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Effectiveness of Second Life Virtual Learning Environment for Language Training in Hospitality and Tourism

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ABSTRACT

Virtual Learning Environment (VLE) systems have been widely used in higher education as an effective e-learning platform. With its large user community and virtual facilities in various disciplines, including education, recreation, tourism, business, etc. Second Life (SL) has become one of the most dominant VLE systems for hospitality and tourism training. With better student devices and a faster internet connection, language education in Vietnam recently saw soaring interest in using SL for training, especially in an ESP area like English for hospitality and tourism. However, there is still very little research on the effectiveness of SL VLE for language training in hospitality and tourism. This fifteen-week quasi-experimental study was conducted on two classes (n = 81) in order to investigate the effectiveness of SL VLE for language training in hospitality and tourism with a focus on speaking skills. The instruments included English speaking tests, an attitudinal questionnaire, and a semi-structured interview. The findings of the study indicated that language training activities in SL positively contributed to students' language proficiency progress. Besides, students have positive perceptions about the use of SL VLE in their training. It is recommended that language training programs in hospitality and tourism make more substantial use of virtual restaurants, hotels, resorts, and entertainment places in SL to enrich students' learning experience. Hospitality and tourism training institutions should spend resources on formal SL VLE training for teachers and students and build their SL facilities.

Keywords: *Virtual learning, SL, language education, hospitality, tourism, ESP.*

1. INTRODUCTION

New technologies are changing the administration, instruction, and learning styles in institutions of higher education at an increasing pace. This advance is essential to cater to the new generation of university students, ostensibly called digital natives [1–3]. With their early and prolonged exposure to technology, the current generation has raised demands and aspirations for their educational institutions to be digitally innovated. From higher education institutions, there is also a demand to leverage ICT solutions to account for this digital learners generation and meet their learning needs [4]. In such a context, e-learning and online learning are increasingly becoming the norm in many training programs. One of the most notable e-learning platforms that have a lot of potential in serving both students and academics to share educational materials, submit and return lessons, advertise and communicate online is the Virtual Learning Environment (VLE), especially SL. Large investments have been allocated for such virtual learning solutions in many universities [5,6], but the research that tackles the use and exploitation of VLE in higher education institutions is still limited. In Vietnam, although VLE solutions just recently made their way into English for Specific Purposes (ESP) training programs, they have attracted big interest, especially in hospitality and tourism training programs. As the interest in a popular VLE platform like SL is rising, its effectiveness in developing language proficiency for students needs to be explored. As a result, with a focus on language progress for ESP students after extensive use of SL learning environment, this study seeks to answer the following questions:

a. How do learning activities in SL VLE impact students' language performance?

b. How do students perceive the use of SL VLE for language training in hospitality and tourism?

2. LITERATURE REVIEW

2.1 Overview of Classroom Simulation

Simulation learning in a virtual environment is a teaching and learning method or assessment of learning directions based on a real context in the classroom. Students participate in activities that cater to their needs or are designed for assessment during the simulation process. The higher the educational level, of course, the more complex the simulation. Although creating simulated content is technologically challenging, most educators wish to build their own simulations that reflect their interests as learners. To achieve the best learning results, simulations should be formulated in such a way as to simplify real situations [7,8].

Using a simulator as a teaching/assessment strategy can be seen whenever the teaching method requires plentiful and visually stunning interaction. Preparation through a simulator includes the instructor's occasional involvement in a carefully orchestrated study plan. In a virtual learning environment, students are actively involved in school work as they solve problems and make decisions, as they do in the real world [9,10]. Besides, a simulation in the classroom involves time reflection and processing, which helps the student share their experience. Besides that, their learning ability is tested, and an evaluation is made at the end of the simulation. According to Sternig et al. [11], the finest simulations are those using an actual system with a high level of simulator awareness.

There are two major categories of simulations: simulations of role-play and dynamic simulations of the system. Both simulations are comparable but vary in focus and use of information technology. With roleplay simulations, students are allowed to play a prominent role in these classroom simulators. They take real-world positions in the challenges they have to solve. Such simulations concentrate mainly on making the student learn by doing. In these simulations, the database is fundamentally essential as teachers and students need to easily access, store and later retrieve the data they want. Different from roleplay simulations, dynamic system simulations enable the students to play the real - world roles in order to face real-life situations. Such simulations must therefore be based on mathematical frameworks of interconnected quantities.

A good classroom simulation learning experience's key factors are engagement and behavior. The study of Langbeheim & Levy [12] shows that students see participatory simulations as more useful because they allow deeper interaction with the system. Students must interact with the simulations in order to get a better understanding. When bad behaviors occur, the whole classroom simulation session can be negatively impacted [13]. In role-playing, students are more concerned with the identity of their roles than with their school identity. However, in real-life situations, students should return to their usual roles. Otherwise, their reputation will be affected.

