Title: The crossroads of English language learners, task-based instruction, and 3D multi-user virtual learning in Second Life

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Abstract: English as a foreign language (EFL) learners' task-based practices in 3D multi-user virtual environments are a dynamic avenue that has attracted research attention in current second language acquisition literature. This study explores EFL adult learners' perceptions and language practices in a 10-session, task-based course in Second Life (SL). A full-blown task-based syllabus that capitalized on meaningful real-life tasks was designed and documented in this study. Employing the grounded theory approach and triangulating multiple qualitative data sources, two core themes emerged: factors that influence SL learning experience and effects of task-based instruction on language learning in SL. SL was evidenced as a viable learning environment due to its conspicuous features, immersive and virtual reality, sense of tele- and co-presence. This study implicates that 1) 3D multimodal resources in SL provide EFL learners with visual and linguistic support and facilitate language teaching and learning; and 2) tasks that draw upon SL features, accommodate learners' cultural/world knowledge, and simulate real-life scenarios, can optimize learners' virtual learning experiences.

1. Introduction

The new millennium has blurred the conventional boundaries of English language instruction in that English lessons are no longer taught solely by means of printed books and chalk and blackboard, but via electronic learning management systems (e.g., Blackboard, Moodle) or digital tools (e.g., Skype, wikis), which extend learning beyond the classroom. The plurality and diversity of English teaching and learning in the digital age are, nevertheless, challenging both English language teachers and learners (Godwin-Jones, 2014). It is worth noting the substantial time that so-called digital natives (Prensky, 2005a, 2005b) spend on online games and why they are so immersed in 3D multi-user virtual environments (MUVEs). For instance, *World of Warcraft*, a popular massively multiplayer online role-playing game, has drawn significant attention from digital natives worldwide as have other MUVEs, such as *Active Worlds, SimCity, Quest Atlantis*, and *Second Life* (SL) (Peterson, 2016a; Sadler, 2012). These MUVEs may hold pedagogical implications for education, evidenced by the fact that educators and institutions have increasingly embraced the paradigm of 3D virtual learning (e.g., see Harvard University, 2016; University of Washington, 2016).

The new challenge faced by educators and teachers in the 21st century is finding ways to better engage and motivate the Net Generation. According to the *Horizon Report* (Johnson, Levine, Smith, & Smythe, 2009; Johnson, Smith, Willis, Levine, & Haywood, 2011), 3D MUVEs, such as SL, have been envisioned as innovative and immersive technologies that may transform conventional ways of teaching and learning. By collaborating with peers in immersive learning environments, students can deepen their understanding of the subject matter, transfer knowledge to real-world contexts, and develop a sense of belonging through peer scaffolding and virtual community building (Dede, 2012; Ganem-Gutierrez, 2014; Grant & Clerehan, 2011; Hew & Cheung, 2013). Similarly, the positive correlation between the affordances of SL (e.g., immersive simulation, multimodal communication, avatar identity) and student learning outcomes has also been witnessed in prior SL research. To illustrate, immersive simulations that mirror real-world scenarios in SL are found to enhance experiential learning, enable students to make meaningful connections, foster creativity, and promote active learning (Coffman & Klinger, 2007; Dawley & Dede, 2014; González-Lloret & Ortega, 2014; Kluge & Riley, 2008; Sadler & Dooly, 2013). The avatar-based environment as a playful, less threatening sphere also boosts confidence, heightens engagement, and stimulates risk-taking more than a 2D text-based setting (Downey, Mohler, Morris, & Sanchez, 2012; Peterson, 2016b; Wang, Anstadt, Goldman, & Mary, 2014). The cost-effectiveness, flexibility, and simulation of an SL-enabled environment further optimizes project-based learning activities through higher levels of collaboration and a sense of presence without the constraints of expensive lab equipment or a linear approach to problem-solving (Vrellis, Avouris, & Mikropoulos, 2016; Wang & Burton, 2013).

It is commonly agreed that language learners' immersion in a country where they are exposed to authentic and rich language input of the target culture is most conducive to second language acquisition (SLA). Nevertheless, the reality is that not everyone can afford the cost of traveling to a country where the target language is spoken, let alone stay there for an extended period of time (Lee & Gerber, 2013). A case in point is that English as a foreign language (EFL) learners usually switch back to their native language after leaving the English classroom (Chang, 2011; Cheng, 2000). The lack of regular interaction with native speakers, coupled with teacher-led, grammar-driven instruction, further lead to EFL students' learning anxiety and less

willingness to communicate in English (King, 2013; Reinders & Wattana, 2014). Despite these constraints, incorporating real-world tasks to make English learning more meaningful, experiential, and engaging, should not be sacrificed. SL as a potential instructional platform to maximize language learning has also been evidenced in prior task-based research in the 3D arena (Deutschmann & Panichi, 2009; Jauregi, 2016; Lan, 2014; Liou, 2012; Peterson, 2016b). For example, as an immersive environment, SL provides a dynamic space for language learners to work on authentic, interactive problem-solving tasks. Features afforded by SL, such as task simulation, real-time collaboration, identity exploration, and flexible multimodality, can foster intercultural communication competence and negotiation of meaning (Canto, de Graaff, & Jauregi, 2014; Jauregi & Canto, 2012); reinforce engagement, learning autonomy, and sense of belonging during task-based interaction (Deutschmann & Panichi, 2013; Peterson, 2010a, 2012); enhance language acquisition through synchronous multimodality (Wigham & Chanier, 2015); and facilitate real-world task delivery that transcends physical boundaries (Chun, Smith, & Kern, 2016; González-Lloret, 2015; Ortega & González-Lloret, 2015). These positive findings suggest that SL could be an innovative alternative to today's conventional language education and make English instruction more engaging, creative, and authentic.

As promising as SL may sound for language education, the issues faced by EFL teachers in the digital age are as follows:

- Why would EFL learners prefer SL for practicing English than attend a traditional English class?
- How do the features afforded by SL enhance students' virtual learning experience?
- Do students perceive task-based practices in SL to be more effective and engaging than in a traditional class or in 2D environments?

These questions have been the motivation for this study in exploring EFL learners' task-based language practices and perceptions in this vibrant, complex 3D virtual sphere.

2. Research background

2.1. SL as a 3D MUVE

Developed by Linden Lab and launched in 2003, SL is one of the most popular 3D MUVEs; it allows users to interact with each other through avatars of their own creation. More than 36 million SL accounts have been created, and the numbers continue to increase (Linden Lab, 2013). The Linden dollar (L$), a currency used in SL, is exchangeable for real-world money to allow users to buy or trade virtual properties. SL users, known as *residents*, can modify the appearance of their avatar (e.g., by changing their outfit, look, or shape), rendering their virtual identities even more versatile and creative. Unique features in SL enable avatars to communicate with each other using voice or text chat, or instant messaging (IM); perform nonverbal gestures (e.g., dancing, yawning, laughing); teleport or fly to *in-land* locations, simulate real-world routines; use building/scripting functions to create 3D objects; and take snapshots of virtual activities through a built-in camera.

Although SL shares similar features with massively multiplayer online role-playing games, it differs in several ways. For example, residents in SL do not need to follow a storyline or game-based quests to successfully accomplish a task (e.g., a step-by-step procedure to fight a dragon) (Hew & Cheung, 2013). SL allows residents to easily build and customize their own virtual worlds through action scripting and

object building in 3D form (Sadler & Dooly, 2013). This is referred to as *metaverse*, a computer-generated immersive environment that mirrors the real world and is co-constructed by residents using their imagination (Dawley & Dede, 2014; Kluge & Riley, 2008). As a result, SL residents can carry out a myriad of real-world activities, ranging from conducting a professional business meeting to visiting an art gallery for entertainment (Wang & Burton, 2013). Therefore, SL residents have total freedom and flexibility to live their own second lives and create their virtual personas.

2.2. Task-based language teaching in SL

The potential benefits that SL may bring to language instruction have attracted a growing number of private institutes, such as *Immerse Learning* (formerly known as *LanguageLab*) and educational organizations, to build virtual classes and islands for experimenting with SL for language instruction (e.g., see British Council Isle, 2016). Language teachers can now hold virtual classes to simulate real-world tasks (e.g., checking in at an airport or dining at a restaurant) for student avatars to practice their target language with other avatars worldwide without the cost of traveling (Canto et al., 2014; Clark, 2009; Cooke-Plagwitz, 2009; Lee & Gerber, 2013). As such, SL offers flexible learning opportunities by transcending the physical boundaries of a traditional classroom and conventional asynchronous online learning (Peterson, 2012; Vernon, Lewis, & Lynch, 2009; Wang & Burton, 2013).

SL as an immersive learning environment has also drawn SLA researchers to examine the feasibility of adopting it as a potential research avenue for task-based language teaching (TBLT). As Doughty and Long (2003) stressed, the theoretically sound and pedagogically feasible principles of TBLT—such as authentic tasks, learning by doing, rich input, inductive learning, collaboration, and individualized instruction—make it suitable for operationalizing in a virtual environment. Ortega and González-Lloret (2015) also proposed *technology-mediated TBLT* as an innovative framework that has the potential to transform conventional ways of teaching, and to empower learning when technology and authentic tasks are integrated. Three criteria need to be met in order to foster the marriage of technology and tasks: real tasks are not simply artificial exercises or activities transferred to a digital platform; teachers and educators should be aware of the implications that technology-mediated TBLT can bring to the construction of knowledge in education and language learning; and curriculum design and appropriate choice of technology should be carefully planned and integrated in a full programmatic cycle from needs analysis to task selection, and to evaluation (González-Lloret & Ortega, 2014).

