Case Study Examining Foreign Language Teachers’ Technological Pedagogical Content Knowledge (tpack) in Teaching Listening and Speaking Skills in Virtual Worlds

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ABSTRACT

CASE STUDY EXAMINING FOREIGN LANGUAGE TEACHERS’ TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE (TPACK) IN TEACHING LISTENING AND SPEAKING SKILLS IN VIRTUAL WORLDS

Rahmi H. Aoyama, Ph.D.
Department of Educational Technology, Research and Assessment
Northern Illinois University, 2020
Pi Sui Hsu, Director

This qualitative study utilizes the lens of the Technological Pedagogical Content Knowledge (TPACK) framework to provide a holistic view of how language teachers demonstrate their TPACK in teaching listening and speaking in virtual worlds. Seven language teachers who taught in informal virtual language class settings participated in this study. The teachers’ TPACK skills were examined through archived online chat transcripts for each observed class, one-on-one interviews with each language instructor, TPACK and demographic surveys, observation notes, and class documents from the instructors. The researcher took several steps to code the TPACK survey data to identify patterns by comparing the mean scores from each participant and then comparing across all participants. For other data, the researcher used in vivo coding to highlight specific words or phrases from the participants. The teachers demonstrated their Content Knowledge (CK) by spending time selecting articles or podcasts, their Technological Content Knowledge (TCK) by using a variety of teaching tools such as notecards and microphone, their Pedagogical Knowledge (PK) by using a wide range of teaching activities during the class to meet different learning styles, their Pedagogical Content Knowledge (PCK) by using learning materials based on their teaching experiences, their Technological Pedagogical Knowledge (TPK) by using authentic listening audio (podcasts) taken from the
internet and supplementing it with subtitles, and their Technological Pedagogical Content Knowledge (TPACK) by combining technology and teaching approaches to teach the target language.
CASE STUDY EXAMINING FOREIGN LANGUAGE TEACHERS’ TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE (TPACK) IN TEACHING LISTENING AND SPEAKING SKILLS IN VIRTUAL WORLDS

BY

RAHMI H. AOYAMA
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A DISSERTATION SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULLFILLMENT OF THE REQUIREMENTS FOR THE DEGREE DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL TECHNOLOGY, RESEARCH AND ASSESSMENT

Doctoral Director:
Pi-Sui Hsu
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CHAPTER 1
INTRODUCTION

This research study was based on my personal experience as an English teacher in a remote area in Indonesia, where I found it challenging to provide authentic materials to my students. First, most teachers only had a few English textbooks, and they typically were outdated, difficult to find or expensive to acquire. Second, there were no media for students to practice and improve their language skills other than in the classroom. Those two factors led me to seek alternatives in presenting authentic materials other than English textbooks to my students. One way to create and present authentic learning materials in the classroom was using technology. Technology has brought changes to the language teaching process in Indonesia. Some language teachers used media such as the internet to incorporate learning materials into their courses. Others used synchronous media such as Skype to conduct a class. Teachers saw those technologies as answers to address the challenges in teaching English, especially teaching English as a Foreign Language (EFL).

Gebhard (2006) contends that students who learn English in an EFL setting have few opportunities to use English outside the classroom. Additionally, they have limitations such as the amount of time to learn the language as well as teachers’ proficiency in the targeted language. For example, they could only hear how their teachers pronounce the words during an hour-long lesson. If the teachers pronounced words wrong, students would pronounce the words incorrectly as well.
In a speaking and listening class, it was important for students to practice their skills in pronunciation. One way to pronounce the words correctly was by repeating what the native speakers said. Wang, Clandra, Hibbard, and Lefaiver (2011) found that “many EFL students lack access to native speakers for authentic communication” (p. 29). Some universities were able to invite a native speaker to teach a class; however, for universities that could not afford to invite native speakers, they used authentic materials such as audio recordings or videos as their teaching materials.

Recently, another option is to access authentic materials by using 3D virtual worlds. A 3D virtual world is “a networked desktop virtual reality in which users move and interact in simulated 3D spaces” (Dickey, 2005, p. 439); 3D virtual worlds such as Second Life, which was known as Lindenworld in 2001, allow teacher/instructor to invite native speakers into the virtual learning community through chat rooms and to teleport to other locations. Nieman (2006) claimed that one of the best ways to learn a foreign language is to be exposed in a real-world environment; therefore, 3D virtual worlds as replications of the real world are able to create simulated learning environments for language learners. A 3D virtual world’s ability to replicate the real-world environment has drawn teachers’ attention to use it in their classrooms.

