



Investigating Reported Social and Affective Strategy Use by EFL Learners in Virtual and Real Learning Environments

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Abstract

Recently, research on computer-assisted language learning has been growing. However, little research is conducted to explore the strategic social interactions of students who learn English as a foreign language (EFL) in a virtual world. The purpose of the study was to investigate how 52 EFL college students engaged and interacted socially in virtual and real spaces. This paper endeavors to address the issue from the theory of language learning strategies. The results reveal that the learners engaged more in a virtual learning environment compared to those in a real English communication class. Moreover, the avatar-embodied virtual world elicited more strategic social interactions for the female EFL students than the ones in a real space, which gave rise to active use of English for communication.

Keywords: Virtual learning, Language learning strategies, Engagement, Computer-assisted language learning

1. Introduction

The dramatic growth of computer-assisted learning in recent years has revolutionized the way people learn. Nowadays there has been an interest in exploring the pedagogical potentials of learning in a virtual world (Cheal, 2009; Dabaj, 2009; Hansson, 2005; Shen & Eder, 2009). The studies showed that learning a second or foreign language in a virtual environment increased learners' motivation to study because it enabled learners to interact meaningfully with each other in a target language (Wang & Braman, 2009). Wankel and Kingsley's study (2009) also indicated that the learners engaged more in the language lessons which were provided in a virtual space compared to learning in a traditional classroom. Moreover, Watson-Gegeo and Nielsen (2003) also reported that the learners could get the higher level of language proficiency after performing authentic social activities through a simulated virtual world than learning in a traditional classroom. Cheal (2009) maintains that virtual learning provides an opportunity for collaborative learning and enables learners to engage in meaningful communication that simulates authentic situations. Moreover, virtual environments allow learners to control their pace of learning and socially interact with others inside and outside a class environment.

There is a growing body of research studies that explore learners' perceptions toward learning in a virtual world (Lam, 2004; Shen & Eder, 2009; Yaghoubi, Mohammadi, Irvani, Attaran, & Gheidi, 2008). Most of the research reports that learners felt more comfortable and motivated when learning in a virtual space. However, strategic social interactions that actually occur in a virtual learning world remain unrevealed. Additionally, how female learners react to technology-assisted social engagement is not well discussed. The effect of gender on virtual learning is definitely worthy of discussion because females are often considered reluctant learners in regards to technology.

To address the gap, this paper presents a preliminary study to explore EFL learners' social and affective strategy use in virtual and real learning spaces. Besides, the interaction effect between genders, engagement, and social and affective strategy use was also examined.

2. Literature review

2.1 Virtual learning world

A virtual world is an online virtual space where learners could engage in various activities and interact with each other through embodied avatars (Schiller, 2009). Virtual Learning provides a space for constructive learning and gives immersive role-playing games for learners to engage in a meaningful communication simulated to authentic practices (Cheal, 2009). Virtual spaces lower the cost to design and set up a learning project or activity (Twining, 2009). Second Life, used in this study, is one type of three-dimensional virtual world created by Linden Labs (Wang & Braman, 2009). This avatar-based online environment applies sociocultural concepts that involve meaningful negotiation, identity development and meaning making.

Second Life can be used as a learning platform because of its unique features. First, it is a game-like learning environment. Secondly, it offers a large amount of flexibility for educators to design authentic learning tasks for learners to practice a target language (Pulford, 2009; Wankel & Kingsley, 2009). It provides educators and learners with a new platform that integrates technology into authentic learning practices, and allows for simulated social interactions that could improve learners' learning experiences. Second Life not only strengthens social interactions among learners, but also improves their language proficiency and self-regulated capacities (Wang, Song, Stone & Yan, 2009). In addition, Wang and Braman (2009)'s study showed that Second Life encourages widespread group engagement and creativity. Therefore, Second Life can also serve as an alternative and potentially neutral space for language learners who are not comfortable in a formal classroom setting.