Building on these principles, TBLT research conducted in SL has revealed positive findings in relation to learners' task-based performances in foreign language acquisition. Jauregi, Canto, de Graaff, Koenraad, and Moonen (2011) examined the effects of task design and its principles (e.g., rich input, negotiation, meaning-focused) built into SL on fostering intercultural communication competency and authentic interaction between two Spanish learners and two teachers. Their European Commission project found that problem-solving and interactive tasks that are real-world-like can optimize learners' target language acquisition while enhancing their intercultural competency and spontaneous communication skills. They also suggested that task design should operationalize the affordances of SL, such as task simulation, spontaneous interaction, and real-world unpredictability, in order to stimulate more authentic oral output while developing intercultural communication competency.

Jauregi and Canto (2012) examined Spanish learners' interaction patterns in intercultural communication tasks with native speakers or peers in three settings:

Adobe Connect, SL, and a traditional class. They found that SL stimulates more negotiation patterns, as triggered by lexical difficulties and cultural misunderstanding, than the other two settings. SL also provides richer opportunities for learners to interact with native speakers and allows them to perform real-world tasks in avatar form. As such, SL bolsters learner engagement and participation as opposed to students simply looking at pictures in a textbook or on slide presentations in a traditional class setting. Building on this finding, another study on intercultural negotiation in both video chat groups and SL groups also suggests that students perceive technology-mediated TBLT as a positive innovation for foreign language learning and intercultural understanding (Canto, de Graaff, & Jauregi, 2014).

In addition to Spanish language learning, the implementation of TBLT in SL has also attracted attention from other foreign language researchers investigating whether the positive results can also be evidenced in other target languages. For example, Lan, Kan, Hsiao, Yang, and Chang (2013) adopted a three-stage teaching model of cognition, usage, and expansion (CUE) for beginners in Chinese language in SL. They argued that certain criteria need to be met in order for a virtual Chinese language class to be successfully delivered in SL:

- Training learners in basic linguistic skills (e.g., the Chinese phonic system) and technical skills (e.g., functioning in SL) before the virtual class will better prepare them to tackle the expected task demands.
- Task execution should be aligned with SL features so that it is relevant to the learners.
- Task design should be meaning-focused, include problem-solving, and maximize social interaction in task completion.

Using the CUE model, Lan (2014) found that immersion in real-world tasks in SL improves Chinese language learners' in-class oral communication skills more significantly than those in a traditional class. Furthermore, learning in a 3D immersive environment is more beneficial in accelerating vocabulary acquisition (Lan, Fang, Legault, & Li, 2015). SL is hence perceived as a unique learning environment for foreign language acquisition and collaborative immersion through simulating real-world scenarios (Lan, 2014).

In a similar vein, task-based research in SL targeting EFL learners has been growing over the last decade. For example, Deutschmann, Panichi, and Molka-Danielsen (2009) examined EFL doctoral students' participation patterns in oral presentations (i.e., turn-taking and floor space) drawn from open-ended tasks conducted in SL. They discovered that the impact of teacher roles and task type could either facilitate or hinder active participation and levels of engagement. That is, teachers' supportive moves (e.g., encouragement) were conducive to more student-initiated linguistic cues and active involvement in SL. EFL learners' interactions with the affordances of SL (i.e., immersion in a 3D lecture theatre in the study) also fostered learner participation and oral output. Additionally, students who tended to be shy in the real world became more proactive and able to keep the conversation flowing when cloaked in the anonymity of their avatar selves, thereby developing a sense of autonomy and belonging (Deutschmann & Panichi, 2009, 2013).

Liou (2012) explored EFL college students' attitudes toward a computer-assisted language learning course conducted in SL. Overall, students perceived SL as an optimal virtual environment for language learning due to its features, such as immersive collaboration and real-world task simulations in 3D mode. The 3D environment also facilitated real-world task delivery, which is difficult to manage in a conventional class and promoted authentic interaction. Liou also argued that an

ecological language learning system should be implemented by using pedagogically sound, sense-making tasks instead of relying on the novelty value of technology alone.

Replicating his task-based research in *Active Worlds* (Peterson, 2006), Peterson (2012) conducted four task-based interaction sessions (i.e., one decision-making task, two opinion-exchanging tasks, and one presentation) with eight Japanese EFL students using text chat in SL. Discourse analysis of data, drawn from interview transcripts, researcher notes, and post-study surveys, shows that these EFL students perceived their first SL learning experience as beneficial, more enjoyable, and less stressful than a traditional class. The results also validate Peterson's findings from his 2006 study that EFL students were engaged in collaborative interaction and used different social management strategies to provide peer scaffolding, and maintain and facilitate the discourse flow. The avatar presence also boosted student engagement and sense of autonomy; and text chat as a communication tool further encouraged their target language output in negotiating meaning during the task (Peterson, 2012; 2016b). Finally, non-verbal cues displayed in the text chat raised the awareness of EFL learners to maintain rapport and avoid communication breakdowns (Peterson, 2010a).

As promising as SL is for language education, caveats such as technical demands, platform stability, skills mastery, time investment, and legal issues have been noted (Dawley & Dede, 2014; Hew & Cheung, 2013; Liou, 2012; Trinder & Moffat, 2009). Without taking these factors into consideration, the benefits that SL brings to instruction may create unintended side effects. That being said, Cooke-Plagwitz (2008, 2009) argued that, if planned and monitored carefully, implementing SL in language curricula still holds great potential for simulating real-world language immersion and promoting authentic target language learning.

3. Research question

Although studies on the implications for research and pedagogy of SL for SLA have grown since its launch in 2003, researchers also acknowledge that this 3D MUVE remains a relatively under-investigated research area compared to its 2D counterparts (Downey, Mohler, Morris, & Sanchez, 2012; Peterson, 2010a). Specifically, voice-based, task-driven research in SL still deserves more empirical attention in the SLA field (Peterson, 2012). To advance SL literature and task-based research with a focus on EFL learners, this study intends to provide empirical evidence of EFL learners' 3D virtual learning experiences in task-based practices via voice chat in SL. The core research question that guides this study is, "What are EFL learners' perceptions of practicing oral English in a task-based virtual class in SL?" This question is exploratory in nature so as to examine EFL learners' attitudes toward their language learning experiences of task-based instruction in SL. It also aims to discover why EFL learners are drawn to SL for practicing English; how they perceive learning English via a task-based approach in SL versus a physical class; and what kinds of features afforded by SL will impact their language learning experiences and learning outcomes. The study also intends to investigate the positive effects of virtual learning on language learners' perceptions reported in the literature on SL research.

4. Methodology

4.1. Setting

Due to its open access and the free resources available to all language learners and teachers around the world since 2006, VIRTLANTIS, a virtual island in SL, was

selected as the research site (http://www.virtlantis.com/). Since all the language courses offered in VIRTLANTIS are free, increasing numbers of language learners regularly visit VIRTLANTIS to practice a target language or make friends with others from all over the world. In VIRTLANTIS, avatar users can access any of the 3D resources available on the island to facilitate their language learning or teaching. For instance, they can build 3D objects in *Sandbox*, simulate real-world activities by activating various real-world scenes configured in *Holodeck* (e.g., a cinema), or conduct a virtual class in relaxing venues (see Figure 1).

<div align="center">(insert Figure 1 here)</div>

Figure 1. A class held in Rose Garden on the VIRTLANTIS island

4.2. Participants

Notecards were sent to all the VIRTLANTIS members to invite them to participate in this study. At the outset of the study, 15 participants were recruited. However, due to individual schedule conflicts or outside commitments, some students withdrew, reducing the total class size to nine by the end of the study. These were nine EFL adult learner participants eager to improve their English speaking proficiency. Some were international exchange students at a university in Sweden hoping to enter a graduate program or pursue a career that demanded advanced English proficiency. These students were contacted through their former English teacher, who also used SL as a teaching platform. Several participants were new to SL and registered for a new account only in order to participate in the course. Additionally, most participants had never attended a language class in SL conducted in English or one that followed a well-planned task-based syllabus design.

This linguistically and culturally diverse group was made up of five female and four male students from Europe (Spain, Sweden, France), Asia (India, Thailand), the Middle East (Iran, Saudi Arabia), and Africa (Egypt). Their age ranged from 21 to 55; and their language proficiency level ranged from beginner to upper-intermediate, as based on the American Council on the Teaching of Foreign Languages standards. Since student participants resided in different time zones, a timetable was sent to them via Google Docs before the study started to determine the most suitable time for all to attend the SL class synchronously. The participants accessed SL from home, using their own computer, and a headset or a built-in microphone in order to communicate via voice chat. To protect participants' confidentiality, they were informed that their real-world identities would not be revealed since their avatar names were not directly linked to their real names, and that unique codes would be created to connect the data with their avatar initials only. Their informed consent was also sought during the pre-course session in SL.

4.3. Data collection

4.3.1. Task-based design. To align with a theoretically grounded and pedagogically driven task design, *tasks* should meet criteria such as meaning-focused, goal-oriented, outcome-evaluated, real-world-related, and problem-solving (see Ellis, 2000; Skehan, 2003). Task principles, such as spontaneous interaction, negotiation of meaning, cooperative interaction, and communication strategy use, should also be anchored in a rigorous task-based design (see Willis, 1996). Tasks that are meaningful, authentic, communicative, challenging, and engaging will stimulate learners' cognitive and linguistic processing (Duff, 1986).

Nunan (2006) has suggested that a task-based syllabus design should take into account the following principles and practices:

- A needs-based approach to content selection.
- An emphasis on learning to communicate through interaction in the target language.
- The introduction of authentic texts into the learning situation.
- The provision of opportunities for learners to focus, not only on language, but also on the learning process itself.
- An enhancement of the learner's own personal experiences as important contributing elements to classroom learning.
- The linking of classroom language learning with language use outside the classroom. (p. 14)

Hence, the features afforded by SL, such as immersion, simulation, and telepresence, can facilitate operationalizing task-based design in a 3D MUVE, (González-Lloret, 2015). Implementation of a task-based syllabus that consistently documents lesson planning and how students' language practices play out in each virtual session can inform research in the fields of MUVEs and SLA as well as highlight the pedagogical implications of teaching in 3D MUVEs.