Teachers and practitioners have seen Second Life as a platform for teaching language. Users utilize communication such as audio chat and text chat as forms of communication in real time. These affordances create an authentic learning environment to facilitate the learning process, especially in a language learning setting.

Bartle (2004) defines virtual worlds as “places where the imaginary meets the real” (p.1). In other words, the users in virtual worlds are active in real time and all the time. Schroeder (2008) defined virtual worlds as “persistent virtual environments in which people experience
others as being there with them and where they interact with them” (p. 2). In virtual worlds, users represent themselves with an avatar as the representation of their characters. For example, they could choose their outfit based on their color or style preferences. Avatars move in a 3D world and interact with other avatars using voice and text chats.

Purpose of the Study

The purpose of this study was to explore what Technological Pedagogical Content Knowledge (TPACK) key competencies teachers need to teach listening and speaking English courses in Second Life regions such as in Virtlantis and Cypris, which are free language learning environments in the virtual world of Second Life. They provide spaces for informal language learning such as English, Japanese, Spanish and many other languages. Virtlantis and Cypris were chosen for this research because they are easy to access and the teachers who were on that site were willing to participate in this study.

Research Questions

This study was guided by the following questions:

1. How do teachers demonstrate their technological pedagogical content knowledge (TPACK) in the context of teaching speaking in Second Life?
2. How do teachers demonstrate their technological pedagogical content knowledge (TPACK) in the context of teaching listening in Second Life?
Theoretical Framework – TPACK

This study used a Technological Pedagogical Content Knowledge (TPACK) framework to explore connections among technologies, curriculum content and specific pedagogical approaches (Harris, Mishra, & Koelher, 2009). TPACK describes the relationship between teachers’ knowledge of how to use different types of technology and their understanding of how technology can be used to aid the teaching and learning process of language acquisition (van Olphen, 2008a). Technological Pedagogical Content Knowledge (TPACK) is discussed more in Chapter 2.

Significance of the Study

The result of this study will help language teachers to identify the key competencies and technological resources that are important in teaching listening and speaking courses in virtual worlds. Teachers could refer to the key competencies identified in this study to improve their teaching styles in the virtual-world environment. Many studies have focused on the use of virtual worlds such as Second Life in the areas of sciences and languages (Aydin, 2013; Campbell & Cameron, 2016; Deutschmann & Molka-Danielsen, 2009; Qiu, Zhong, Zhang, Qiao, Xiao, Kim & Wang, 2017; Wagner & Ip, 2019). Based on the researchers’ findings, most of the virtual worlds’ benefits were to improve students’ reading and writing skills (Balcikanli, 2012; Kim & Blankenship, 2013; Wang & Shao, 2012).

Petrakou (2010) studied how a virtual world was used as a learning environment in an online course. In his study, he found that virtual worlds provide enhanced interactivity because
they allow for synchronous communication. He claimed that when students become used to interacting through avatars, virtual worlds become a potential interactive environment.

Similarly, Balcikanli (2012) studied American and Turkish students’ experiences in using Second Life. In that study, there were two groups of American and Turkish students who spent 30 minutes studying Turkish and then practicing English for the next 30 minutes in Second Life (SL). He gave a set of questions to both groups regarding their experiences using Second Life. The results show that Second Life eliminates the interaction barriers to using a foreign language. In face-to-face learning environments, teachers and students only interacted during the class hour. However, Second Life allowed teachers and students to spend more time to learn the language, giving the learners self-confidence in the mastery of the language because they communicated with native speakers.

Petrakou (2010) and Balcikanli (2012) saw Second Life in the language learning setting as having the potential to provide students with interaction in the language learning setting. However, they did not describe the aspects of speaking and listening for language learning courses. This study’s goal was to provide information about how to improve teaching listening and speaking in the virtual worlds.

