taiwan. The results show that game genres have an influence on the choice of different language learning strategies. Simulation and role-play games have significant impacts on cognitive and metacognitive learning strategies. Students express stronger positive preferences on using simulation games to learn a foreign language than virtual-pet games. Simulation and role-play games encourage students to figure out the meaning of the unknown words. Simulation games also motivate students to keep playing when confronting a language barrier. The results imply that simulation and role-play games are superior to virtual pet games in terms of helping second/foreign language learning. Based on the results, implications and suggestions for further study and second/foreign language instruction are presented.

Key words: Video game, Language Learning Strategies, Second/foreign Language Learning, Motivation.

INTRODUCTION

Keeping learners motivated is important because second/foreign language learning is an arduous task, which requires learners to continuously devote their efforts to achieve a certain proficiency level. Research argues that popular culture has a crucial role in motivating students learning because it is fun, enjoyable, and meaningful to their lives (Cheung, 2001; Prensky, 2001; Pryor, 2008). The use of pop culture for language learning is also encouraged and common (Cheung, 2001; Godwin-Jones, 2005). Playing videogames is popular among today's "Game-Generation (Prensky, 2001). To motivate today's students, many researchers suggest the applications of videogames in school settings (Foreman, 2003; Gee, 2003, 2005; Prensky, 2001; Van Eck, 2006).

Playing commercial videogames in a foreign language is common outside many target language countries. To motivate second language (SL)/foreign language (FL) learners, research advocates the adaptation of videogames in English-as-Second-Language (ESL) curriculum (Baltra, 1990; Cruz, 2007; Meskill, 1990; Purushotma, 2005). Despite the facts that videogames have positive influences on SL/FL learning (Coleman, 2002; deHaan, 2005a; Dylak & Kaczmarska, 2001; Lee, Cheon, & Key, 2008; Lee & Key, 2008; Yip & Kwan, 2006), research has not reached a consensus on what genres of videogames have the most benefits for engaging SL/FL learners (Baltra, 1990; Cruz, 2007; deHaan, 2005b; Purushotma, 2005). Malone (1981) argues that fantasy, challenge and curiosity are three important characteristics that make videogames motivating and fun. Since different games have their unique characteristics in contexts, challenge (difficulty levels), control, and level of engaging, they may motivate SL/FL learners to different degree. To have a better understanding on what types of games would encourage students to learn a SL/FL, this study aims to examine whether a specific type of game affects the use of certain type of language learning strategy.

Theoretical Framework

Videogames and Learning

Videogames by definition are games that are played

through personal computers or consoles, involving one or multiple players in a physical or networked environment (Fransca, 2001). Videogames are often touted as motivating (Malone, 1981; Prensky, 2001). Harnessing its motivating, fun, challenging, and curiosity elements, videogames formats have been adopted as an effective instructional tool in the past in many fields, such as in military training (Johnson, Vilhjalmsson & Marsella, 2005; Totty, 2005), in business experts training (Totty, 2005); and more recently, in foreign language and culture learning for soldiers (Lovgren, 2006).

There are many advantages that make videogames a valuable tool for language learning: engaging and fun (Malone, 1981; Prensky, 2002); providing situated learning environment (Foreman, 2003; Gee, 2003; Shaffer & Gee, 2005; Shaffer, Squire, Halverson, & Gee, 2005; Um& deHaan, 2005), repeating of linguistic elements (deHaan, 2005b), having control over the speed and repetition of language (deHaan, 2005b), and associating of words and symbols (Shaffer et al., 2005). Malone (1981) argues that fantasy, challenge, and curiosity are three important characteristics that make video games motivating and fun. Likewise, Prensky (2002) claims that videogames are challenging and relaxing because videogames allow players to achieve "flow" experience (Csikszentmihalyi, 1991) and have fun in the game playing process. Fun is the driving force that makes people exert more time and effort on some activities repeatedly (Prensky, 2002). Additionally, fun also can decrease learning anxiety and promote motivation intensity toward the learning tasks. As Krashen (1982) argues, if SL learners' "affective filters" (Krashen, 1982) decrease, the chances for them to obtain more inputs will increase (Krashen, 1982). Videogames are engaging, relaxing, and intrinsically motivating (Prensky, 2002). These elements make the learning process more engaging and less laborious. Accordingly, learners will be more motivated to spend time on their learning tasks (deHann, 2005a; Purushotma, 2005).