2.2 Advantages and Disadvantages of Classroom Simulations on 3D VLEs

In recent years, the way we interact on the internet has changed dramatically. The web has grown into what is known as web 2.0, making available new and richer, more immersive forms of interaction. With web 2.0, the internet experience is no longer straightforward, boring text and image contents. Instead, users can collaborate, socialize, interact and share resources via platforms like Facebook, Twitter, Viber, etc. 3D VLE is a further advance from web 2.0 in that it offers a platform that supports three dimensional graphical, textual, and media-driven formats [14]. With 3D virtual learning environments, students can learn in real-time, explore, and even change the digital environments created by computers. Now the faster internet connection and more powerful hardware devices help 3D VLE become accessible to most parts of the developing world, creating a more significant community-based learning experience for students.

Figure 1 A community meeting in 3D VLE

Besides, the 3D VLE offers a very good individualized learning experience [15]. With a 3D VLE like SL, for example, students can select a virtualized ubiquitous 3D avatar and dress it up and change the appearance. They can also customize the time environment setting, camera view, and background music. During group work in 3D VLE, students can choose where to work with each other and which objects to interact with. However, this benefit of an individualized learning experience also comes with the problem of user tracking and monitor. Once teleported to other locations in VLE, there is no way the teacher can monitor his or her students, and the only way students can get support is to teleport back to where the teacher is staying.

Another benefit of 3D VLE is the space for learning [16]. While in traditional classrooms, especially in an urban setting, space is always a challenge as education providers are pressured to cut costs and usually provide the smallest possible space, virtual space for learning and collaboration is almost unlimited. This actually only depends on the server resources. Based on virtual cloud technologies, a whole big island surrounded by the seas can be dedicated to a classroom at very little cost, and students sometimes even have to fly around to explore the

space. Due to this spacing benefit, more and more and higher education institutions like North Caroline State University, National University of Singapore, University of Delaware, Stanford University, etc., are building their campuses in VLE like SL for their distance learning programs. The disadvantage of spacing in VLE, though, is that digital documents are not easily found as in a web 2.0 platform.

With the development of recent virtual reality (VR) devices like Microsoft Hololens, Occulus Rift S, the learning experience in 3D VLE can be further enhanced. When put on these VR glasses, the experience offered from 3D VLE like SL or the most recent Sansar becomes almost real-life. The combination of VR glasses and 3D VLEs promises to break down nearly all interaction and communication barriers in the digital space. Although there are still technology and cost challenges to overcome, studies from Abdullah et al. and Carbonell-Carrera (2018) [17,18] have shown that the combination of VR devices and 3D VLE brings a more effective learning environment than the traditional face to face interaction. These studies also show that high-quality requirements like fast internet connection, powerful CPUs, and good dedicated graphics card are barriers to deploying VLEs on a large scale at the moment.

To sum up, the advantages and disadvantages of classroom simulations on 3D VLEs discussed in the literature can be summarised in the following table.

Table 1. Advantages and disadvantages of classroom simulations on 3D VLEs

Advantages	Disadvantages
• 3D virtual environment. • Interaction through dialogue and collaboration [19]. • Promote interactive distance learning. • Support the development of distance communities [20]. • Provide useful tools for building virtual context, objects, and people [21]. • Simulation and experiential learning/roleplaying approach [22].	• Distraction factors. • Costly hardware requirements for internet, CPUs, and graphic cards • No tools to monitor and track students [23]. • Difficult to store digital documents

2.3 Language Training in SL VLE

Many studies have discussed the role of SL VLE in providing learners with input from the target language. As mentioned earlier, with its large open community of users, there are millions of native speakers in SL for students to explore and interact with. Due to the non-geographical requirements for participation, SL can easily bring native and non-native language learners together in a language course. Canto et al. [24] measure the oral communicative growth of language students via oral pre-and post-tests who were allocated at random to one of three research conditions: the experimental video conferencing group performed interactions with native peers through videoconferencing; the SL experimental group performed the same tasks with native peers in SL and (3) the control group conducted tasks face to face with student peers and was not allowed to interact with native experts. Their findings show the experimental groups outperform the control group in the oral speaking test. Likewise, during an SL 10-session, task-based course Chen [25] assessed the interpretation and success of EFL adult learners. The findings suggest that EFL learners are provided visual, linguistic support and efficient learning of languages through 3D multimodal tools in SL.