In this virtual course, each SL session was conducted following the principles of TBLT, such as authentic tasks, learning by doing, collaboration, and personalized learning (Doughty & Long, 2003; Ortega & González-Lloret, 2015). A full version of the task-based syllabus can be accessed at https://goo.gl/x8XpY2.

4.3.2. Procedure. An online pre-course questionnaire was sent to all participants to collect demographic information and their expectations of learning in SL. They were also informed that the course would consist of 10 virtual sessions based on real-world tasks. All participants gathered at VIRTLANTIS and met twice a week for each 90-minute virtual session. In each session, students performed various tasks in SL that simulated real-world scenarios. For instance, they were assigned to take a fieldtrip to a museum gallery, order food in a restaurant, present a show-and-tell segment about their national costume, or act as a tour guide in SL and take the class to scenic spots in their home country (see a task example in Figure 2). Some of the tasks were assigned as homework before the SL class; for example, students needed to research how to make an authentic dish for the "food" topic that day, do an oral presentation, or express opinions in class discussions. Their oral outputs were recorded using an audio-recorded device (i.e., Audacity). Screen-capture software (i.e., Screenium) was also utilized to capture their participation in the assigned tasks.

(insert Figure 2 here)

Figure 2. Students role-playing in a 3D pizzeria rezzed by *Holodeck*

To document their virtual learning experience of each SL task-based session, students kept a learning journal on a class blog site. They also had the chance to give feedback on their peers' journals. Prompts were provided to make sure that their reflections were not off topic. Additionally, all students were interviewed about their journal entries to keep track of their reflections, probe for more information, and participate as an insider in the shared virtual community. Throughout the course, I, as a participant observer, also took field notes in each session and documented my observations along with reflections in the research journal posted on my research blog.

An online post-course questionnaire was administered to gather data on students' attitudes toward the English learning experience in SL and whether their expectations of the course had been met. A semi-structured focus group interview was conducted in the last session to further probe participants' overall perceptions of the course,

followed by a text-based interview to clarify any information that was unclear or ambiguous in the focus group interview or the journal entries.

4.4. Instruments

Participants' oral production and reflections about their learning experiences were systematically observed and documented through multiple data sources. Students used English to respond to online questionnaires and interview questions, and kept journals so as to practice English more. Each instrument is discussed in detail below:

4.4.1. Questionnaires. Two online questionnaires[1] incorporating both 5-point Likert scale closed-item and open-ended questions were administered to the participants before and after the course. Both closed and open-ended items were combined to determine the participants' demographic backgrounds, digital competency, engagement (e.g., investment of time and effort in each SL task and assignment), motivation (e.g., liking for English learning in SL), and expectations of learning English in SL before and after the course (e.g., "Learning English in SL will make me more motivated" versus "Learning English in SL made me more motivated").

To check the instrument's reliability, the two questionnaires were initially administered to a similar group of EFL learners from culturally and linguistically diverse backgrounds. Items were added, and ambiguous wording was corrected. Also, a senior colleague and an expert specializing in SLA and questionnaire design were consulted to troubleshoot weak items for content validity.

4.4.2. Learner journals. As this study intends to explore learners' beliefs and perceptions, students were encouraged to keep journal entries after each session. These provided valuable insights into the students' learning journey and served as a means for observing their progress over time (Gass & Mackey, 2007). Prompts were provided to help students reflect on the particulars of events and learning behaviors from an insider's perspective and to ensure the validity of the data (Dornyei, 2007). An online class blog site was created to document and organize journal entries.

4.4.3. Focus group interview. Since the makeup of the student population in this study was heterogeneous, it was useful to obtain rich data about their perceptions and attitudes through a *maximum variation* approach (Merriam, 2009). Additionally, some students might feel more comfortable and are likely to provide more insightful information during a conversation than in writing. The interactive nature of an interview can also elicit more specific data when students' initial responses are vague (Mackey & Gass, 2005). Two formats of semi-structured interview were employed to collect data as unobtrusively as possible. The first was a debriefing session at the end of the course to invite students to share their thoughts about their overall learning experience in SL. Five students with different levels of English proficiency, amount of time spent in SL, and experiences with a SL course were chosen for the interview. The session was conducted informally as if students were having a casual conversation with peers and the teacher. A follow-up text-based interview was conducted via private text chat to elicit and clarify information.

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[1] The pre-course questionnaire can be accessed at https://spreadsheets.google.com/viewform?formkey=dDZ4cVFQUjVYLTByT19iNk Uya0VOZ2c6MQ. The post-course questionnaire is at https://spreadsheets.google.com/viewform?formkey=dGx1THdxa2twTFE2TTJ3Snc5 MjhoWkE6MA

4.4.4. Participant observation. As the teacher, I was able to immerse myself within the culture and spent an equal amount of time with each of the students, which enabled me to establish a rapport with them. It also allowed me to observe their language practices in each session, gain access to the resources created and shared by all members, and document the learning socialization that was jointly constructed by all the members (Bogdan & Biklen, 2006). Without participating, observing, and immersing myself in the virtual community, I would not have been able to gain an insider's perspective on the dynamic and complex learning phenomena in SL. In order to consistently capture a fuller picture of *what was going on* in this virtual community, I created a research journal blog with field notes from each virtual session. Using the "researcher [a]s the instrument" in the qualitative research vein, my field notes and reflections also became an integral source of data to support other qualitative data in order to strengthen the trustworthiness of this study (Dornyei, 2007, p. 56).

4.5. Data analysis

The open-and-axial coding technique from grounded theory approach (Corbin & Strauss, 2008) was adopted to reveal the thematic patterns underlying participants' attitudes toward their overall virtual learning experience and beliefs about the task-based approach for English learning in SL. Processes of iterative and inductive analysis were taken. First, I surveyed the dataset gathered from students' journal entries, interview data, open-ended survey responses, and text chat logs. The multiple data reviewing processes were supplemented and verified by the field notes and reflections documented in the research journals. In the initial data analysis, an *open-coding* mechanism was employed (Corbin & Strauss, 2008, p. 198). By attaching a code to large blocks of text, the reduced data became more manageable while highlighting salient data segments and connecting them to higher-level concepts (Dornyei, 2007). During the iterative data reviewing process, themes were identified and thematic categories were created to categorize the coded data related to those emerging themes. After revisiting the data clustered under thematic categories multiple times, axial coding was applied to refine the themes and make connections across categories (Corbin & Strauss, 2008).

Three vital issues related to rigor in qualitative research were also addressed throughout the data analysis: *credibility*, *transferability*, and *triangulation*. The credibility was justified based on the following criteria: the entire study was carried out intensively in a full course to allow students to feel comfortable and behave naturally in each learning event and task in SL, and data was collected in multiple learning contexts through students' participation in tasks in SL. Therefore, the breadth and depth of students' learning phenomena in SL were captured as fully as possible (Mackey & Gass, 2005). Member checking was also conducted via private text chat in SL in order to share with participants some of the initial coded themes and thereby validate initial data interpretations (Merriam, 2009). The transferability was strengthened through *thick description*—describing in sufficient detail what actually occurred in each virtual session, illuminated by participants' perspectives of how they made sense of the virtual learning phenomena—to allow learners themselves to determine whether the described context could be applied to their own settings (Bogdan & Biklen, 2006, p. 36). Acknowledging that one method alone could not fully capture the dynamic and complex learning phenomena in SL, data triangulation was employed through multiple data sources and perspectives to enhance the study's *trustworthiness* (Dornyei, 2007).

5. Results and discussion

After a systematic analysis of recursive examination and comparisons of multiple qualitative data, two thematic categories emerged: factors that influence the SL learning experience, and the effects of task-based instruction on language learning in SL. Using axial coding to cross-examine each thematic category, sub-themes also emerged to reveal the underlying patterns centering on each identified theme, as presented in the following tables. Each thematic pattern is exemplified by verbatim evidence[2] drawn from multiple sources to further illustrate the patterns arising from each main theme.

The first theme is manifest in the immersive, simulated, and creative nature of SL. The features of SL also enhanced the EFL students' virtual learning experience. Table 1 summarizes all student data regarding whether a 3D virtual environment facilitated or hindered their learning experience, coupled with the sub-theme of how learners compared their English learning experience in SL and the real world:

Table 1. *Students' perceptions about their overall learning experience in SL*
<div align="center">(insert Table 1 here)</div>

5.1. Positive perceptions of overall SL learning experience

5.1.1. SL features. Reflecting on their overall learning experiences, the EFL students in this study all pointed out that the unique features afforded by SL had made their learning experience rewarding. For instance, the flexible chat modes enabled them to practice not only English speaking skills, but also provided multiple channels of communication—being able to easily switch chat modes from public talk using voice or text chat to private chat using IM. They perceived that those features made learning much easier and more time-efficient. The positive perception was also reinforced by cost saving, especially when doing multiple real-world tasks that required frequent "travels" in one course session. To illustrate, teleporting could allow students to "discover new things and new place that mean new things for [the] language" (Tamar, post-course survey). That is, when traveling to different builds instantly, they were able to talk about newly discovered places on the fly, incidentally learn new vocabulary signaled on floating tags above each 3D object, and share new knowledge among their peers. This result corroborates the positive finding in previous research that SL allows learners to communicate with peers in real-time, multimodal modes (Wigham & Chanier, 2015) as well as discover and create their own learning experiences beyond physical boundaries (Canto et al., 2014; Clark, 2009; Cooke-Plagwitz, 2009; Kluge & Riley, 2008; Lee & Gerber, 2013; Wang & Burton, 2013).