The situated learning environment makes the game world an ideal learning tool (Foreman, 2003; Gee, 2003; Shaffer & Gee, 2005; Shaffer et al., 2005). For instance, videogames provide a unique popular social and cultural world among young people to practice different identities (Gee, 2005; Shaffer et al, 2005). Videogames playing allows people to become engaged and to take roles in a new world that are not accessible in their real lives. In the game world, players develop and experience different lives, act out their hypotheses, construct their own meaning, and share their thoughts with other players (Shaffer, et al, 2005; Um & deHaan, 2005). Knowledge is initiated, transformed, and constructed within a "learning by doing environment" virtual world community (Shaffer et al, 2005, p.108), rather than by rote learning.

The feature of repetition of language in the game world promotes learning (deHaan, 2005b). High exposure to the target language is important for vocabulary acquisition and retention (Kamil & Hiebert, 2005). The National Reading Panel (2000) also concludes that repeated exposure that allows learners to encounter words in different context promotes vocabulary development. In the game world, the language inputs are repeated in each level with different tasks. For instance, when players continuously try tasks, they need to understand the language from the tutorials or pop-up messages because these messages are highly related to the success of the tasks and cannot be neglected. Accordingly, the more the players become engaged, the more they begin to absorb some passive language abilities from the simulated language immersion. Vocabulary words can be learned incidentally because of the repeated exposure to the target language in the game world (deHaan, 2005b; Rosas et al., 2003).

In addition, language learning can be controlled in the game world (deHaan, 2005b). Unlike other medium, in the game world, learners have control over the speed and repetition of language. Players can pause, repeat, and check the meaning of words with friends or chat online, if they think the language is crucial in understanding the game (deHaan, 2005b). In other words, learning is customized to an individual's needs and the pace is controlled by the player/learner in the game world (deHaan, 2005b; Foreman, 2003).

Pictures provide available clues for guessing, which promotes vocabulary acquisition (Yoshii, 2006). Research

also indicates that video and text combination works better for vocabulary learning than text and picture combination (Al-Seghayer, 2001). Sounds, words, and graphics are often presented simultaneously in the game world. New words and symbols are connected together (Shaffer et al., 2005). Players not only can use contextual clues or video to guess and decode the unknown words, but they also can act out the words (deHaan, 2005b; Purushotma, 2005). These features promote language learning.

Second language and foreign language learning strategies

Learning strategies are specific actions employed by the learner in order to "make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (Oxford, 1990, p.8). Oxford (1990) classifies learning strategies as direct (memory, cognitive, and compensation strategies) and indirect (metacognitive, affective, and social strategies.)

Memory strategies include creating mental linkages, applying images and sounds, and reviewing well. Cognitive strategies are practicing, receiving and sending messages, and creating structure for input and output. Compensation strategies are identified as guessing intelligently and overcoming limitations in language knowledge. Metacognitive strategies involve entering, arranging, and evaluating one's learning. Affective strategies refer to lowering one's anxiety, encouraging oneself, and taking one's emotional temperature. Social strategies mean learning by asking questions, co-operating with others, and empathizing with others (Oxford, 1990). These strategies are applied to the four learning skills of listening, reading, speaking, and writing. The choice of certain strategies is related to the differences in gender, learner's motivation, culture background, type of tasks, and learning styles (Gu, 2003; Oxford, 1994).