Overview of Study

Chapter 1 presents the background of the research as well as the research questions and theoretical framework. Chapter 2 presents the literature review related to teaching listening and speaking in informal language classes in Second Life. Chapter 3 details the methodology for conducting this study. Chapter 4 presents the results, and Chapter 5 provides a discussion and recommendation for practice and for future research.
CHAPTER 2
LITERATURE REVIEW

This research focused on seven language teachers who taught listening and speaking classes in English, Spanish, German, or Japanese in Second Life. Therefore, this chapter discusses the use of virtual worlds in the field of language teaching. Since there are limited studies on the use of virtual worlds such as Second Life, Virtlantis, and Cypris in teaching speaking and listening, this literature review focused on the use of virtual worlds in broader areas. This chapter starts with the definition of virtual worlds and their affordances and constraints, Virtlantis and Cypris as specific islands for language learners in Second Life, and which features help or deter teaching speaking and listening courses.

Virtual Worlds – Second Life

As this research focused on the use of virtual worlds in informal language learning settings, it is important to define virtual worlds, especially Second Life. Second Life is a 3D Multi-User Virtual Environments (MUVE) created by Linden Lab in San Francisco that allows members to simultaneously interact with other members online (Second Life, 2010). Second Life is a highly immersive three-dimensional (3D) virtual world that hosted more than 30,482,842 users as of the end of 2012, with an average of 50,000 logging in daily (Second Life, 2010). Katz (2008) predicted that Second Life would be used in the future in the academic world for class
instruction, which has made Second Life one of the most popular 3D MUVEs in the educational setting (Kim, 2000). In addition, Second Life created a place for researchers to study specialized teaching and learning (Deutschmann & Molka-Danielsen, 2009).

A novel feature of Second Life is the high quality of its 3D graphical interfaces. It allows users to immerse themselves in a “rich, visually appealing simulated environment” (Peterson, 2004, p. 71). Usually users create an environment based on a theme or a specific location. The high quality of 3D graphical interfaces adds a dimension of realism based on “topography, movement and physics that provide the illusion of being there” (Warburton, 2009, p. 415).

Another important feature in Second Life is the use of avatars. Users can create and customize personal avatars that represent themselves. Kim (2000) defines avatars as online representations of users in the virtual worlds. Avatars were designed to enhance interaction in a virtual world. They “have the ability to perform various gestures and actions such as waving that facilitate communication with other avatars” (Kim, 2000, p. 23). Avatars can “move between different worlds, an activity known as teleporting” (Peterson, 2004, p. 69). Moreover, the Second Life environment replicates real life. For example, in the Second Life environment, people go to a market which is located at the same address as in real life. As communities in Second Life, Virtlantis and Cypris offer a free resource for language teachers housed within the larger Second Life virtual world. They were developed by language teachers interested in informal language learning activities. Detailed descriptions of Virtlantis and Cypris are provided later in this chapter.
Second Life Affordances and Constraints

In Second Life, users can utilize communication features such as audio chat and text chat as a form of communication in real time. These multiple communication channels allow users to select their preference in communication. For example, some users prefer to use audio chat because they cannot type quickly. By using that communication feature, users can receive instant feedback without any delay.

Communication in Second Life can be in synchronous (live voice chat and text-based chat) or asynchronous (notecard) format. In addition, users can also interact with one another with gestures such as waving, thumb up or clapping (Hismanoglu, 2012). Table 1 provides a summary of Second Life’s affordances from various authors.

Table 1
Second Life’s Affordances

<table>
<thead>
<tr>
<th>Researchers</th>
<th>Second Life Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grant &amp; Huang, 2010</td>
<td>Visual observation and interaction with objects</td>
</tr>
<tr>
<td>Cheng, Zhan, &amp; Tsai, 2010</td>
<td>Appealing and interactive language learning context</td>
</tr>
<tr>
<td>Wang et al., 2009</td>
<td>Good, attractive, and contextually appropriate platform</td>
</tr>
<tr>
<td>Carter &amp; Elseth, 2009</td>
<td>Varieties of instructional tactics</td>
</tr>
<tr>
<td>Cheng, Zhan, &amp; Tsai, 2010</td>
<td>Recording or chat log features to evaluate presented lesson.</td>
</tr>
</tbody>
</table>

The features offered in Second Life such as 3D graphical interfaces, avatars, and communication channels have led teachers to take those benefits into language teaching classrooms. Koenraad (2008) claimed that virtual environments such as Second Life offer access
to higher quality graphical user interfaces that create more realistic and immersive contexts for learning. They also offer the learners opportunities to interact with native speakers frequently, which is not available in many traditional classrooms. Moreover, the creation of avatars in virtual worlds creates engagement and motivation (Cooke-Plagwitz, 2008; Peterson, 2004) to support the development of learner autonomy (Little, Dam & Legenhausen, 2017). Based on these benefits in Second Life, the purpose of this study was to investigate the role of Second Life in informal language learning settings for improving students’ listening and speaking skills in using the target language.