In addition, the 3D visually engaging nature of contents in SL helps illustrate many difficult linguistic concepts in language training programs. Legault et al. [26] investigate the individual differences in L2 output during the learning of 60 Mandarin Chinese words in two learning sessions, with each participant learning 30 words in SL and 30 words in a word-word combined association. Their results indicate that the major effect of second language learning context, supported by the 3D images and symbols in VLE, accounts for the success of students who learn Chinese vocabulary in SL. Moreover, as reported by Hung et al. [27], the visual 3D nature of SL can be helpful for English learners to differentiate prepositions such as “under”, “above”, “in”, “out” etc., when describing and locating objects in space. Other studies have also confirmed that SL effectively supports language acquisition by building an immersive learning environment that helps learners easily visualize the learning contents.

SL also offers many opportunities for promoting authentic language communication in the language training course. The most effective way of acquiring a language is to participate in a community in which the target language is used for real communicating purposes. In SL VLE, with the building affordance, students can practice and develop communication skills in English when they build objects. Huy et al. [28] claim that by exploring SL islands, students can use relia objects that they see in the real world like a bulletin board, a gallery, or a restaurant setting to ask and answer questions. This kind of authentic language communication helps students build vocabulary and enhance their understanding of language structures. Similarly, Chen [29] investigates English learners’ meaning negotiation in SL (SL). A group of adult English learners with diverse cultural/linguistic backgrounds in L1 participated in this task-based virtual class and used avatars to interact with peers in communication tasks via voice chat. Discourse samples were collected through oral production to examine their language patterns during a negotiated interaction. Findings suggest that bi-directed tasks with converging, mandatory, single-outcome conditions will stimulate more cognitive and linguistic negotiation processes involving interactional modifications – leading to more complex negotiation of meaning.

However, the 3D space in SL also causes problems for language learners, mostly when students work in groups to describe objects. Since SL gives different views to its users

like front view, side view, and rearview, it can be confusing when students do not have the same view of a certain object. In Wadley & Gibbs' [30] analysis of five years of study into the implications of introducing voice communications networks to virtual worlds, SL voice affordability brings negative features such as channel congestion, noise transmission, and some people's unwillingness to use voice with strangers online. Identity and impression management problems also play an important role in SL, as voice can build more trust, which is particularly important for business users while undermining privacy and the ability to hide social attributes, such as gender, that are important to other users. In addition, the limited body language in SL also causes difficulties. In Wigham & Chanier's [31] study, some of the disparities between the modes of communication of the virtual world and those of face-to-face correspondence are highlighted. Accordingly, due to the limited body language nature in SL, e.g., signaling to a student or making eye contact, the teachers need to address their learners by calling out the avatars' names. Berger et al. [32] reported that their students seldom used body language or eye contact when chatting in SL. To compensate for this, they tend to use other strategies like calling out names in the chat window. They conclude that "Interaction takes place in a spatial context and in many ways is influenced or shaped by this context … In online virtual worlds, the spatial context of interaction has to be graphically recreated" [32].

3. METHODOLOGY

3.1 Research Design

This pretest-posttest between groups quasi-experimental study was carried out in the school year 2019-2020 from 15th September to 31st December of 2019 (15 weeks) at a university in Vietnam. The sample to be analyzed in the current research consisted of 81 non-English major students from two classes in a language training program for hospitality and tourism. The research participants were selected through convenience sampling in order not to disrupt the university's training schedule and were divided into experimental groups (EG, n = 39) and control group (CG, n=42). Permission to study has been granted by the head of the Faculty of Foreign Languages, who is in charge of the training. Further information on the participants is provided in Table 2.

Table 2. Participants' demographic information

Group	CG (n= 42)	EG (n= 39)	Total (N)	Percentage (%)
Male	23	21	**44**	54.3
Female	19	18	**37**	45.7

For quantitative data collection, English speaking pretests and post-tests were delivered to students before and after the SL learning experience to find outperformance the difference between the two groups. These quantitative data were triangulated with qualitative data from questionnaires and interviews collected from EG at the end of the experiment. During the fifteen-week experiment, students in EG were required to do group work every week inside SL VLE. In most of the SL VLE sessions, students visited famous tourist sites, beautiful restaurants, hotels, resorts. They worked together to prepare a presentation to the whole class on what they saw and what they found interesting in the virtual field trip, as illustrated in Figure 2. Sometimes, they were also required to use the facilities in SL VLE to practice language structures they learned in the class, e.g., asking for direction, serving foods, choosing wine, etc. Students were also encouraged to explore SL VLE outside the class time if they want to.

Figure 2 A virtual field trip to Hollywood in SL VLE

3.2 Instruments

To collect quantitative data, speaking pretests and posttests were planned for two groups in the form of the Cambridge PET speaking test. The speaking test consists of 4 parts. Part 1 requires students to answer individually simple questions like "Tell us about your weekend," "How many hours a week do you study?". In part 2, students work in pairs to respond to a situation described by pictures. Part 3 asked students to discuss more complex situations in photos. In the last part, they discuss a topic given by the assessors. The total test time for each student is around 7-8 minutes. The speaking tests were evaluated by two independent raters and cross-checked with the Pearson correlation analysis to ensure the test score's reliability.