Another salient feature arising from the triangulated data is the ability to build 3D objects. From the cognitive standpoint, the process of building enabled students to experience and "see" how their ideas could take shape in 3D form (e.g., creating a poster for a presentation) (Sadler & Dooly, 2013). In general, students found their first building experience challenging but also rewarding because it was conducive to language acquisition. It also fostered a sense of achievement in creating their own objects step by step. For instance, students needed to read and follow instructions in

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[2] To respect the originality of students' comments, grammatical errors, typos and mechanical mistakes are kept unaltered, except those that hinder understanding and are therefore bracketed. Notes added by the researcher appear in parentheses to clarify information that is unclear or missing. Avatar pseudonyms are used to protect participants' identity.

order to successfully build a 3D object. Additionally, those who were competent in object building would mentor those less competent by explaining as well as demonstrating each step. The collaborative interaction offered students who were more proficient in building an opportunity to practice how to communicate meanings with their peers in English; it also allowed less-proficient students to learn from doing and following directions by asking questions in English. Hence, students developed a sense of belonging through peer support in the virtual community-building (Dede, 2012; Downey et al., 2012; Ganem-Gutierrez, 2014; Grant & Clerehan, 2011; Hew & Cheung, 2013; Norton, 2001).

The excitement of building, creating, and learning English simultaneously also optimized students' learning experiences by empowering them to discover their own learning autonomy and experience the "fun" of doing things. Maribel summed up why she thought that SL features had made her learning rewarding:

> I think all the features are very useful and save time, effort and make the learning experience funny and interesting. For example, teleporting from one place to another only takes 30 seconds. Building objects is good exercise to create the object you desire. Holodeck offer you lot of places where you can roleplay and the places are usually not crowded unlike RL [real life][3]. So you will feel relax while practising. In General I think all the features are prefect [perfect] tools for learning and teaching…if I were taught English or any other subject in this interesting way I would be better...I think SL is really amazing. (Maribel, learning journal)

5.1.2. Immersion in simulated environments. Aside from the unique features outlined above, SL also allows residents to freely visit different *builds* that simulate real-world buildings or regions. Resident avatars can easily fly or teleport to the builds of their interest as if they were physically traveling to those places in the real world. *Immersive simulations* configured in a 3D virtual environment also made learning in SL an experiential learning experience for these EFL students (Dawley & Dede, 2014). This finding also supports the positive claim made by prior research about immersive and experiential learning in SL (Coffman & Klinger, 2007; González-Lloret & Ortega, 2014; Kluge & Riley, 2008; Sadler & Dooly, 2013). Despite their inability to touch an object or travel to a place as in the real world, immersion in simulated environments allowed the students to virtually experiment with tasks that might have been otherwise risky or difficult to carry out in the real world (Clark, 2009; Cooke-Plagwitz, 2008, 2009; Jauregi & Canto, 2012; Vrellis et al., 2016; Wang & Burton, 2013) and offered them ample opportunities to simulate real-world tasks while exposing them to rich language input in real time (Chun et al., 2016; González-Lloret, 2015; Ortega & González-Lloret, 2015). Usif described how immersive simulations in SL helped him learn English better:

> Learning a language in SL is that you are able to experience what you are learning. I mean, you can learn something around, something about museums, arts, gallery and it was really possible for us to see a museum immediately. I think it's really helpful for learning languages coz you know what you are talking about, what you need to know about the place, for example, museums. I think this part of SL is that we can experience and you can feel at heart almost everything. (Usif, interview)

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[3] Students used the initials RL (real life) throughout their journal entries and interviews to refer to their experience in the real world as a contrast to SL.

Through immersion in different builds across content disciplines in real-world scenarios, learners found it more convenient to use the target language beyond the constraints of physical travel (Peterson, 2012). Additionally, they could easily map out their interlanguage input with corresponding visual objects in 3D mode, which further solidified their language acquisition (Lan, 2014; Lan et al., 2015).

5.1.3. Multicultural/multilingual and collaborative environments. Owing to its boundary-crossing nature, SL attracts residents with diverse cultural and linguistic backgrounds to the in-world[4] daily. It also transcends the physical boundaries that result from physical distance and time differences in conventionally fixed classrooms (Chun et al., 2016; González-Lloret, 2015). The advantage of the virtual course in SL was that students had the opportunity to interact and collaborate with other students across culture, nationality, gender, and language. This advantage of building intercultural communication competence for language learners in SL has also been documented in prior research (e.g., Canto et al., 2014; Ganem-Gutierrez, 2014; Grant & Clerehan, 2011; Jauregi et al., 2011; Jauregi & Canto, 2012). As Barrabax vividly illustrated:

> I really enjoyed this class for several reasons. I have known beautiful places in SL that invites to be visited later. But most importantly, I enjoyed watching the presentations of my companions. It is wonderful to hear people who live in different countries around the world and share their experiences…It is nice experience with people of different cultures. You live in America, I live in Spain, or in India. It's incredible. (Barrabax, learning journal)

The multicultural/multilingual dynamics also raised students' awareness of the rich and colorful cultural capital each student brought to the virtual class—especially when they were doing oral presentations through which they "realized how much variety there are in different cultures or countries" (Usif, learning journal).

The EFL students also established a bond by supporting, collaborating with, and learning from each other, which "is fantastic because it is not easy to have all this support in RL" (Korobase, learning journal). Students considered being part of the multicultural/multilingual cohort as unique and beneficial since each member brought his/her cultural, linguistic, and SL expertise to the virtual class. Collaboration with peers not only strengthened the bond among students in the virtual community and cultivated their cultural competence, but also enhanced their learning experience and language skills through interacting with peers in English. This result supports the view that the collaborative, supportive and immersive nature of SL can foster peer scaffolding, the mentor-novice apprenticeship, and a sense of belonging and trust in the virtual community, as evidenced in prior 3D MUVE research (Dede, 2012; Deutschmann & Panichi, 2009, 2013; Hew & Cheung, 2013; Trinder & Moffat, 2009). As Barrabax stated, "Activities with my colleagues are useful for learning English—enhance the interactivity, listen to different forms of English pronunciation, share interesting personal experiences, culture, knowledge, etc. We can do fun and diverse group activities" (Barrabax, learning journal).

5.1.4. Fun factor. Another arising pattern was the terms "fun" or "interesting" repeatedly appearing in students' reflective accounts of their virtual learning experience. One of the reasons students found learning English in SL enjoyable was due to the features of SL. These not only facilitated their virtual learning experience, which brought an element of fun, but also offered an open, immersive and creative

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[4] In-world is the term widely used in SL that refers to being connected to SL and the activities that take place there.

venue that further enhanced their learning. As Korobase put it, "I think SL is a new way which helps a lot to learn English in a funny and motivator way. Nobody had this possibility in the past and I feel very fortunate to discover this new possibility" (Korobase, post-course survey).

The immense possibilities and potential in SL also transformed learners' prior English learning experiences in a traditional classroom—they found English learning not "conventional" or "boring" anymore. They could learn and practice English as if they were using the target language in different real-world scenarios, owing to the builds or *Holodeck* features. Practicing English everywhere, any time, at their own pace, with ease and interest strengthened the perceived "fun" in learning in SL. Learning in a fun way (or in their term, like a "game") hence motivated them to use English spontaneously through interacting with peers. Because they found it so engaging, interactive, and immersive, they perceived learning in a 3D MUVE to be a more fun and more positive experience than a traditional language class (Dawley & Dede, 2014; Reinders & Wattana, 2014; Vrellis et al., 2016). As Idil reflected on the "job naming" task:

> I learn different way to explain one job because we exchange clue together in our team…The guess job game is fantastic. Competition atmosphere make me motivate and fun to learn. I know new vocabulary about job and still remember it because this experience is so attractive. I think fun make us better learning and better remember. thanks for fun class. ;-) (Idil, learning journal)

5.2. Negative perceptions of overall SL learning experience

5.2.1. Technical issues. Despite the positive factors reported above, students also perceived some issues in SL that might have hindered their virtual learning experience. The most obvious technical issue was the poor quality of some of the devices (e.g., microphones or headsets), which made communication in the voice chat difficult. The low-quality sound, exacerbated by an echoing noise, hindered the process of task completion, as students were too embarrassed to speak for fear of not being understood. As Maribel stated:

> The most well known problem here in Sl is the voice problem because some avatars have weak internet connections. It sometimes affects my English learning because I can't hear them clearly or I can not use voice with them due to this technical problem...[Although] I enjoyed the lesson today as usual, I only think the voice or sound problem, many students have bad connections, in these lessons is a negative side…but I don't know the way of solving this problem. (Maribel, learning journal)

Additionally, platform instability in SL sometimes resulted in unexpected computer crashes and difficulties logging back into the SL in-world. Bad Internet connections also caused lagging, which made the avatar difficult to move around. These technical difficulties have also been reported in previous SL research (e.g., Lan, 2014; Liou, 2012; Peterson, 2010a; Trinder & Moffat, 2009). As Idil put it, "Internet connection can be my problem sometime. I try to log in to sl a lot but it fail, So I have to absent some class. I feel so sad about it because I really would like to learn" (Idil, post-course survey).