In contrast, some researchers (Deutschmann & Panichi, 2009; Peterson, 2016; Warburton, 2009) have identified technical problems that constrain using Second Life. Second Life has very high system requirements. Users also need to have a very stable internet connection in order to run Second Life from their computers. Warburton (2009) also noted that users must spend a lot of time to learn how to operate Second Life. For many first-time users, it can be very overwhelming to learn to navigate their avatars using many features such as running, walking, or flying. It is especially difficult for those who never use computers or are not familiar with virtual worlds to comprehend all the instructions at once. In addition, there is no online support to ask if you have any questions (Waburton, 2009). Those constraints are a challenge for first-time Second Life users.

3D Virtual Worlds and Language Learning

Second Life allows users to create social interactions among its users and communities within the virtual space. Second Life has been praised for its effectiveness in conducting group events, role-playing scenarios, and virtually exploring new places (Jambi, et al., 2017; Lan et al.,
Moreover, Yee, Bailenson, Urbanek, Change, and Merget (2007) determined “our social interactions in online virtual environment such as Second Life are governed by the same social norms as social interactions in the physical world” (p. 119). Deutschmann and Panichi (2009) observed that Second Life can be used in language learning because Second Life allows spontaneous meeting with speakers of the target language who may geographically be very far away, [and] offers a certain degree of anonymity and privacy arguably lowering levels of anxiety and offers a 3D space which gives a sense of presence and authenticity (p. 312).

Those components can be used to create educational activities in Second Life. Kay and FitzGerald (2008) identified several educational activities such as self-paced tutorials, displays and exhibits, role plays and simulations, and creative writing that can be done in Second Life. These educational activities can create opportunities that may explore “both formal and informal learning approaches that include role-play and performativity learning; cooperative learning; and game-based learning” (Warburton, 2009, p. 421).

The above educational activities in Second Life are supported with features such as text and voice chat. These features are used frequently in language classes. With Second Life, teachers invite a native speaker into their virtual classroom (Warburton, 2009). For example, Wang et al. (2011) conducted a study on teaching English as a Foreign Language (EFL) for first-year Chinese students using Second Life. The teachers invited native speakers to teach lessons in their virtual English classes. One of the native speakers mentioned that the Chinese students improved their English significantly after they finished the program. Wang et al. hypothesized that it was because the students had to use English in order to speak with the native speakers, and the native speakers could not speak Chinese. This may be a benefit for students who cannot
interact with native speakers in a real-life setting to improve their listening and speaking skills. Thus, Second Life provides opportunities for students to practice their listening and speaking skills virtually with native speakers.

Apart from its popular tools (instant messaging and audio features), Second Life allows participants to experience social presence, or the feeling of participating as real people in a real community (Berge, 2008). Participants’ avatars are called “residents” in Second Life. In Second Life, the residents can perform the same activities as they do in the real world. For example, residents can build their own houses, travel to other islands, and interact with other residents. These authentic experiences provide opportunities for developing their vocabularies and ability to use the appropriate terminology for a specific occasion.

From the users’ perspective, Second Life gives them the freedom to create their own context for interaction (Deutschmann & Panichi, 2009). This concept supports an essential factor that has contributed to online learning: interaction (Aldosemani et al., 2016; Berger et al., 2016; Chen, 2016; Melchor-Couto, 2017; Rahim & Zulkanain, 2016). Learner interaction occurs when learners share ideas and work together to achieve specific learning goals. In addition, learners can access and practice their language skills at their own available time. For language learners, this results in the learners’ increased fluency in the target language.

From the teachers’ perspective, Second Life has the potential to provide rich learning experiences for students. Moreover, Coffman and Klinger (2007) stated, “Second Life has the potential to be useful educational tools for teaching and learning by using constructivist approach” (p. 30). They implied that Second Life provides an online immersive environment for students. Second Life allows teachers and students to collaborate on lesson objectives and topics with other students around the world (Coffman & Klinger, 2007). For example, through Second
Life students in Indonesia can collaborate and practice their speaking lessons with students who reside in the United States.