2.2 Language learning strategies

Language strategies are specific behaviors and thoughts that learners generate to enhance their learning. Oxford (1990) defined language strategies as "operations employed by the learner to aid the acquisition, storage, retrieved, and use of information...; specific actions taken by the learners to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situation" (p.8). Oxford (1990)'s six-part strategy taxonomy has been widely referenced in language learning research. Her model of language learning strategies not only includes direct strategies as memory (storing and retrieving new information by grouping images and sounds), cognitive (understanding new information by analyzing and producing messages in different ways) and compensation strategies (closing gaps in knowledge by guessing wisely) but also underlines indirect strategies as metacognitive (controlling learners' own cognition), social (making meaningful communication) and affective strategies (regulating learners' motivation, emotion and attitude).

There is a growing discussion concerning social interaction and affect in relation to language learning. A heated issue about the reciprocal relationships among personal, behavioral and environmental influences on self-regulated language learning process has been raised (Bandura, 2001; Zimmerman, 2001). Learning environments could influence learners' motivation and behaviors, and may further have an impact on one's choice of what to learn, how to learn and the amount of effort put into the learning process. As mentioned above, the previous studies showed that learning a second or foreign language in a virtual environment highly motivates students to regard and use English as a communication tool rather than a subject (Wang & Braman, 2009; Watson-Gegeo & Nielsen, 2003).

In all, various studies reported the positive effects of teaching languages on a virtual learning environment. However, the research is still limited to language outcome. In fact, the investigation on strategic processes of language learners in the virtual learning world seems to be missing. Also, gender factor is worth discussing when language learning occurs in a technology-assisted environment. This paper presents an exploratory study to investigate how learners engaged and reported to use social and affective strategies in a three-dimensional virtual world of Second Life in comparison to a traditional classroom. Moreover, how gender influences the strategic learning process in virtual and real worlds was examined. Two research questions address the research purpose.

1. Are there any differences in engagement and reported social and affective strategy use by the EFL learners between the virtual learning and the traditional classroom?
2. Are there any differences in engagement and reported social and affective strategy use by the EFL female learners between the virtual learning and the traditional classroom?

3. Methodology

3.1 Participants

Subjects were 52 sophomores whose majors were English from a university in a southern Taiwan city. Forty-three were female and 9 were male. All of them were native Mandarin speakers. The mean length of time spent learning English was 10.1 years. The weekly time spent on computer ranged from 3 hours to 66 hours. The average length of time spent using a computer was about 34 hours per week.

3.2 Procedures

The participants were divided equally into two groups: virtual learning (experimental) and traditional classroom learning (control). Both of the groups had learned five lessons from a textbook, *Communication in Business*, over a six week period. The content centered on the communicative skills used when presenting and negotiating. For each lesson, both the virtual and traditional learning groups were required to learn a topic-related lesson, complete one listening practice and practice two oral activities during a two-hour communication class. However, the methods used to present teaching materials and provided instruction were different in the traditional and virtual classes.

In the traditional classroom, the teaching materials were presented in a PowerPoint format and projected on to a big screen. The participants would interact face-to-face with each other, practicing content-related activities either in pairs or in groups depending on the nature of the designed tasks. In the virtual learning world, the participants received the instruction content and interacted with each other through various multimedia tools such as an electronic bulletin board (presenting learning objectives and directions of the day), role cards (showing the descriptions of a task), and objects' labels (demonstrating the names of avatars and virtual objects). In addition, two online communication tools were allowed for use: texting and voice chat, through which the participants were able to discuss and practice instructional materials, and exchange their opinions actively.

When logging in a virtual learning world of Second Life, the participants were teleported to Ben's Lab, a virtual space co-constructed by the researchers of the current study. When they entered the Ben's Lab, an electronic bulletin board was placed at the entrance to present learning objectives and instructions for the day. Then the participants would move to the 3rd floor to practice a sample dialogue posted on the wall with partners (see Figure 1) and also study topic-related language usage by answering a listening task (see Figure 2). The participants were required to submit the answers through email.



Figure 1. A Sample Dialogue with the Description of Communication Purpose



Figure 2. A Sample Listening Task Embedding the Negotiation Procedure

After they discussed and finished the content-related dialogues and listening practices, the students who felt ready would move to another meeting room for oral activities. As shown in Figure 3, the description of an oral task was posted on the wall, and the students who entered the meeting room could find partners by themselves to collaboratively practice the online role-play activities. A very important feature in the virtual learning class was that the participants decided when to move to the next stage at their own pace.