Also, the researchers developed a questionnaire to investigate students' perceptions of learning in SL. The questionnaire was designed on a Likert-type scale with five options ranging from strongly disagree, disagree, neutral, agree, and strongly agree. It has two main constructs: Technical experience in SL and Perceptions of learning in SL. The questionnaire was piloted on five students before usage. The internal reliability of the two constructs and the whole questionnaire is described in Table 3. All 39 participants in the experimental groups completed their questionnaire.

Table 3. Reliability of the questionnaire and constructs

Constructs	Number of items	Cronbach's Alpha value
Learning perceptions in SL	8	0.732
Interpersonal perceptions in SL	6	0.846
Total	14	0.793

Qualitative evidence comes from an in-depth interview. The purpose of the interview was to further understand the effectiveness of SL activities and to gain a comprehensive understanding of how SL students work together, the problems they have, and the efficiency of the activities. In total, 14 students were interviewed on a voluntary basis. The interview was conducted in Vietnamese to help participants understand the questions exactly and give their responses fully.

4. RESULTS AND DISCUSSION

4.1 Speaking Test Results

4.1.1 Pretest

The pretests of both CG and EG were marked by two teachers (rater A and rater B) to ensure the reliability of the pretest score for comparison, i.e., inter-rater reliability. The association of pretest scores by rater A and rater B in CG is presented in Table 4, and the correlation of pretest scores by rater A and rater B in EG is given in Table 5.

Table 4. Correlation of speaking pretests scores of the CG by two raters

		Spk_Pre_CG_Rater1	Spk_Pre_CG_Rater2
Spk_Pre_CG_Rater1	Pearson Correlation	1	,893**
	Sig. (2-tailed)		,000
	N	42	42
Spk_Pre_CG_Rater2	Pearson Correlation	,893**	1
	Sig. (2-tailed)	,000	
	N	42	42

**. Correlation is significant at the 0.01 level (2-tailed).

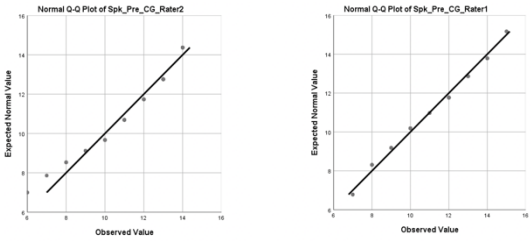
Table 5. Correlation of speaking pretests scores of the EG by two raters

		Spk_Pre_EG_Rater1	Spk_Pre_EG_Rater2
Spk_Pre_EG_Rater1	Pearson Correlation	1	,925**
	Sig. (2-tailed)		,000
	N	39	39
Spk_Pre_EG_Rater2	Pearson Correlation	,925**	1
	Sig. (2-tailed)	,000	
	N	39	39

**. Correlation is significant at the 0.01 level (2-tailed).

It can be inferred from the data in Table 4, Sig. (2-tailed) =.000 <.05, that there was a statistically significant correlation between the pre-test score of the rater A and the pre-test score of the rater B in the CG. The Pearson Correlation Coefficient for CG (r = 0.893) demonstrated a strong correlation between rater A and rater B in terms of CG pre-test scores. Likewise, as shown in Table 5, a strong correlation between the pre-test scores of A and the EG score of B is found (r = .925). Thus, with a strong inter-rater correlation between the score of the two raters, the inter-rater reliability of the pre-test can be confirmed. Rater A scores were chosen for the subsequent analysis.

In order to check that the underlying population follows a normal distribution, the pre-test scores of CG and EG were checked and graphically presented by Normal Q-Q Plot. Figure 3 shows that the scores of the two groups scattered along a rather straight line, which means that the



scores were normally distributed.

Figure 3. Normal Q-Q plots for speaking pretest results

With the speaking pretest score's reliability ensured, the mean scores of pretests of CG and EG were calculated. As shown in Table 6, CG pretests Mean score is 10.14, and EG pretests Mean score is 9.92. Clearly, there is a minimal difference between the two values. The mean score of CG (M=10.14, SD=2.40, n=42) is slightly higher than the mean score of EG (M=9.92, SD=2.65, n=39). To check whether there was a statistically significant difference, an independent samples T-test was conducted. The Independent samples T-test results from Table 6 show that the differences between the means of CG and EG are not significant (t=-0.39, df = 79, p = 0.70 > .05). So, the speaking performance of CG and EG was equal to each other before the treatment.