Methodology

Research Question

The purpose of this study was to examine the effect of game genres on the use of FL learning strategies. Five types of games were used to determine the impact of the use of FL learning strategies among Taiwanese college students. The research question is "Do different game genres affect students' use of second/foreign language learning strategies?"

Participants

The participants for this study were 162 undergraduate freshmen drawn from an approximate population of 800 business majors, applied foreign language majors, and computer and communication majors in an institute of technology in central Taiwan. They have been learning English as a foreign language for more than six years. Students in Applied Foreign Language majors also study Japanese as a foreign language for more than one year. Both males (104) and females (58) were included and ranged in age from 19 to 24.

Instrument, Data Collection and Analysis

The instrument for the present study was a Five-point Likert scale survey questionnaire, consisting of demographic information and the items of language learning strategies. The survey questions were developed based on the concepts of previous studies (deHaan, 2005a; 2005b, Kirriemuir & McFarlane, 2004, Oxford, 1990, Purushotma 2005). The game types were categorized as simulation games, role-playing games, sports games, action/adventure games, and virtual pet games (deHaan, 2005a; 2005b, Kirriemuir & McFarlane, 2004). The language learning strategies (direct and indirect) were developed by the researcher based on the studies of deHaan (2005a; 2005b) and Oxford (1990).

The survey questionnaire was administered to the participants during their English classes by three volunteer English teachers in the institute. The questionnaires were also collected and sent back to the researcher by the three teachers. In the demographic section, students were asked to choose their favorite types of games and the types of games they play most in their leisure time. Based on their answers, students were grouped into the five types of games for analysis.

A K-group multivariate analysis of variance (MANOVA) was conducted to test the group differences. The follow-up

pairwise multivariate comparisons and univariate tests were used to examine which pair of groups differs in the sets of language learning strategies.

Results

To examine whether there were differences among five groups of students in terms of the choice of SL/FL learning strategies while playing videogames, a K-group MANOVA was conducted. The independent variables represented five groups of students playing different games. They are simulation game group (27), role-playing game group (73), sports game group (19), action/adventure game group (36), and virtual pet game group (7). The dependent variables were the set of language learning strategies: have fun in playing, try to find out the meaning of unknown words, give up playing, ignore the unknown words, check the meaning, discuss with someone, play videogames helps language learning, and play certain games to learn a language. The mean scores and standard deviations of these variables for each of the student groups are given in Table 1. Preliminary analyses indicated no serious problems with kurtosis nor were there extremely outlying individuals that were influential data points. The multivariate test for homogeneity of dispersion is non significant (*Boxs M* = 148.243; *F*(108,16035) = 1.197; *p* = .234). Therefore, the assumption of homogeneity was met.

The result of multivariate test for the differences among the five groups was statistically significant (*Wilks* Λ = .725; *p* = .025), indicating that the five groups of students differed in the use of language learning strategies. In order to find specific groups that differ in the use of language learning strategies, ten follow-up pairwise multivariate comparisons were conducted. The Bonferroni adjustment for protection of experiment-wise error rate was used in the pariwise multivariate comparisons. With α_E = .15, an α = .0187 was used. Among the pairwise multivariate comparisons, two pairs revealed significant differences. They are simulation versus virtual pet games (*Wilks* Λ = .508, *p* = .016) and role-play versus virtual pet games (*Wilks* Λ = .765, *p* = .011).