5.2.2. Lack of paralinguistic features. Although SL affords in-world residents to virtually see each other and allows them to configure some animation scripts to initiate nonverbal cues (e.g., laughing, screaming), these paralinguistic features are not automatically displayed at the appropriate moment—users have to manually activate them (cf. Peterson, 2010a, 2010b; Wang et al., 2014). The lack of

these paralinguistic features (e.g., eye contact) can also result in the removal of nonverbal support. Generally, EFL students sense whether or not they are understood, judging by others' facial expressions or eye contact in the real world. A vivid example of the impact of the lack of nonverbal cues was evidenced in Usif's learning experience in the task of "breaking the ice". As much as the task was intended to build the virtual community through information exchange with interlocutors, Usif found that SL still lacked those paralinguistic features—even if those features had a negative connation due to stress, shyness, or a first-time encounter with a stranger in the real world:

> But I really don't know whether I can deem it's virtuality as a drawback of this exercise or not. Because, in RL, we need to become face to face looking at each other's eyes using somehow the same dialog if keen on breaking the ice [in conversation], while here in SL there is no such a dealing stress or shyness since we cannot look at each others...(Usif, learning journal)

5.3. Learning English in SL vs. the real world

5.3.1. Impact of prior real-world learning experience. Another salient pattern was students' comparisons of English learning experiences in both SL and the real world. The English classes they had taken in their home countries were mostly grammar-focused. These EFL learners had not experienced using English for meaningful communication. The "unpleasant" (passive) learning experience of a traditional English class had resulted in their demotivation to attend any real-world English class. This phenomenon has also been witnessed in EFL language teaching research (Chang, 2011, Cheng, 2000; King, 2013; Reinders & Wattana, 2014). However, in spite of their prior negative English learning experience, this EFL cohort was still motivated to improve their English communication skills. They discovered that SL opened up different avenues for English learning that could be dynamic, interactive, and immersive. Maribel compared her English learning experience back in Egypt and in SL:

> That [taking classes in RL] has a very bad impact on me...Because the boring methodology to teach students is not working for every one. I was one of students who got bored of studying. If I had been taught English language and other subjects in this interesting way [in SL], I would have been better. (Maribel, learning journal)

Indeed, students were able to speak in English with other resident avatars from all over the world, anywhere, and at any time in SL. They could immerse themselves in different builds, learn informally, and discover new knowledge at their own pace by simply sitting at home (Dede, 2012; Ganem-Gutierrez, 2014; Hew & Cheung, 2013). The experience in SL simulated a wide variety of real-world scenarios where they could use English for more goal-oriented purposes—resulting in more engaging and meaningful learning experiences than those in a traditional EFL class (Chun et al., 2016; González-Lloret, 2015; Lan, 2014).

5.3.2. SL vs. 2D environments. Another interesting pattern arising from students' interviews was their attitudes toward comparing learning in SL with other 2D environments, such as Skype and IM. Although those digital tools also enabled students to synchronously communicate with each other in text or voice chat, they found that the tools fell short of offering the more dynamic features afforded by SL that led to a positive immersive learning experience. For example, Korobase delineated the reasons why he preferred learning in SL to other digital tools:

There are several advantages against Skype, and against IM, etc. It's that you can come here [SL], you can have meetings, but you can see the avatars. Immediately in your mind, it's like you're watching one movie that you are inside of them so all the avatars and you, first of all, are people. And you are living like, a RL. Secondly, you have the possibility to make roleplays so you can see more like a real life situation. That's not possible with skype or IM or things like that. Third, we have the possibility to move to certain places. Teleporting is a fantastic tool. Four, you can create objects, which is absolutely fantastic. Why? Because you interact in real time. So you can see how the others see building things. So it's like real life, it's fantastic, or even better than RL, in that case [building]. (Korobase, interview)

In addition to teleporting and object-building—two of the most unique features in SL—3D simulations in SL had taken students' learning experiences to the level where they could virtually carry out real-world tasks. Being immersed in various interesting builds not only simulated reality, but also made them feel as if they were actually doing the tasks in the real world (Dawley & Dede, 2014; Sadler & Dooly, 2013). Therefore, the immersive, creative, and interactive nature of SL set it apart from its 2D counterparts, which in turn led to students' positive attitudes toward considering SL to be a more optimal learning environment (Downey et al., 2012; Peterson, 2016b).

5.3.3. Self-perceived learning progress. Reminiscing about their overall virtual learning experience, students in general perceived their progress positively. They expressed that they could "feel" the difference in their English proficiency throughout the virtual course—due greatly to the confidence gained from speaking English to the teacher, peers, and other SL residents, and from acquiring productive vocabulary (Lan et al., 2015). Self-perceived progress was frequently seen in students' reflective journal entries, such as "I am honestly sanguine about the remarkable progress of my English while attending in this virtual course" (Usif, learning journal) or "Really a nice experience…Very interactive and engaging…I am improving my confidence to use English in my presentations. And not only my confidence but the vocabulary too. Thanks!" (Korobase, learning journal).

Another striking case that exemplifies the effects of task-based instruction in SL on EFL students' self-perceived progress was Barrabax's learning trajectory. Originally from Granada, Spain, she was a very shy, beginning-level EFL learner as compared to her peers at the outset of the course. Even though she was initially lagging behind, she decided to stay and participate in each virtual session, as exemplified in her account of the virtual learning journey:

Comparing my first interview [pre-course task interaction] with the latter I can see that the change in me has been incredible. At first, I had no initiative and I had trouble to speaking. I thought this class was too advanced for my poor English. But now I can see that I have more security, I understand better than before (even I have some troubles because my vocabulary is still limited)…Thanks to this wonderful experience I can think it is possible…Now I understand the conversation in English, not all words, of course, but much of the conversation and it is easier for me. Even at home, I am speaking in English, looking for words and phrases in my mind. This represents a great breakthrough in a few weeks. I think to improvise English and tasks you suggested for the course have been very successful. Thanks, very much :)) (Barrabax, learning journal)

As illustrated in her entire learning process from initially struggling to eventually thriving, Barrabax demonstrated the beneficial effects for EFL learners in SL. The positive perception of "feeling" the gains in self-improvement, self-confidence, and self-esteem had carried over to her firm belief in using English for meaningful purposes in both SL and the real world. This evidence also echoes the positive effect that immersive learning in a 3D MUVE can have on empowering EFL learners, as demonstrated in SL research (e.g., Deutschmann & Panichi, 2009, 2013; Wang et al., 2014). Also worth noting is that the class lasted only for 10 sessions over 6 weeks. Such progressive improvement in speaking and language acquisition—given the time frame—was even more striking.

5.3.4. Skills and knowledge transfer to the real world. Due to the simulation nature of SL, EFL learners performed various authentic tasks that they might not have had the chance to do in their physical classes. Consequently, they held positive attitudes toward task-based practices in SL, which they perceived as transferrable to real-world situations (Canto et al., 2014; Peterson, 2012). The experience of virtually "rehearsing" or "simulating" a real-world task also made students discover real-world skills that they had not explored or not believed they had been capable of doing. By breaking down complex tasks into a step-by-step process, it made the real-world tasks seem less daunting and more tangible since students were able to "see" how to complete the task in 3D mode (Dawley & Dede, 2014; Lan, 2014; Vrellis et al., 2016; Wang & Burton, 2013). Actually doing the tasks in SL and learning from their peers also boosted students' motivation to perform the tasks in the real world (González-Lloret & Ortega, 2014).

The positive perception of simulating real-world tasks in English also bolstered learners' self-confidence. Specifically, learners' growing confidence in speaking English reinforced their belief that they could transfer their improved speaking skills to various future real-world scenarios. As Maribel stated, "Because if I practice this a lot in SL, I consider practising English in SL is a good step toward practising in RL. I feel I will gain self-confidence and be brave to use English language in RL" (Maribel, interview). Furthermore, it helped learners develop a strong sense of the self-efficacy needed to tackle real-world tasks in the future (Peterson, 2010a, 2012, 2016b).

Although students' perceptions of the transferability to the real world of the skills and knowledge gained in SL were largely positive, Usif was upfront about his doubts regarding this effect:

> I cannot consider SL as a complete absolute educational area since in addition to proper tools and facilities required for education, there are some other factors affecting education such as shyness, fear of communicating in other language etc. Nonetheless, since in SL it is impossible to be face to face with others while communicating in other language, I think SL cannot be helpful to subside the shyness and fear of facing people to talk in a second language. So it would be deemed as drawback of SL if language learners cannot apply what they've learnt in SL for RL. (Usif, post-course survey)

Interestingly, the transformation from being stressed and nervous when talking or presenting in public in the real world to being less shy and more at ease in SL had become a double-edged sword for Usif. On the one hand, he acknowledged the fact that SL had made him become more "brave" to speak English in front of the class without the nerves that usually held him back. On the other hand, he was hoping he could have felt the same "nervousness" and "stress" as he usually did in the real world so that he could also experience the same negative feelings in SL that qualified for the so-called transferability. When asked if the real -life course was mandatory with

credits, Usif came to realize that the stress in presenting in public and nervousness in talking with a professor in English were also due to the obligations imposed on him. He was also reminded that the virtual course in SL was not restricted by the same factors (e.g., the pressure of getting credits and meeting the standards of the professor) that impacted on him in a conventional course. All the members in the virtual community were equal and free from the hierarchical power structure of a conventional course. If the virtual course had had the same mandatory credits and requirements as a conventional course, and if it had been conducted in a more traditional (non-task-based) manner, would Usif have been as nervous and stressed as he previously reported? Such a question is worthy of examination.

      5.3.5. SL as a potential learning environment versus the real world. As evidenced in the triangulated qualitative data, students generally acknowledged the benefits of their overall virtual learning experiences. To illustrate, a wide variety of rich and free builds available in SL offered the potential for students to discover and learn in real time. The flexibility to teleport and explore each 3D simulated region not only provided them with easy access to various immersive builds, but also enriched their learning experience beyond their expectations since "a lot of different sim(s) mean a lot of various experience to learn (Idil, post-course survey). Hence, virtual learning was not static or linear as in a traditional class, but fluid and dynamic, as guided by their imagination, creativity, and interests. Virtual learning was supported by multimodal 3D features in SL (Cooke-Plagwitz, 2008, 2009; Wigham & Chanier, 2015), ranging from mouse-over, floating tags above each 3D object providing visual support for vocabulary, to immersive task-based simulations that deepened their linguistic knowledge and understanding of the content (Dede, 2012; Ganem-Gutierrez, 2014; Grant & Clerehan, 2011; Hew & Cheung, 2013; Lan, 2014). Being immersed and exposed to a myriad of builds across real-world content disciplines also bolstered their ability to research a topic on their own. Also, a traditional class is usually constrained—by distance, time, mandatory credits—that counteract against "freedom" and flexibility in learning (Dawley & Dede, 2014; González-Lloret & Ortega, 2014; Kluge & Riley, 2008; Sadler & Dooly, 2013). SL transcended these limitations and freed the students' minds to discover their learning interests at their own pace, which is not easily done in a conventional class setting (Chun et al., 2016; González-Lloret, 2015).