Table 6. Results of Independent Samples t-test and Descriptive Statistics for speaking pretest results

	Group						95% CI for Mean Difference	t	df
	Control			Experimental					
	M	SD	n	M	SD	n			
Pretest	10.14	2.40	42	9.92	2.65	39	-1.13, 0.90	-.39*	79

* p = 0.70 > .05

4.1.2 Post-test

As with the pre-test, the correlation of post-test scores between the two raters has been examined. Table 7 revealed a correlation of the post-test scores by rater A and rater B in CG, and Table 8 presented the correlation of the post-test scores by rater A and rater B in EG.

Table 7. Correlation of speaking posttests scores of the CG by two raters

		Spk_Post_CG Rater1	Spk_Post_CG Rater2
Spk_Post_CG_Rater1	Pearson Correlation	1	,873**
	Sig. (2-tailed)		,000
	N	42	42
Spk_Post_CG_Rater2	Pearson Correlation	,873**	1
	Sig. (2-tailed)	,000	
	N	42	42

**. Correlation is significant at the 0.01 level (2-tailed).

Table 8. Correlation of speaking posttests scores of the EG by two raters

Correlation of speaking posttests scores of the EG by two raters

		Spk_Post_EG Rater1	Spk_Post_EG Rater2
Spk_Post_EG_Rater1	Pearson Correlation	1	,921**
	Sig. (2-tailed)		,000
	N	39	39
Spk_Post_EG_Rater2	Pearson Correlation	,921**	1
	Sig. (2-tailed)	,000	
	N	39	39

**. Correlation is significant at the 0.01 level (2-tailed).

As can be seen from the correlational analysis, Table 7 shows that the correlation between speaking post-test scores by rater A and those of rater B in CG was statistically significant (Sig. 2-tailed =.000 <.05). The Pearson Correlation Coefficient for CG is r =.873, and the value proved a strong correlation between rater A and rater B. Similarly, as shown in Table 8 (Sig. 2-tailed =.000<.05, r=.921), between the A rater and B rater for EG, there was a strong correlation. Consequently, the post-test's high inter-rater reliability was ensured with a strong inter-rater correlation between the scores of the two raters. The scores of the rater A were chosen for the subsequent analysis.

The normality test was used, similar to the pre-test test, to analyze the distribution of CG and EG post-test scores. According to the results of the Q-Q Plot, the data from each group formed a straight line. Therefore, it was concluded that both groups' posttest scores have a normal distribution and the Independent Sample T-test is the test that will be used.

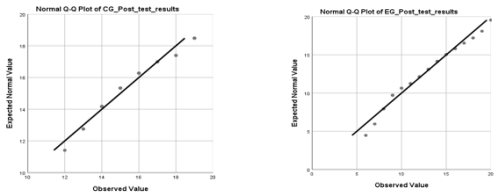


Figure 4. *Normal Q-Q plots for the speaking posttest results*

From Table 9, the general descriptive statistics of posttest scores of CG and EG show that the posttest mean score of EG (M=15.87, SD=2.08, n=39) is considerably higher than that of CG (M=12.45, SD=3.67, n=42). Subsequently, a test would be conducted to figure out whether the difference between the mean scores of CG and EG was statistically significant. As demonstrated in Table 9, the Independent Samples T-test proves that the difference between the posttest means of CG and EG existed, and it was statistically significant (t=5.10, df=79, p<0.05). Hence, the speaking performance of CG and EG after the treatment changed. Specifically, the speaking performance was considerably higher for EG.

Table 9. Results of Independent Samples T-test and Descriptive Statistics for speaking posttest results

	Group						95% CI for Mean		
	Control			Experimental			Difference	t	df
	M	SD	n	M	SD	n			
Pretest	12.45	3.67	42	15.87	2.08	39	2.09, 4.75	5.10*	79

* p < .05

The improvement can be visually seen in Figure 5.

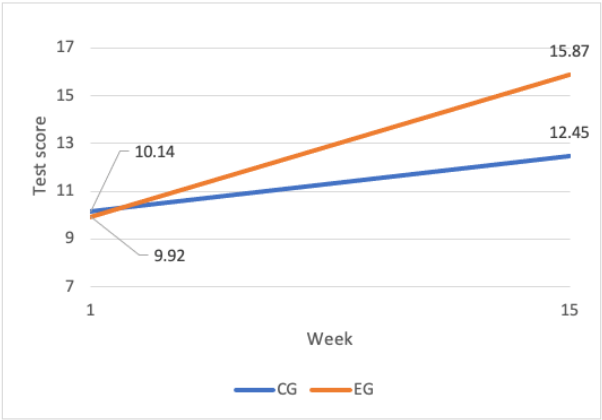


Figure 5. *Comparison of means of pretest and posttest scores*

4.2 Questionnaire

4.2.1 Learning perceptions in SL

To begin with, navigating in SL was a recognized challenge for the majority of students. 51.3% of the participants claimed that the virtual learning environment was more challenging to navigate than they would like it to be, as illustrated in Figure 6 (M=3.54, S.D.=0.82, 10.3% strongly agree, 41% agree). Finding course materials in the virtual learning environment was another issue, with 56.4% of the participants gave a neutral opinion about finding course materials in SL.