Research (Deutschmann & Panichi, 2009; Petrakou, 2010; Wang et al., 2011) has shown that learning in virtual environments, such as Second Life, supports language learning activity. Second Life promotes high-level interaction among users. Because of its potential in providing rich learning experiences, many language teachers have shown interest in using Second Life in their course materials. Wang et al. (2011) found in their research that Chinese teachers prefer to use Second Life as the learning environment over other virtual worlds because it feels like a real-life classroom and allows students to interact directly with their teachers in real time. Previous literature (Ibanez et al., 2011; Petrakou, 2010) shows a growing interest in foreign language teachers using Second Life as a tool to teach English or other second languages. As stated previously, Second Life has audio chat and instant messaging features that allow learners to communicate with other learners in a virtual world. Second Life also offers high-quality graphics along with a real-life atmosphere (Newstead, 2007). Newstead (2007) identified three ways that Second Life can be used for language learning: as a source of authentic interaction with target language speakers, a venue for language classes, and a networking opportunity for educationalists. Peterson (2010) suggested that working through avatars encourages learners to practice their foreign language skills, which results in fluency. In addition, Kuriscak and Luke (2009) argued that the use of Second Life would motivate learners to practice their language skills more often due to the direct feedback they receive. They found that in Second Life native speakers directly corrected the learners’ pronunciations.

Apart from benefits that learners could gain from Second Life, Salt, Atkins and Blackall (2008) reminded their readers that student expectations and desired learning outcomes also need
to be taken into consideration. For example, in a speaking class, students were expected to be able to go to the market and use appropriate vocabularies during the conversation. In doing so, teachers have to create a role-play situation in the market and explain the appropriate vocabulary in a shopping context. Sharpe and Oliver (2007) identified that activities should have a clear purpose that reflects the realities of the educational setting. Furthermore, they explained that students would benefit from the advantages of technology if it is delivered in the language with which they are familiar.

In conclusion, using Second Life in the language learning setting contributes to the educational technology field. For example, with the voice-over tools in Second Life, students can communicate with their teachers, other students and native speakers. Second Life presents a similar language classroom with its voice-over technology as in a face-to-face classroom environment. As one of the popular synchronous formats of online learning, Second Life in the language learning setting offers some solutions, such as its ability to reach native speakers. As previously discussed, Second Life has contributed to the language learning setting because of its ability to present an alternative learning environment.

Virtlantis

Virtlantis, an island in Second Life, is a place where people who would like to learn a new language can meet.

Virtlantis is a free language learning resource and community of practice in the virtual worlds of Second Life and Avination. We have been offering and facilitating free language learning activities since 2006. We offer free informal learning activities for a growing number of languages: English, French, German, Spanish and more! (Virtlantis, 2013).
Virtlantis offers a variety of language activities such as reading clubs, open discussions and conversational practice. Teachers who instruct in Virtlantis do so voluntarily. In return, Virtlantis offers some benefits for the online language instructors. First, the Virtlantis programmer advertises their service through Second Life and on various social networks such as Twitter and Facebook. Second, language instructors meet and share their knowledge on teaching and using tools in teaching the languages. Third, Virtlantis does not only offer a place to meet, but it also provides the instructors with free technology resources for teaching the languages. Virtlantis is also willing to create or purchase learning tools, such as text to speech tools that can be used by the entire community. Fourth, Virtlantis is a place to practice online teaching skills for language teachers. For teachers who are just learning to use online resources, Virtlantis can help them to customize their lessons and the programmers can provide online support if teachers have any questions about developing their language activities. Those benefits enrich the online language teachers in teaching the languages.

Students using Virtlantis can choose languages such as English, French, German, and Spanish. Volunteer instructors offer language activities and do not have to be a professional instructor to offer a class. There are Activity Organizers (AOs) who organize language activities in Virtlantis. Students can review the language schedule from a Google-based calendar that is displayed regularly on the home page. Students monitor their language schedule from the Google calendar, which can be synced to the students’ own Google calendars. Students also know if the instructor is on a break when they use the Google-based calendar.