    If we delve more into why SL was beneficial for SLA, students commented that the chance to learn English was available anytime and anywhere in SL—which was unlikely to happen in their real-world classes. Being able to interact in English with both native and nonnative speakers of English around the world, as well as hear rich language input in all the builds visited, was a "pleasant surprise" to them. The ease of virtual learning at home, abundant opportunities to interact with other SL residents in English, and fun in learning and discovering new knowledge and vocabulary in different builds all led to positive English learning experiences. For example, the EFL students' language acquisition was enhanced by the rich input available in the builds they visited. Their oral proficiency was also improved by interacting with other residents in English. The ease, flexibility, real-time collaboration, and exposure to rich input that SL affords for language acquisition also supports previous SLA research in SL (Deutschmann & Panichi, 2009, 2013; Jauregi, 2016; Jauregi & Canto, 2012; Lan, 2014; Liou, 2012; Peterson, 2010a, 2012, 2016b). Usif further illustrated how SL as a virtual learning environment was conducive to his English learning experience:

> …it is really helpful to participate in a language class in where all students coming from different nationalities, cultures and dialects, something which seems unlikely to happen in RL...You can define some words, or expressions, and immediately transfer or teleport students to the place related to what the words or expressions you're defining is exactly like. In SL I can recall more words and phrases and bring nicer colour to my sentence...If doing a task regarding art or museum, as an illustration, it is possible to teleport to a gallery or museum easily and free of charge to discuss the terms related to art in a proper relevant place like a gallery not in a simple class that there is no sign of art or museum tangible there [in RL]…although it is less real in SL, but i was pretty convinced that it can be helpful practicing in SL to make progress and improvement in RL. (Usif, learning journal)

From the post-course survey results, the reasons why students were drawn to SL can be categorized into two factors: *practical* and *holistic*. The former was mostly associated with students who were either new users or came to SL only for the sake of attending the virtual class. Socializing with other resident avatars or exploring other builds for extracurricular activities was not their priority. Both Usif and Ebba expressed their reasons for entering SL as "I did not us[e] to come to SL before attending this English course. The only thing I'm doing in SL is just learning English" (Usif, post-course survey). Their practical approach might also be attributed to the fact that Usif had been to SL for only 6 weeks and had not fully explored it through networking with other avatars except for the virtual class.

Additionally, a majority of students came to SL not only for the virtual course, but also to discover more interesting builds, interact with peers and new friends, and attend various social events. For them, logging onto SL had become part of their daily routine. They were willing to spend time exploring SL, talking to friends in English, and having fun by playing SL games. Surprisingly, the line between SL and the real world had become blurred for these students—they devoted more time to SL than to their real-world routines. Nikhil also voiced the reasons that drew him to SL:

> I come to SL to attend English course but it is not only reason to log on to SL as I have joined SL before more than 7 months. I log on to SL whenever I get chance from RL. And I like to spend time in SL. I enjoy chatting with SL friends and like to meet new people here from all over the world. I do like to participate in different SL activities like dancing, combating, playing board games with friends, splodder events [online game configured in SL], etc... (Nikhil, post-course survey)

As noted previously, the fun factor of SL had transcended the virtual/real-world boundaries by attracting students more to SL. Also, seeing the value that SL offered, they were willing to frequent the virtually open space where they could freely discover new builds, learn new knowledge, make friends, and practice English with people around the world. This evidence also epitomizes the fact that our students would invest more significant time and heighted engagement in the 3D sphere for both entertainment and learning, as documented in the MUVE literature (Peterson, 2016a; Sadler, 2012).

This virtual course provided EFL students with ample opportunities to practice English while participating in real-world tasks. The second theme captures students' beliefs about the effects of task-based instruction on their learning outcomes as presented below:

Table 2. *Students' beliefs* about *task-based instruction in SL on their learning outcomes*

(insert Table 2 here)

5.4. Communication tasks retain learner engagement, motivation and promote spontaneous output via interaction

EFL students were generally positive about the task-based instruction in the virtual course. They found that tasks conducted in SL were not static, but realistic, interesting, and communicative—different from their experiences in a traditional English class. Since each virtual session varied with topics related to their own lives and all the tasks involved interaction via voice chat, students became more committed to participating. Their engagement and motivation—due to the perceived value in the various communication tasks—were thus enhanced. Having the opportunity to interact with their peers using voice chat during all the tasks further strengthened their attitudes toward task-based interaction in SL. Practicing speaking in motivating tasks related to their real lives was the component missing in their prior or current real-world English classes (Chang, 2011; Cheng, 2000). For example, students commented that they found the tasks carried out in pair and group work were beneficial and promoted more interaction: "every task was involving pair/group work that makes task more interactive, more interesting & thus more helpful" (Nikhil, learning journal).

Their beliefs about the effects of task-based instruction in SL on their learning achievement also led to improvement in their English proficiency. The communication tasks were challenging in that they "pushed" students to speak and process the target language without translating from their first language to the second language; this was both cognitively and linguistically demanding. Maribel vividly explained why she found those communicative tasks motivating albeit challenging:

> I find the tasks were very useful for my English learning, if I practice these tasks regularly, I will definitely be better. All the task are real life situations you must be alert, you must think in English not in your native language in order to be fast and that for sure the best way to learn how to communicate in English. All the task are challenging and interesting. (Maribel, learning journal)

The communication tasks—especially convergent, goal-oriented tasks—required learners' full attention to get their meaning across and to interact with their interlocutors spontaneously. This type of language practice was beyond their comfort zone, a new arena to which their prior English learning experiences had not led them. Despite the perceived task difficulty, students were motivated and stimulated to undertake those challenges because they believed in the benefits that the tasks could bring to their learning. Worth noting is that a beginning-level student, Nikhil, recounted why he found those tasks demanding and how he perceived the value of completing the assigned tasks:

> All the tasks we did I think are very helpful for learning English…we had to explain to somebody what you want to say. That way, it was a bit challenging because if I am talking about myself, I am a new beginner of learning English, then I don't know enough knowledge of English. So if I had something in my mind, I could not express in the words. To make somebody understand what I mean is part of making sentences. (Nikhil, interview)

Another vivid example of how the communication tasks benefited EFL students' interlanguage processing was their use of language strategies to deal with the cognitive and linguistic demands of task-based interactions. For instance, Korobase outlined how he used different communication strategies (e.g., circumlocution by

replacing unknown words with known expressions) to deal with the linguistic challenges:

> Regarding the task in which we were asked to give instruction to our classmate to create an object…As you can imagine it is not easy to understand perfectly to all due [to] different accents and my limited vocabulary, so I use the technique to use long sen[te]nces to substitute the unknown word. I try to explain the meaning with other words. But the key point is to lose the shame. When I don't understand what the other person say I use two ways. One is to ask for and the second one is to explain what I understood in order to be sure what I understood is correct or not. (Korobase, learning journal)

The opportunity to speak "freely" and think "in English" as much as those communication tasks enabled them to, was unfortunately lacking in a traditional English class (King, 2013; Reinders & Wattana, 2014). Throughout the task-based language practice in SL, students also witnessed a change in their levels of self-confidence as well as their progress in English. The impact of task-based instruction on their learning achievement can be seen in Idil's vivid account of her virtual learning journey in SL:

> I think all task help a lot for improve my English learning. I learn to ask to make it clear when I didn't understand and learn to use English in role play situation. there are a lot different between first time and this time. First, I feel more confident, more comfortable and I can speak continuous don't take time to pause for thinking like in first time. I[n] the first time I feel very excited and feel IT' s a bit hard to find word in my brain to speak, but After I finish the wonderful course everything go on good way. THANK YOU SO MUCH!!!! (Idil, learning journal)

Taken together, the communication tasks used in this virtual course not only fostered the EFL students' language acquisition (Doughty & Long, 2003; Ortega & González-Lloret, 2015), but also enabled them to use English as spontaneously in SL as they did in the real world (Ellis, 2000; Jauregi & Canto, 2012; Jauregi et al., 2011; Lan et al., 2015). Although the communicative tasks were cognitively and linguistically challenging, the benefits they offered kept students motivated and engaged (Deutschmann & Panichi, 2013; Peterson, 2010a, 2012, 2016b; Skehan, 2003; Willis, 1996).

5.5. Culture-driven tasks foster learner autonomy and investment in language practices

Tasks carried out in this study were not only interactive, but also related to students' real-world interests that were meaningful to them. Those real-world tasks also exploited each learner's cultural repertoire—ranging from introducing their national costume or cuisine to guiding the class to tourist attractions in their home countries simulated in SL. Given the multicultural/multilingual virtual class, it made sense to include a cultural element in the task design, where students could showcase their cultural heritage to their classmates. What emerges from students' reflective accounts of their experiences with completing the culturally-related tasks is that they were willing to "invest" time and effort in preparing oral presentations to promote their home cultures. They felt as if they were "ambassadors" in promoting their home cultures with which their classmates were unfamiliar. Consequently, they were motivated to spend time online doing research on history and tradition—making sure that the quality and content of their oral presentations professionally and accurately

represented their home cultures. Maribel related how she benefited from completing this task:

> I was happy to talk about my country [Egypt] and felt that it is real life situation, and that I must talk in confidence. Also, I must be sure of what I am saying in order not to give false or misleading information. Besides, I must choose the most important information in order to keep the people who are listening to me following what I am saying and not to feel bored. As usual I liked this task I think it is good practice for learning English. I enjoyed this course very much:)) (Maribel, learning journal)

Students' investment of time and effort in task projects related to their home cultures—from the standpoint of SLA—resulted in a rich exposure to a wide range of authentic, online materials in the target language. Seeing the effort their peers put into their presentations motivated them to invest more time and effort in their own presentations in order to reach the high standard set by their peers. To illustrate, Idil vividly described how she acquired new vocabulary both from putting effort into preparing for her task on national costumes and interacting with the class when asked to explain some culturally laden terms in her home culture:

> …a bit more difficult to find how to explain them in English because I know not much vocabulary about them. I learn a lot way to talk about them after I done assignment and listen presentation. There are amazing experience to learn in sl again because we learn it fr[o]m people who realy know well about detail of their outfit and try their best to explain it. After class, I know more english about [each culture] So, I think if I have to use it in rl, it will be easier…I use google and look a lot website and see different way that they explain same cloth. After that I try to make my word to explain about it. So, everything go easier. It mean look at friend presentation and trying to explain my clothes make me learn new vocabulary and new sentences (Idil, learning journal)

Worth noting is that taking the initiative to do research for each task project was unexpected—given the fact that this virtual course was not mandatory and did not bear any credits. As the representative who took full responsibility for delivering accurate information about their home culture, participants were willing and motivated to invest time and effort into each task, aside from their real-world commitments, gradually developing and reinforcing their learning autonomy. Seeing the effort and passion that their peers put into making their own oral presentation professional further validated the fact that every member in this multicultural/multilingual class was devoted to promoting their home culture. Also, being able to promote their home culture to other members was an experience that they would not have had in a conventional class. The tasks also led to growth in students' sense of achievement and self-confidence. As Ulysses stated:

> The idea on talking about "Le Moulin Rouge" came suddenly in my mind because it's a famous place and not everyone know much about it. I wanted to show its story as being the patrimony of the french culture. I am not fluent in english but I'm proud that I can talk about important thing. Firstly, it was very exciting to go to The Moulin rouge in SL and take the photo and then presenting it to the class. I felt as if I was telling a travel. It was a good moment that I won't forget. This tasks helps not only to become self-confident but gives a huge motivation to learn english. (Ulysses, learning journal)

The findings in this study corroborate previous task-based research findings in SL: tasks that are meaningful and real-world driven with a focus on learners' cultural,

linguistic and world knowledge (Duff, 1986; Ganem-Gutierrez, 2014) result in the learners' prolonged motivation and engagement (Deutschmann & Panichi, 2013; Deutschmann et al., 2009; Peterson, 2010a, 2012, 2016b). They also promote learner autonomy, as evidenced in the investment of time and effort (Canto et al., 2014; Cantoet al., 2011; Jauregi, 2016; Jauregi & Canto, 2012).

5.6. Simulated tasks deepen real-world task learning experiences that reinforce knowledge and language acquisition

A conspicuous feature of SL is that 3D MUVEs make simulated representations of real-world scenes feasible. Through 3D configurations of a myriad of real-world scenes and objects, "reality" comes into play in SL (Sadler & Dooly, 2013); tasks in this study capitalized on this. For instance, students simulated a "dine-out" scenario in a pizzeria animated by *Holodeck*, where they played the roles of servers or diners as if they were in a real pizzeria. Maribel related why she found role-playing in a pizzeria rezzed by the *Holodeck* as interesting and real as in real life:

> I enjoyed the role-play and I hope we will do it again. I think it is similar to Rl class, the decoration of the pizzeria was so real but I think we save more time in sl as we went to pizzeria in seconds…About my feeling during acting the server it was challenging I actually got a paper and pen to write down the orders and to make sure not to forget any dish or drink (so exactly like Rl but the difference was nobody was watching me). For sure practicing any real life situation in English will improve my English speaking and reinforce my self confidence when I meet the same situation in real life. (Maribel, learning journal)

Interestingly, Maribel described her experience of literally taking a pen to jot down the orders from her classmate customers—a vivid example that students' real-world task learning experience could also carry over when they were doing a simulated task in SL (Dawley & Dede, 2014; Ganem-Gutierrez, 2014; González-Lloret & Ortega, 2014). Since simulated tasks targeting real-world scenarios were seldom incorporated in their traditional English classes (King, 2013; Reinders & Wattana, 2014), students talked about the benefits of role-playing real-world scenarios in SL, such as "It's different from a RL class because I felt more relaxed, I felt less being in a class. the feeling of being in a class disappeared, it was like a drama stage" (Ulysses, learning journal).

Indeed, the feeling of "being in a class" was alleviated through simulating a real-world scenario in SL. Because they were simulating a real-world situation without rehearsing it or learning English in isolation (out of context), students were able to use English for real communication (i.e., taking orders or ordering food from a menu). As such, they functioned in English spontaneously and enjoyably without realizing that they were practicing and learning English at the same time. The task-based instruction in SL thus heightened their engagement and enhanced their learning autonomy and language acquisition (Deutschmann & Panichi, 2013; Liou, 2012; Peterson, 2010a, 2012). As Idil stated, "Role play make us learn English [in an] informal way. we didn't feel we learn English while we roleplay but we learn from it a lot. it's fun" (Idil, post-course survey). Echoing Idil's opinion, both Ulysses and Usif also further outlined why they found that role-playing in the *Holodeck* pizzeria not only improved their English fluency, but also enabled them to formulate expressions appropriate to the pizzeria discourse, such as "That helps because it's not artificial but natural conversation. I think that natural conversation increases much english fluency" (Ulysses, learning journal), or "some special expression we can use while we are

ordering food, such as: I will have ..., or I'd like .... . This task helped me to use them as I am using in RL...really similar SL and RL" (Usif, learning journal).

What sets learning in SL apart from the real world is the ample opportunity provided to virtually simulate real-world tasks in 3D builds any time, simply with a mouse click (Cooke-Plagwitz, 2008, 2009). Students had the opportunity to do fieldtrips by teleporting to SL regions that simulated various real-world scenes, such as figure skating in a 3D ice skating arena. Being able to freely visit as many builds in SL as they desired was a unique learning experience. They could explore and immerse themselves in numerous 3D builds at their own pace. Therefore, SL transcends physical boundaries (Chun et al., 2016; González-Lloret, 2015). Usif recounted his first learning experience of visiting a museum gallery in the task of being a curator:

> You may not believe this, but it was the first time I visited a museum in my life. It was an astonishing experience. Lots of sculptures for which there are numerous information and a big history behind. So once more, thanks to SL I could enjoy a new experience…[T]alking as curator, was a unique experience, something I guess won't repeat in my life. It would be another awesome aspects of SL make almost everything plausible. (Usif, learning journal)

Students also compared their simulated task learning experience with their prior real-world English learning experience. They reflected on why it was difficult to carry out those simulated tasks in a traditional class, as reported in prior 3D MUVE research (Vrellis et al., 2016; Wang & Burton, 2013). For example, Usif stressed why it was less convenient to experience simulated tasks (e.g., ice skating) in the real world because "In RL class, rarely skating are used to stimulate conversation because of problem of organisation, or fear the a student being injured.... In sl, it's easier to organise that and we can benefit from it" (Usif, learning journal). Usif's reflection was also echoed by Idil's comment on the ease of doing real-world tasks in SL as opposed to in RL:

> My favourite task is learning music in Magnatune [SIM]…After class I went to it again to review what I learn. I can (play) many different music instrument in sl but rl can not. that make it 's more fun in sl…I found some music instrument that I never know before and I can listen its sound and play in in sl. that's good point of sl that rl is difficult to do. (Idil, learning journal)

Indeed, being able to simulate real-world tasks in SL not only nurtured their content-specific knowledge, but also took their experiential learning experience to the next level—discovering and acquiring new knowledge concretely represented in 3D visual modes (builds) and retaining motivation and engagement. This finding is also evidenced in prior SL research (Canto et al., 2014; Dede, 2012; Kluge & Riley, 2008; Peterson, 2012; Sadler & Dooly, 2013). For example, playing the role of a tour guide or museum curator motivated students to enrich their knowledge bank by taking extra time outside their SL class and real-world obligations to research their assigned task by using multiple online sources (e.g., Google search, Wikipedia). As such, they had a rich exposure to authentic materials in both native and target languages, which led to the acquisition of content-specific or culture-related vocabulary and expressions within a short period of time (Jauregi & Canto, 2012; Lan, 2014; Lan et al., 2015). In order to make their guided tour professional, as would a responsible guide, students met with peers in SL to further discuss their presentation and even interviewed the owner of a specific SL venue (e.g., museum gallery) in order to gather more information about their assigned topic. Consequently, they also practiced their English listening and speaking while being tasked. For example, Korobase gave a

detailed account of how doing simulated tasks benefited his SLA while introducing his partner's favorite musical instrument:

> …after the class I was very motivated to return to the same place in SL to play all instruments we saw there and I could see the name in English. After that and I went to Wikipedia to know instruments' names in Spanish too, So I can speak about all those instruments in Spanish and in English too. I went to Google and looked for every instrument. I found there when one specific instrument was created or more used…I wanted to say that I never investigated [any]thing about instruments in RL because I never played any instrumente, but now after do it in SL I was motivated to look for information about them. Perhaps I can start learning to play guitar or...maracas...:-) If I will start to learn, it will be due to Second Life..:-) (Korobase, learning journal)

As evidenced above, the opportunity to simulate various real-world scenarios also deepened students' real-world task learning experiences, which they might or might not have experienced in real-world contexts due to concerns about injury (e.g., ice skating) or cost (e.g., dining at different restaurants) (Liou, 2012; Ortega & González-Lloret, 2015; Wang & Burton, 2013). Being able to learn, explore, and have fun outside the classroom walls as well as immerse themselves in the builds and use English for real-world communication had made learning more meaningful and motivating—a learning experience that they had not had in a conventional English class. Nikhil commented on his final simulated task as a tour guide:

> It was another great day for me to be in SL and to have my wonderful classmates as tour guide…Then [Usif] took us to tour of historical place 'Mont Saint-Michel' of France…During walking down on street of shops It gave real like experience because of design of that place...Then comes our (me and Idil) turn to lead everyone to The Grand Canyon. I was feeling more confident and the least nervous compared to early classes because I had to introduce activity which can be done at Grand Canyon which are very entertaining and we can explain such thing easily…I could not notice when time passed. Then I had to go to bed to see another beautiful day in RL. :-) (Nikhil, learning journal)

6. Implications and future directions

This study demonstrates that task-based instruction can extend beyond traditional classroom-based settings and capitalize on the unique features of SL to enhance real-world teaching and learning in a 3D MUVE. From the triangulated qualitative results, key findings will be highlighted below, as will the implications for conducting task-based research and language teaching/learning in SL.