Figure 6 also shows that most of the experimental group students had positive learning experiences with SL's learning activities. In specific, nearly three-quarters of the informants (71.8%) believed that they had improved their technical learning experience by using the virtual learning environment (M = 3.87, S.D. = 0.83, 20.5% strongly agree, 51.3% agree). Similarly, roughly three-fourths of the questionnaire respondents claimed that there was something interesting at the beginning of the lesson that got their attention (M = 3.92, S.D. = 0.84, 25.6% strongly agree, 46.2% agree).

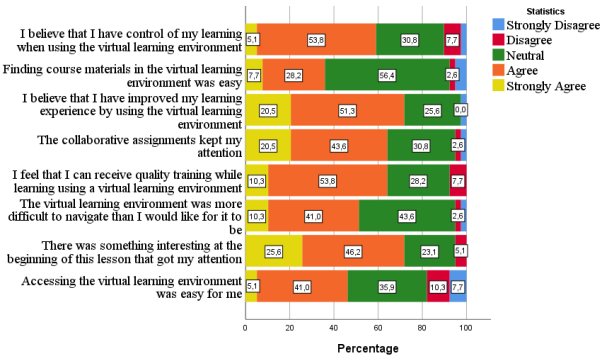


Figure 6. *Learning perceptions of students in SL*

Around two-thirds of the students felt that they had control of their learning when using the virtual learning environment (M = 3.51, S.D. = 0.82, 5.1% strongly agree, 53.8% agree). A similar percentage of students (64.1%) felt that they could receive quality training while learning

using a virtual learning environment (M = 3.67, S.D. = 0.77, 10.3% strongly agree, 53.8% agree). Likewise, most of the students had a positive perception of the collaborative assignment activities in their SL environment (M = 3.77, S.D. = 0.90, 20.5% strongly agree, 43.6% agree).

To sum up, apart from several technical difficulties, the learning perceptions for most students in SL were positive.

4.2.2 Interpersonal perceptions in SL

The majority of the experimented students displayed positive perceptions about interpersonal interaction in SL. Statistically, the mean values of all items of this construct lay in the interval between 3.72 to 5.00.

About three-fourths of the students claimed that they felt a sense of community in SL that was different and helpful (M = 3.87, S.D. = 0.77, 15.4% strongly agree, 61.5% agree). Likewise, a significant portion of the target sample reckoned that they had a positive experience using SL in the training session (M = 3.90, S.D. = 0.72, 17.9% strongly agree, 56.4% agree). Besides, many students felt more motivated because they used SL to support hospitality speaking practice activities (M = 3.79, S.D. = 0.73, 15.4% strongly agree, 51.3% agree).

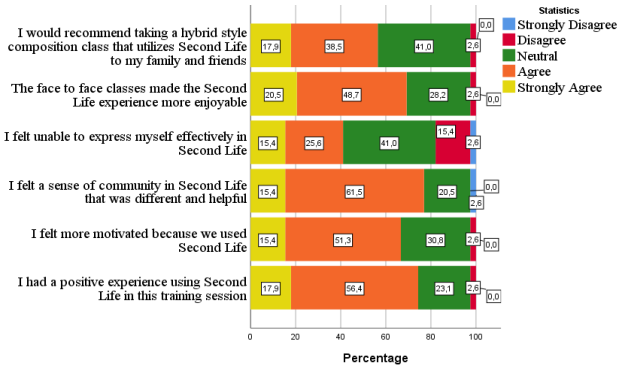


Figure 7. *Interpersonal perceptions of students in SL*

To ensure that students had good online speaking practice experience in SL, the teacher gave them some training in the face to face classes. This was recognized as a good help, with 69.2% of the students thought that the offline meetings made SL more enjoyable (M = 3.87, S.D. = 0.77, 20.5% strongly agree, 48.7% agree). 56.4% of the participants said they would recommend taking a hybrid style class that utilizes SL to their family and friends (M = 3.72, S.D. = 0.79, 17.9% strongly agree, 38.5% agree). Only 41% of the participants claimed to have difficulty expressing themselves effectively in SL (M= 3.36, S.D.=1.01, 15.4% strongly agree, 25.6% agree).