Figure 3: A Sample Oral Task with Task Objectives and Prompts

3.3 Instrument

A task-based language learning strategy inventory was used in this study (Appendix A). After the six-week instruction period, the participants were required to answer the inventory. The Chinese and English versions of each question item were discussed and evaluated by two bilingual teachers. There were three parts in the survey, including question items about self-rated engagement of given classes, social and affective strategy use and open-ended questions regarding their learning experiences. The part about social and affective strategies was modified from Oxford's Strategy Inventory for Language Learning (1990). The participants were asked to check their own level of agreement to each statement on a Likert scale of 1 to 5: 1 (almost never true for me), 2 (generally not true for me), 3 (somewhat true for me), 4 (generally true for me), and 5 (almost true for me). The internal consistency for the overall scale is .88 by Cronbach's alpha, which indicates a high reliability of the task-based language learning strategy inventory.

4. Results

To study whether social interactions and engagement of EFL learners would differ between virtual and real learning spaces, the study conducted statistical tests to examine the quantitative data from the task-based language learning strategy inventory.

4.1 Research question 1: Examining engagement and reported social and affective strategy use between learning environments?

As shown in Table 1, the EFL learners, both in the virtual learning and in the traditional classroom, reported highly moderate mean frequency in engagement and reported use of social and affective strategies. Their mean scores ranged from 3.3 to 3.6. Further testing the mean differences statistically, the results indicated that there was no significant difference in engagement and reported use of social strategies. However, the reported use of affective strategies was significantly different between the two learning environments ($t(51)=4.09$, $p<.04$), indicating the EFL learners in the virtual learning group reported to use more affective strategies (mean= 3.6) than those in the traditional classroom (mean= 3.33).

Table 1: Summary of Independent t-tests Results with Comparisons of Engagement and Strategy Uses between Learning Environments

	Virtual Learning Mean (SD)	Traditional Classroom Mean (SD)	df	t	p
Engagement	3.42 (.80)	3.58 (.67)	51	0.94	.76
Social Strategy	3.62 (.59)	3.36 (.77)	51	3.25	.07
Affective Strategy	3.60 (.66)	3.33 (.59)	51	4.09	.04*

*p <.05

4.2 Research question 2: Examining engagement and reported social and affective strategy use by the EFL learners of same gender between learning environments?

To further investigate the relationship between gender, engagement and reported use of social and affective strategies was examined between learning environments. As shown in Table 3, the results indicated that there was a significant difference in the reported use of social strategies ($t(25)=4.88, p<.01$). The female EFL learners in the virtual learning reported higher mean in the social strategy use (mean= 3.73) than the female learners in the traditional classroom (mean= 3.31). Moreover, the female learners in the virtual learning seemed to use more affective strategies than the females in the traditional classroom, but the mean difference was not significant at .05 level ($t(25)=3.46, p<.07$). As to the male students, no significant differences were found in engagement level and reported use of social and affective strategies between the virtual and real learning environments.

Table 2. Summary of Independent t-tests Results with Comparisons of Engagement and Strategy Uses between Each Learning Environment within Female Students

Independent t-tests	Engagement		Reported Social Strategy Use		Reported Affective Strategy Use	
	Virtual Learning	Traditional Classroom	Virtual Learning	Traditional Classroom	Virtual Learning	Traditional Classroom
Female						
Mean	3.55	3.49	3.73	3.31	3.62	3.29
(SD)	(.74)	(.65)	(.43)	(.76)	(.57)	(.60)
t value	.068		4.88*		3.46	
df	41		41		41	

* $p <.05$

5. Discussions

5.1 Engagement in relation to learning environments

In general, the EFL learners engaged more when they accomplished language-related tasks in the virtual world. Learning English as a foreign language needs to be developed through sociocultural participation in various communication activities (Zheng, Young, Wanger & Brewer, 2009). The nature of a virtual world easily encourages interaction and collaboration between learners and their embodied avatars and also between each avatar (Lam, 2004). Rather than being forced to speak up in front of people, the EFL learners in this study were enabled to use various communication tools such as voice and text chat to negotiate and solve language tasks in a simulated environment. They raised questions to clarify concepts, responded to others' comments and searched for appropriate words to deliver messages. They so engaged in making meaningful communications through this less anxious, avatar-embodied world.