Virtlantis offers a friendly and informal environment for students to learn languages (see Figure 1). Students can learn the languages on a beach, in a cottage, park, or even in a library. Students choose what outfit to wear in the class.
Cypris

Cypris is another language learning island in Second Life. In Cypris, people can come and learn languages such as English or Japanese. Classes in this region require students to activate their microphone in order to participate. Wenger et al. (2009) described Cypris as “experience of place enabled by technology” (p.38). Students can experience learning languages from natives in real time in the replicated world. There are some designated locations in Cypris that are used as class locations such as a Cypris village (Mallo), Cypris chat ring, a picnic table, reading circle and Cypris Japan. However, sometimes students and teachers also meet at a park within the Cypris region (see Figure 2).
All teachers in Cypris teach for free. They dedicate their time to post the class announcement/reminder through the Facebook page, prepare notecards, and conduct the lessons. However, there is one Cypris administrator who assists with the organization of the class. She will usually come and sit in the class in order to help students or teachers during class time. At the end of the class, she encourages students to donate their Linden dollars to help sustain Cypris (Figure 3). The donation box is located in each class location.

To join the class in Cypris, the avatar should be at least two weeks old. If an avatar is already two weeks old, he/she can come right away to the island and explore the class schedule from the class locations. The class schedule along with the rules for attending the class are posted on the main entrance at Cypris.
Authentic Learning Environment

Beetham and Sharpe (2007) emphasized the importance of understanding students and their needs. However, these two researchers suggested that teachers, as learning designers, need to identify principles that best suit the learners and also know how to apply these principles in specific online environments such as Second Life. Jonassen (1991) defined authentic activities as tasks that have real-world relevance and utility, that integrate across the curriculum, that provide appropriate levels of complexity, and that allow students to select the level of difficulty or involvement. For example, in a foreign language speaking class, a teacher picks a topic for daily activities such as a telephone conversation. For this activity, teachers create a dialogue from a real telephone conversation and practice it in a classroom. Similarly, Bransford, Vye, Kinzer and Risko (1990) define the criteria for authentic activities, such as having the students investigate a single complex problem, identifying and answering their own questions, and participating in activities that are logically related to the problem. In foreign language classes, teachers can provide authentic material such as a grocery flyer that can be used as a source of shopping dialogue. Students can create their own dialogue, ask a question, and combine the shopping dialogue in their daily activity conversation.
Barab, Squire and Dueber (2000) argued that authenticity occurs “not in the learner, the task, or the environment, but in the dynamic interactions among these various components … authenticity is manifest in the flow itself, and is not an objective feature of any one component in isolation” (p.38). In addition, Petraglia (1998) argued that learners need to be encouraged when they are participating in an authentic learning environment. Reeves, Herrington and Oliver (2002) identified 10 characteristics of authentic activities that can provide a useful checklist:

1. Authentic activities have real-world relevance.
2. Authentic activities are ill-defined, requiring students to define the tasks and subtasks needed to complete the activity.
3. Authentic activities comprise complex tasks to be investigated by students over a sustained period of time.
4. Authentic activities provide the opportunity for students to examine the task from different perspectives, using a variety of resources.
5. Authentic activities provide the opportunity to collaborate.
6. Authentic activities provide the opportunity to reflect.
7. Authentic activities can be integrated and applied across different subject areas and lead beyond domain-specific outcomes.
8. Authentic activities are seamlessly integrated with assessment.
9. Authentic activities create polished products valuable in their own right rather than as preparation for something else.
10. Authentic activities allow competing solutions and diversity of outcome (pp. 563-564).
Teachers can refer to Reeves et al.’s checklist when they want to identify whether their teaching environments are authentic. According to this checklist, Second Life qualifies as an authentic learning environment and provides opportunities for users to collaborate during the learning process.

Second Life as a Platform for Teaching

Virtual worlds have emerged to answer several problems such as in the face-to-face learning environment. This section provides an overview of the importance of virtual worlds, such as Virtlantis and Cypris, in the language classroom as compared to the traditional classroom. Researchers have compared the traditional real-life language classroom to Second Life in order to determine the benefits of Second Life. According to Milton et al. (2012), teachers always face a significant challenge to create opportunities for language use in the classroom, especially with a large number of students. The following discussion presents problems faced by teachers in a traditional classroom and how the virtual world acts as an alternative in resolving these problems.