6.1. Use of real-world and culture-related tasks

As evidenced in this study, culture-specific tasks that build on students' funds of knowledge prompt more language output and boost motivation and engagement by validating students' existing knowledge about their culture and the world (Canto et al., 2014; Ganem-Gutierrez, 2014; Jauregi & Canto, 2012; Jauregi et al., 2011). Moreover, as the task topics are familiar and meaningful, students' learning autonomy is fostered, such that they take responsibility for delivering accurate information about their home cultures. The investment of time and effort in their assigned tasks is also exemplified in their searching for a large number of online resources, exposing them to more authentic language input while acquiring new knowledge (Peterson, 2016b; Wigham & Chanier, 2015). This finding also echoes Duff (1986) that language

learners should be given more opportunity to not only process more linguistic and cognitive capacities during task-based interaction, but also draw upon their world knowledge, prior experience, and nonlinguistic and linguistic skills.

6.2. Use of simulated tasks

The simulated, immersive, creative, and collaborative nature of SL has attracted thousands of digital natives (Prensky, 2005a, 2005b). However, SL is not just a massively multiplayer online role-playing game that is confined by a scripted storyline (Hew & Cheung, 2013); instead, it is a MUVE that mirrors the real world (Dawley & Dede, 2014; Kluge & Riley, 2008) and allows residents to create and manipulate their imagined virtual environments (Lan, 2014). As illustrated by this study, the features in SL, such as builds and *Holodecks*, provides flexibility for students to simulate real-world tasks that are either impossible or too burdensome to conduct in a traditional class (González-Lloret, 2015; Vrellis et al., 2016; Wang & Burton, 2013). Immersion in different real-world tasks in 3D form also deepens students' learning experiences (Dawley & Dede, 2014; Dede, 2005, 2012); furthermore, the skills they acquire and practice in SL can be transferred to the real world (Canto et al., 2014; Coffman & Klinger, 2007; Hew & Cheung, 2013; Peterson, 2012). From the pedagogical perspective, simulated tasks in SL make learning more meaningful, real, and fun than in other two-dimensional Web 1.0 or 2.0 tools (Downey et al., 2012; Peterson, 2016b; Trinder & Moffat, 2009). Hence, SL as a 3D virtual environment that maximizes real-world task experiences has the potential to empower EFL learning and teaching because it multiplies learning possibilities outside the physical classroom.

6.3. SL as an optimal environment for language instruction

Although different from traditional asynchronous or synchronous environments without seeing the interlocutors face to face, "tele/copresense" (Schroeder, 2002), rendered by avatars, enhances the learning experience and fosters a sense of community and belonging (Deutschmann & Panichi, 2013; Peterson, 2010a, 2012). Tele/copresence makes in-world interaction more real and immersive to language learners. The tele/copresence of avatars, their capability to communicate with multiple interlocutors simultaneously, and the possibility of sharing the same virtual space also make SL a more immersive educational tool than other asynchronous or synchronous digital tools (Holmberg & Huvila, 2008; Peterson, 2016b; Wang et al., 2014; Wigham & Chanier, 2015). The features of SL make participation in SL more engaging and life-like and open up a new language teaching/learning arena. Being able to simulate real-world scenarios to practice the target language with avatar residents worldwide without the cost of traveling also makes SL an ideal educational tool for language learning (Canto et al., 2014; Clark, 2009; Cooke-Plagwitz, 2009; Lee & Gerber, 2013). The collaborative nature of SL, strengthened by the multimodal communication channels, also stimulates task-based negotiation between avatars and promotes written and oral language proficiency (Chun et al., 2016; Cooke-Plagwitz, 2008; González-Lloret, 2015; Ortega & González-Lloret, 2015).

6.4. Optimal language class size

Research has suggested that small class sizes are ideal for language class management (Kitade, 2000) and student interaction (Kötter, 2003) especially in an immersive learning environment. This principle is also exemplified in the current research study conducted in SL. As previously addressed, there were more than 15 students at the

outset of the virtual course. A larger group was considered so that more data could be collected and analyzed. However, some students withdrew due to their real-world commitments, and some commented that the virtual class was too big for each student to practice speaking English. A class of 10 or fewer is ideal for a virtual course in SL since a small class size can give each student more opportunity to practice English. This size also provides the baseline for adequate task interaction, particularly if students are absent due to their real-world schedules.

6.5. Technical factors

An inhibitory factor that complicates conducting research in SL is dealing with unstable technical difficulties, such as unexpected computer freezes or connection interruptions. Prior MUVE research has also reported this inevitably common issue (Dawley & Dede, 2014; Hew & Cheung, 2013; Liou, 2012; Trinder & Moffat, 2009). As documented in this study, the quality of the headsets or built-in microphones that students used varied, which not only complicated teaching a virtual course in SL (e.g., all students could be heard except one particular student with poor sound quality), but also jeopardized the data collection while recording the students' oral productions (e.g., a student's voice might break up in the middle of a task-based interaction). These technical glitches may also speak to the fact that conducting research in SL is not an easy task, not to mention that recording voice-based output remotely is even more cumbersome. Despite these concerns, SLA research in SL is still a promising research venue that deserves further investigation in order to contribute to the body of knowledge in the fields of SLA and 3D MUVEs (Cooke-Plagwitz, 2009; Peterson, 2010a, 2016b).

7. Conclusion

As documented in this study, the synergy of a 3D MUVE and culturally responsive, authentic tasks can take EFL learning beyond the classroom walls and connect EFL learners to the real world. EFL learners gain experiential learning experience by doing real-world tasks in the target language, enhanced by the unique features in SL, thereby fostering learner engagement and motivation, optimizing active learning and creativity, encouraging risk taking, and enabling immersive collaboration. This task-based virtual learning experience is significantly different from simply reading or unrealistically practicing tasks in a traditional classroom (González-Lloret, 2015; González-Lloret & Ortega, 2014). Nevertheless, caution should be exercised to avoid using technology for its own sake without being guided by a sound TBLT curriculum design (Chun et al., 2016; Liou, 2012; Skehan, 2003). Technology-mediated TBLT needs to be well grounded and implemented in order to maximize the pedagogical benefits (Ortega & González-Lloret, 2015).

When an assigned task is carried out in a subject domain that is meaning-focused, real-world like, and culture-driven, it will promote learner investment in learning (Canto et al., 2014; Duff, 1986; Ganem-Gutierrez, 2014). Immersive simulations in SL make task completion more realistic, leading to heightened engagement and positive learning outcomes (Deutschmann & Panichi, 2013; Lan, 2014; Liou, 2012; Sadler & Dooly, 2013). If teachers can virtually lead students to the Grand Canyon for camping and skydiving, or to the Nile River in Egypt to be ferried across a river by an ancient Egyptian, or to anywhere by teleporting without the cost of traveling, 3D MUVEs may provide an alternative to conventional language instruction. The affordances of SL can therefore empower language educators and students to teach and learn outside the box. The testimonial of one student in his journal entry vividly

sums up how SL could make a difference in EFL students' virtual language learning experiences:

> I could see how Second Life can help us simulating RL situations. I could speak with people all around the world, I could learn about music instruments more than never. Imagine I built a piano which can sound different music!!!!. Imagine I found some needs to make presentations in SL and I was motivated to build a portable videoprojector. Imagine…I made it after my visit to the sculpture museum. Imagine I studied Plato when I never liked Philosophy. Imagine I visited castles in order to know the English name of different part of castles.... And imagine I cooked for first time of my life a PAELLA in RL because I needed to study how to do it to explain it in SL. The PAELLA in RL was really fantastic because nobody of my family believed it!!! The most important, from my point of view, was to see the possibility to teach and interact in SL like we were in RL. It was a demonstration how valuable are virtual worlds to teach in 3D and interact like we were in the same place...After several time visiting SL and with the number of Universities and teachers teaching different languages here, I am sure Virtual Worlds will be in the next future one of the most successful tool to learn another language. Many teachers don't know that and we have the responsibility to make of possible research to demonstrate in which we believe. (Korobase, learning journal)

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Table 1. *Students' perceptions of their overall learning experience in SL*

Positive perceptions	Negative perceptions	Learning English in SL vs. the real world
SL features that maximize overall learning experience	Technical issues	Impact of prior real-world learning experience
Immersion in simulated environments	Lack of paralinguistic features	SL vs. 2D environments
Multicultural/multilingual and collaborative environments		Self-perceived learning progress in SL
Fun factor		Skills and knowledge transfer to the real world
		SL as a potential learning environment vs. the real world

Table 2. *Students' beliefs about task-based instruction in SL on their learning outcomes*

Task-based instruction in SL
Communication tasks retain learner engagement and motivation and promote spontaneous output via interaction
Culture-driven tasks foster learner autonomy and investment in language practices
Simulated tasks deepen real-world task learning experiences that reinforce knowledge and language acquisition

Figure 1. A class held in Rose Garden on the VIRTLANTIS island

Figure 2. Students were role playing in a 3D pizzeria rezzed by Holodeck

Highlights:

- SL serves as an optimal 3D MUVE for language teaching and learning
- Unique features in SL augment instruction and make learning fun and engaging
- The immersive and creative nature of SL sets it apart from other Web 2.0 tools
- Culture-driven and communicative tasks foster virtual learning experience
- Simulating real-world tasks deepen knowledge processing and language acquisition