4.3 Interview

4.3.1 Learning experience in SL

Many students in the language training program for hospitality and tourism reported a positive experience in their SL virtual learning environment. They enjoyed the navigation and virtual sightseeing: “What a wonderful experience in this course! SL application leads me to a lot of virtual destinations that look like real ones. I can jump, run even fly to see colorful, fantastic scenes in this world. It is so funny and breathtaking.” (S5). Several students also believed that the SL virtual learning environment is a promising new approach to language learning, as admitted by S12: "SL is an excellent potential application that teachers can use to teach English in a totally different approach. At first, it requires a great amount of time to get used to it, such as how to teleport to a certain place or how to move your characters. I think my learning experiences have been enjoyable, despite some struggles at the beginning because I was not used to the platform yet, and until now, I still have trouble navigating in the game. I am amazed at how people can create such a massive and beautiful world with much realistic interaction.” Some students were excited to share their experience in a specific place like S10: “I visited Love and Harmony Restaurant, a beautiful and romantic place for dining or dating. I tried to visit every corner, but the place was so large that I could not finish within 60 minutes. Even though I could not find my friends there, I did have a great time exploring the restaurant, the pier, and the orchid. It was fantastic”.

However, students also reported a negative experience with technical issues like slow internet connection and connection devices: “Laptop was not strong enough to run SL smoothly. Sometimes, the Internet connection was interrupted” (S14). Due to this issue, several students have to share computers with their classmates: “I belong to the Tourism group, but unfortunately I had technical problems with my computer. However, I was so pleased to hear lots of experience sharing from the lecturer and my classmates. I recognize that SL is beneficial for teaching English and other subjects because there are hundreds of places and destinations in virtual life. Looking at the photos taken by my group members, I really enjoy the way that the app makes places and objects touchable and feelable. It would be interesting to introduce to my students where technology is available to access.” (S3).

4.3.2 Communication experience in SL

SL virtual environment allowed for real-life communication and collaboration experience. Quite a few students like S2 appreciated this feature: “I chat with them and invite them to sit down in a circle with me” or S8: “Learners can engage lessons through field trips in the SL. They can stroll, run, fly, and talk about scenes around them during the trips, so they can enrich their new vocabulary by learning through 3D scenes. Learners can describe where they are staying and give their direction to look for another. Learners also could share experiences about what we have just seen after the trip.”

Several students valued the ability to have their avatar acting as a webcam in traditional videoconferencing platforms: “I can communicate with other learners in SL, which is an advantage to make students feel free to raise their voice. In some cases, like learning via Zoom or GG meet, students may find it hard to express themselves because of their language ego. However, they will feel safer to express their opinions in SL due to the fact that their voice can't be recognized” (S11). The chat box in SL

virtual environment is also used frequently for collaboration among students like “I can both chat and speak with them” (S14) or “We can discuss a lot of things in the group chat, and it's amusing to look at their avatars and see how different they are from their real-life images" (S7). The ability to simulate distance in voice communication is another feature that students enjoyed while collaborating in the virtual environment, as suggested by S9: "We can discuss a lot of things in the group chat, and it's amusing to look at their avatars and see how different they are from their real-life images.”

Sometimes students were not happy with the voice quality in SL virtual environment: “ I mostly interacted with them by voice chat because it was useful to improve speaking skills. However, the sound was not so clear. Sometimes we can’t communicate and discuss by the voice system in the game. Thus, we have to guess what activities my classmates are doing.” Again, internet connection and connection devices like microphone were the problems for several students when communicating with their friends: “Actually the first thing I need is a good internet connection. The second thing is a good set of microphones and speakers to be able to communicate well. After having gotten all those things, I will try to open conversation with them if I see any of them in obvious places like the hall of a University or some famous place like Bucking Ham Palace” (S5).

5. DISCUSSION

From pretest-posttest data, it was discovered that one of the reasons experiments in large classes were beneficial was that it accommodated the large class sizes in tourism and hospitality training. Students in the experimental English for hospitality and tourism class performed significantly better in the speaking posttest; a point corroborated in the literature. A study was conducted at the University of Manchester, which tested the hypothesis that the selective use of virtual learning environments can overcome the challenge of teaching and delivering educational material to large cohorts. The impacts were that virtual learning environments are beneficial provided that certain conditions are followed [33].