	Game Types					
	Simulation (n=27)	Role-play (n=73)	Sports (n=19)	Action (n=36)	Virtual Pet (n=7)	Total (n=162)
Language learning Strategies						
Have fun in both in Chinese and FL games (Affective)	3.630	3.781	3.737	3.250	3.429	3.617
	(1.043)	(.946)	(.733)	(1.296)	(1.028)	(1.028)
Try to figure out the unknown words (Cognitive)	3.815	3.808	3.737	3.500	2.857	3.691
	(.834)	(.877)	(.933)	(1.298)	(.900)	(.999)
Give up playing when facing too many unknown words (Compensation)	2.519	2.644	2.632	2.778	3.329	2.685
	(.935)	(1.229)	(1.212)	(1.376)	(.976)	(1.208)
Ignore the unknown words (Compensation)	2.963	3.384	3.263	3.583	3.714	3.358
	(.980)	(1.075)	(.933)	(1.025)	(.756)	(1.031)
Check the meaning when playing (Cognitive)	3.407	3.123	3.000	2.861	2.714	3.080
	(.888)	(1.013)	(1.054)	(1.046)	(.951)	(1.009)
Discuss with someone else (Social)	3.741	3.014	3.000	3.194	3.857	3.210
	(.712)	(1.173)	(1.155)	(1.238)	(.900)	(1.139)
Playing videogames helps learn a FL (MetaCognitive)	3.929	3.685	3.895	3.528	3.571	3.710
	(.616)	(.956)	(.658)	(1.230)	(.976)	(.950)
Play certain videogame to learn a FL (MetaCognitive)	3.667	3.247	3.053	2.944	2.429	3.191
	(.877)	(1.064)	(.970)	(1.264)	(.787)	(1.089)

* Standard deviations are given in parenthesis

Table 1. Mean scores of the strategies used for gender differences (N = 162)

In the univariate tests, the results show that the pair, simulation and virtual pet games, differ on three dependent variables. They are (1) try to figure out meaning (p = .012; Cohen's d = .97), (2) give up playing when facing too many unknown words (p = .03; Cohen's d = .75), and (3) play certain videogame to learn a FL (p = .002; Cohen's d = 1.16). It indicates that students who play simulation games are more willing to find out the meaning of unknown words and tend not to give up playing when facing too many unknown words than those who play virtual pet games. Students also have stronger agreement in playing certain types of games to learn a foreign language than those who play virtual pet games. On the other hand, the difference between role-play games and virtual pet games was seen for one variable (try to figure out meaning, p = .008; Cohen's d = .96).This indicates that students who play role-play games tend to find out the meaning of unknown words than those who play virtual pet games. Results of the significant multivariate comparisons and the significant variables in univariate tests are given in Table 2.

Discussion and Conclusions

Discussion

The study results have two findings. First, simulation and role-play games have a significant impact on the choice of FL learning strategies. Overall, students who play simulation games or role-play games are more likely to use cognitive learning strategies (figure out the meaning of unknown words). Meanwhile, students who play simulation games tend to employ metacognitive skills (play certain games for learning FL). For compensate strategy, students who play simulation games also tend to seek the solution for language barriers. As a result, they do not give up playing easily when facing too many unknown words. One interpretation for the differences is the nature of game context. In simulation and role-play games, more linguistic elements are included. This indicates that more cognitive tasks are needed. If the game is motivating enough, players will try to solve the language barriers to understand the storyline and complete the tasks. On the other hand, cognitive tasks might be less needed in virtual pet games because the frequency of language repetition is high (deHaan, 2005a). Accrodingly, students might get bored easily and give up playing.

Pair	Significance of Multivariate test	Significant variables in univariate test
Simulation & Virtual Pet	Significant (p = .016)	Try to figure out meaning (η^2 = .18, p = .012, Cohen's d = .97) Give up playing when facing too many unknown words (η^2 = .13, p = .03, Cohen's d = .75) Play certain videogame to learn a FL (η^2 = .26, p = .002, Cohen's d = 1.16)
Role - Play & Virtual Pet	Significant (p = .011)	Try to figure out meaning (η^2 = .08, p = .008 Cohen's d = .96)

α =.0187 for multivariate tests, α =.05 for univariate tests

Table 2. The results of pairwise multivariate and univariate tests

Another interpretation for the differences is that FL learning requires interaction. Brown and others (1989) note that the development of language knowledge is through "continued and situated use". And the meaning of a word can be well captured in the "situations and negotiations" (p. 33). Thus, constantly practicing the language in a related culture or community is important for the development of language knowledge. Because simulation games or role-play games require players to take a role in a certain community based on the tasks, players are immersed in the culture of the game world where they need to understand their identity and interact with people with the same culture in the game world. Thus, the chances for learners to use cognitive strategies to understand the unknown word can be expected because they need to understand the tasks and the storyline to succeed in their game community.