Moreover, Second Life, the virtual platform used in this study, provided multiple opportunities for EFL learners to use English to interact with other avatars outside of class. For example, one of the participants, Lily, reported that Second Life allowed her to meet foreigners from different countries in the virtual world. In the interview, she said that she looked for virtual learning spaces public to everyone, especially those designed for language learning. She met a lot of avatars and interacted with them. When asked how the virtual learning helped her, Lily made a powerful statement that this was the first time she felt like using English as a communication medium, not learning English as a subject. It sounds like a simple statement but it is extremely difficult to achieve when a target language is learned in a foreign society where learners are exposed to the target language mainly in language classes. As other researchers on virtual learning argued, language tasks designed in virtual learning worlds do not simply afford language learning. It is the interplay of the initiated actions, the nature of virtual world and sociocultural context that cultivates language learning (van Lier, 2004; Zheng et al., 2009). The meaningful interaction between learners, their embodied avatars and its virtual world, in return, motivates learners to develop linguistic knowledge actively.

5.2 Reported social and affective strategies in relation to gender in learning environments

The study found that the female students in the virtual learning reported to use social strategies more frequently than the female learners in the traditional classroom. This finding contradicts to some studies stating that female learners were reluctant to explore and interact in the computer-assisted learning (Cooper & Stone, 1996). As Oxford and Nyiko (1989) suggested, female learners tend to be reflective learners who consider issues from different angles before responding, and they are devoted to answer without mistakes. Different from face-to-face interaction, online interaction provides time for female learners to contemplate and think through questions texted by others before responding. In addition, the virtual world allows female learners to use internet identity (another personal image created in the virtual world), which probably makes them feel more comfortable when using the target language, and further lessens the worry of making errors. As Oxford (1990) states, "Language is a form of social behavior; it is communication, and communication occurs between and among people" (p. 144). Learning a language thus should involve developing

appropriate social strategies such as asking for correction, cooperating with others and clarifying others' thoughts and feelings.

6. Conclusion and implications

The intent of this study was to gain more understanding about strategic social interaction and learners' attitude toward virtual learning compared to traditional learning. The study is also one of the few studies which examined gender difference in the choice of strategy use between real and virtual spaces. The results of the study help us to rethink about the media that are chosen to teaching a language. More importantly, it reshapes the concept of how to develop a good language learner. Rubin (1995) listed six features of a good learner. A good learner is willing to (1) guess intelligently, (2) communicate, (3) take risk for making mistakes, (4) focus on both structure and meaning, (5) seek for all practice opportunities, and (6) monitor interlocutor's speech and his own utterances. We as language teachers tend to put emphasis mostly on developing linguistic knowledge and skills, and the first three important qualities of a good learner mentioned above are usually ignored.

Collaborative tasks embedded in the virtual learning give rise to active interaction between language learners, and those learners thus are more willing to communicate and negotiate meaning in target languages. To make language learning successful in a virtual space, careful planning on task-based activities and detailed instruction are needed. Skehan (1998) suggests that a task should focus on meaning, achieve a goal, produce an evaluative outcome, and connect to the real world practice. The interplay of well-designed language tasks and the nature of virtual world would form a social context that naturally elicits meaningful communication and optimal learning sequences of EFL learners.

7. Limitation and future research

This study has some limitations. The participants were English majors. Therefore, they were more able to regulate themselves in the virtual world where all of the instructional information was written in English. Partly because of their relatively high English proficiency they were more motivated in this inductive way of learning. Other research might be conducted to examine how low English proficient learners interact in the virtual world and also their attitudes toward it. In addition, because of the small size of male participants the comparisons between male and female students could not be tested statistically. However, some studies stating that female learners were reluctant to explore and interact in the computer-assisted learning (Cooper & Stone, 1996), which partly contradicts to what was observed among the females students in this study. The inconsistent findings about gender issues in online learning context need to be further examined, and other possible reasons might be considered such as the design of online tasks, the type of technology device or individual difference in technology experiences.

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