Other benefits of VLE use as revealed in the questionnaire data are positive learning perceptions and increased interpersonal interaction. The complexity of the SL environment seems to affect students’ perceptions of using technology. This impact is often positive: the anonymity provided by avatars and the multi-dimensional nature of the environment motivate shy students to participate. In an immersive 'fictional' environment, students can hide their real identities and take on any new shape they like. Moreover, the teacher's status, which can be perceived as intimidating by shy students and thus discourage them from participating, is also undermined. In the traditional classroom, a teacher's superior status is more obvious; for example, teachers tend to be older than most of the students and, more often than not, position themselves in front of the class. Such factors are put out of play in the SL virtual environment as it is impossible to tell a person’s age (apart from the voice, which can be manipulated). Another benefit that students enjoy is that avatars can be programmed to acquire different poses or position themselves in different places without it being controversial. As a result, the student who is not talkative in real life may be more inclined to participate more actively in the virtual environment.

Findings from the questionnaire showed that students perceive permanent materials availability as a benefit they appreciate. This is consistent with literature where permanent materials availability is considered a benefit. As reported in the questionnaire, increased interpersonal interaction can be attributed to more engagement with visual 3D artifacts available for information exchange. The results are consistent with current empirical data showing that 3D audiovisual artifacts in the virtual learning environment served as rich resources for collaboration by students. [7,34].

With reference to the framework given in Lier’s [35] ecology of language learning, a positive attitude towards the learning environment is likely to motivate students to further explore the affordances of the learning environment more actively. With a positive attitude, students may spend the time required to learn the affordances from the virtual environment and gradually acquire adequate technical skills, which in turn further motivates engagement and participation. However, if participants are discouraged by factors such as the poor internet connection or system lagging, they may be reluctant to put much effort into learning the different functions of SL. Prior training is necessary to ensure that all technical issues are minimized for students. So, obtaining sufficient technical skills and maintaining a positive attitude towards the online learning environment chosen for language learning are vital factors for student participation during an English for hospitality and tourism course in SL. Otherwise, the learning of the target language can be compromised.

Findings from the interview data show that dealing with the digital divide poses some challenges for students when joining learning activities in the virtual learning environment. The students in this study tried to overcome the issue by sharing devices inside the class or by providing extra support for students who had difficulties accessing the system outside their class, which corroborates with Wolff [36]. Jackson and Fearon [37] argued that the technical problems of interoperability, lack of reliability of technology and problems with access and authentication systems pose challenges to the adoption of VLE. These factors corroborate the findings of the interview in this study. Technical issues and how the system was accessed inside and outside the language class have sometimes been identified as barriers to system utilization. These barriers, however, did not stop students from using the system. On the contrary, these challenges and barriers have encouraged them to become more actively involved in learning activities. From the interview, one can see that students generally enjoyed the learning activities in their virtual environment a lot. They reported satisfactory communication experience in the system as well.

6. CONCLUSION

From the results of the speaking post-test after the fifteen weeks treatment, it could be concluded that learning activities in SL VLE did affect the experimental group's speaking performance in a positive manner. Students in the experimental groups showed significant improvement in their speaking performance after the treatment. Besides, learning activities in SL VLE positively affected the hospitality and tourism students' perceptions towards their language training program. They felt it interesting and motivating to join communication activities with the support of SL VLE. Most students also cognitively recognized that SL was useful and effective to their overall learning experience and interpersonal communication. Thanks to SL VLE, the experimental students participated more actively in and concentrated longer on lessons. They also wanted to work collectively much more with their classmates and looked forward to having similar learning experiences more often. The use of SL VLE brings technical challenges too. Issues reported were mostly about slow internet connection and poor hardware processing power. The digital divide is another issue that needs to be addressed.

To make virtual learning sessions successful, good preparation is important. When letting students explore SL VLE on their own, it is challenging for teachers to take control. Therefore, the teachers must prepare the learning activities well beforehand and provide clear instruction. However, the joy and positive learning experience for students are very worthwhile. Prior training in face-to-face sessions is also recommended to minimize the technical challenges for students.

Since this research is carried out in a higher education setting, it is necessary to use convenience sampling. Therefore, the generalization of results is not as strong as in random sampling. The small number of participants in both CG and EG is another limitation. While researchers have tried their best to monitor the variables, the findings can be influenced by various time shifts and computer lab conditions. This is why the efficiency of SL VLE activities can be affected. It is recommended that further studies into the field of virtual learning environments be extended to other language skills like listening, reading, and writing. If randomly selected participants at different levels of English were possible, insights into the use of virtual learning environments in language teaching could be better generalized.

AUTHORS' CONTRIBUTIONS

Nguyen Ngoc Vu, Vo Thuy Linh, Nguyen Thi Thu Van, Nguyen Thi Hong Lien conceived and planned the experiments. Vo Thuy Linh and Nguyen Thi Thu Van carried out the experiment. Nguyen Ngoc Vu, Nguyen Thi Hong Lien took the lead in writing the manuscript. All authors provided critical feedback and helped shape the research, analysis and manuscript.

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