It can be concluded that videogame immersion increases learners' chances to be exposed to an authentic meaningful interaction with the target language (Purushotma, 2005); moreover, it also allows learners to use and to understand the languages because they need to use such a language to survive in the game world and to successfully achieve their goals (high scores). Thus, more cognitive strategies may be expected in a simulation or role-play game. Accordingly, language learning occurs in the situated context of the

game world. Language knowledge is initiated and transformed in a "learning by doing environment" (Shaffer et al, 2005; p.108), rather than by rote learning.

Second, the results of the study imply that simulation and role-play games are superior to virtual pet games in terms of helping FL learning. According to deHaan's (2005a) argument, virtual pet games and sports games have the most linguistic benefits for FL language learning because of the high frequency of language repetition. On the other hand, learners might become overwhelmed or give up playing in a role play game because of too many complicated linguistic items (deHaan's, 2005a). However, the findings in the present study indicate that students are more willing to figure out the meaning of the unknown words in a role-play game than in a virtual pet game. The linguistic benefits do not directly impact upon students' choices of using virtual pet games or sports games for language learning. Interestingly, students who play more simulation games exhibit higher levels of using game format for language learning than those who play virtual pet games. This implied that linguistic aspects might not be a critical factor that will affect students to learn a FL language when using videogame format. Other factors including the engaging level, the challenging level (difficulty level of tasks), interaction, and storylines of a games, need further study because they all relate to the motivation feature of videogames (Malone, 1989).

Keep in mind that people play videogames for entertainment. Enjoyment is the key to motivate people to play. If learners are exposed to an environment that they enjoy, their "affect filter" for language learning is more likely to decrease and language learning is more likely to occur (Krashen, 1982). deHaan (2005b) also states that the "enjoyable repetitious actions in a sports video game, batting or shooting, for example, make learning language easier by lowering a learner's *affective filter* (p. 231). Fun makes the learning process engaging, relaxed, and comfortable (Prensky, 2002). These elements make videogames interesting and intrinsically motivating, and it is more likely that they will figure out the meaning of unknown words. Thus, if simulations and role-play games are more engaging than virtual pet games, they have better chances to promote SL/FL learning.

Further study is needed to investigate the effect of game types on language learning strategies taking language proficiency and age differences into consideration. Language proficiency is an important factor that affects the use of language learning strategies of FL learners (Oxford & Nyikos, 1989; Griffiths, 2003). Different game types have their characteristic features of linguistic contents. Players with different language proficiency will have different views of using different game formats for language learning. In addition, players with different ages might target certain types of games (Eglaze, Fekete, Kiss & Izso, 2005). Therefore, their choices of language learning strategies might be different when facing language barriers in different games.

Conclusion

The educational power inherent in popular culture through videogames is a mechanism to promote language learning. The implication for SL/FL teaching is that videogames have the crucial place in ESL/EFL curriculum since playing videogames encourages students to use a certain strategy to learn a SL/FL language. Language teachers need to use this advantage to encourage informal learning outside the language classroom. When language learners are encouraged to learn the target language outside the classrooms, learning can be extended and become autonomous. This might be one of the solutions to the limitations of having SL/FL learners exposed to the target language extensively in the language classrooms. In terms of determining the appropriate games for language learning, both linguistic elements and motivation factors need to be considered. Although linguistic benefits are crucial for language learning when choosing videogame format, other factors are important for encouraging students to learn autonomously. When selecting an appropriate game, language teachers need to ask "Does the game motivate learners to exert more time on the learning tasks? Does the game engage the learner to use the target language? And does the game encourage interaction?". The elements are also crucial for encouraging autonomous learning.

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