First, in face-to-face class settings, students are limited to only their teachers if they want to ask questions. Bronack et al. (2008) argue that in the traditional classroom, questions are reserved until after the lecture. Because there is no time left after the class ends, teachers can answer only a few questions. The 3D immersive virtual learning environment offers some answers to that limitation. Bronack et al. (2008) studied a 3D immersive virtual world, which is called AET Zone. They noted that students were not limited to asking questions only of their teachers. They described how students taking a computer course in a virtual educational setting had some questions that could only answered by an instructor. However, their instructor was not
online during the virtual class session in the AET Zone. Fortunately, an instructor who taught the same course appeared online, so students asked that instructor questions and were able to do their work because they got their answers immediately. In virtual learning environments, students are not limited to asking questions only of their instructors. They are free to interact and learn from other instructors (Bronack et al., 2008). One essential factor that contributes to online learning is interaction (Aydin, 2013; Campbell & Cameron, 2016; Deutschmann & Molka-Danielsen, 2009; Qiu, Zhong, Zhang, Qiao, Xiao, Kim & Wang, 2017; Wagner & Ip, 2019;). Learner interaction occurs when they share ideas and work together with other learners to achieve specific learning goals. In addition, learners can access and practice their language at their own available time. This will result in learners’ fluency in the target language.

Second, foreign language students lack access to native speakers for authentic communication. As soon as the learning process in the traditional classroom is over, students return to their first language environment, which leaves them little opportunity to use what they have learned in the classroom (Wang et al., 2011). Students are not able to practice the language that they have learned in class. Milton (2006) claimed that virtual 3D environments such as Second Life offer the opportunity for real-time oral interaction in a variety of relatively realistic settings with native speakers. Second Life offers features such as virtual classrooms that allow learners to interact verbally at any time. For example, by using Second Life, an instructor who teaches foreign language can invite a guest speaker from the target language country to come to his or her virtual environment. Foreign language learners benefit from this feature because it allows them to interact directly with native speakers. Learners hear the correct pronunciation from native speakers through the Second Life environment. In addition, learners can always practice the language at their convenience.
Apart from the capacity to present authentic learning materials and flexibility of time, there are other benefits that virtual worlds offer, especially in the language learning setting. Virtual worlds allow teachers to find ways to present a target language to their students. MacWhinney and Bates (1989) explain that virtual environments are thought to offer the opportunity for much more exposure to foreign languages. Learners virtually gain comprehensive interaction with the other learners, native speakers and their instructors. Virtlandis and Cypris in Second Life present authentic alternatives for foreign language learners to practice their listening and speaking skills. Blasing (2010) states that Second Life creates opportunities that the traditional classroom setting does not have. For example, in the traditional classroom, teachers can create a dialogue on the “let’s go shopping” topic. Teachers can ask their students to practice their speaking skills through the dialogues. Students have to imagine the market because teachers cannot bring the market into the classroom. However, in a Second Life setting, students can go to the virtual market without having to imagine it. As mentioned earlier, avatars are the users’ representations and can interact with other avatars in this virtual market. Thus, Second Life offers broad access to native-speaking communities for students and teachers in that users can collaborate in more authentic learning processes.

MacWhinney and Bates (1989) explain that virtual environments are thought to offer the opportunity for large amounts of exposure to foreign languages. Learners will gain comprehensive interaction among the other learners, native speakers, and their instructors virtually. Second Life also becomes an authentic alternative for foreign language learners to practice their listening and speaking skills. Balcikanli (2012) stated, “Second Life was an ideal place for students to take risks to communicate with target language speakers” (p. 141). In addition, he found that Second Life eliminates the barriers such as adjusting for grammatical
errors when speaking a foreign language. He identified that students were more stressful about their grammar mistakes when they met native speakers in person. However, students in the Second Life environment felt more relaxed when they were talking to the native speakers. Since students presented their identity as avatars, they felt that it was not them who made grammatical mistakes; it was their avatar.

Third, teachers have a difficult time managing their time in classrooms with a large number of students. According to Milton, Jonsen, Hirst and Lindenburn (2012), teachers are often challenged as they create language use opportunities in the classroom, especially when working with a large number of students. These teachers felt that they did not have sufficient time to practice the language with their students. Milton (2006) and David (2008) found that only a few vocabulary items are learned on average in a typical language classroom. For example, teachers could go through only 12 out of 25 new words in a “let’s go shopping” topic due to time limitations. Garcia-Carbonell, Rising, Montero, and Watts (2001) also stated that teachers have a time limitation to promote a communicative competency in a traditional language classroom. Tschichold argued that teachers do not have enough time to practice the language with their students because the instructor only focuses on vocabularies in the textbook used in the classroom (as cited in Milton et al., 2012). Milton (2006) and David (2008) noted that only few new vocabulary terms are learned on average.

Virtual worlds are not effective if such instruction is not followed with relevant teaching materials in the real world. Wang et al. (2011) viewed virtual environments as playing important roles in the learning environment if utilized appropriately along with contingency planning. This means that teachers should plan and select appropriate teaching materials and tools that can be used in a virtual classroom as well as in the real-world classroom. Baker et al. (2009)
additionally suggested that teachers have to become familiar with technology. Moreover, teachers have to define their objectives in the use of technology in the virtual classroom. Teachers need to explain specific technological features that will be used in the classroom to facilitate their students’ understanding that technology will help them to learn better. For example, teachers must explain that the use of voice chat in the virtual classroom will allow students to practice their speaking skills orally with the native speakers.

In summary, virtual worlds such as Virtlantis and Cypris offer some solutions to the problems of traditional classroom settings such as flexibility in terms of time, coverage and the ability to present native speakers in an authentic learning environment. However, those features may not be effective if teachers do not use appropriate tools, teaching materials, and planning. In addition, teachers also have to be familiar with technology that will be used in the classroom.

Language Teacher Knowledge Base

It is important to understand a teacher’s decision to use different methodologies, activities, or materials in the classroom. Kennedy (1991) argues that “teachers, like other learners, interpret new content through their existing understandings and modify and reinterpret new ideas on the basis of what they already know and believe” (p. 2). Teachers’ instruction methods stem from their memories of how they learned the language, how their teachers taught them and their memories as a student. Carter and Elseth (2009) point out that because instructors shape their teaching approaches based on their own experiences of what has and has not worked in the past, they remain apprehensive when they are bombarded with new tools and methods for teaching their courses that conflict (or do not necessarily coincide) with that to which they are accustomed. (p. 445)
Based on this idea, it is important for teachers to be comfortable with the use of technology and see what benefits they gain from it before helping them to think about how to use technology in their classrooms (Hong, 2010). According to Hong, many teachers are reluctant to use technology in their classrooms because they are not familiar with technology. Moreover, they need to expand their views on pedagogy for the new environment (Compton, 2009; Hampel & Stickler, 2005; Youngs, 2007) as well as solve problems that may not appear in a face-to-face environment (Levy, Wang, & Chen, 2009). In addition, succeeding in a face-to-face classroom does not mean a teacher will also succeed in an online environment (Compton, 2009). This indicates the importance of affordances technology can offer as a part of the Second Language teacher’s knowledge base (Chapelle & Hegelheimer, 2004).

Language teachers need to have a specific knowledge base that can guide them in preparing the lesson, such as the content (what language teachers know), pedagogy (how they should teach), and how they learn how to teach (Johnson, 2009). Moreover, the main aspect of knowledge base should focus on the activity of teaching, which includes the teacher who does it, the context in which it is done and the pedagogy by which it is done (Freeman & Johnson, 1998). Therefore, the teachers’ knowledge of and about the target language along with ways to teach the language should be a part of the language teacher knowledge base.

Additionally, researchers have identified what Second Language teachers need to know in order to teach online, including in virtual worlds. Chapelle and Hegelheimer (2004) argued that teachers need to be equipped with technological skills to teach using different technologies. In addition, Hubbard and Levy (2006) suggest to integrate different technologies into the classroom. For example, English as a Second Language students will have a better understanding about U.S. culture after they watch videos from YouTube about types of foods that people eat.
during breakfast (Bao, 2006). In addition, Compton (2009) believes that while teachers need to be more than able to integrate technology in the classroom, they also need to have technical skills to use different technologies other than showing videos (Reinders, 2009). He also found that teachers need to be able to help their students if they have technical difficulties in using technology, a common challenge in informal Second Life language classes, as noted by Berge (2008).

TPACK Framework

To facilitate experiences that advance student learning (ISTE, 2011), teachers need to provide clear instructions for their students and always use technology that is not out of context from the lesson. Teachers must be knowledgeable of the lesson content and teaching pedagogy regarding technology integration (Schmidt, Baran, Thompson, Mishra, Koehler, & Shin, 2009). The Technological Pedagogical Content Knowledge (TPACK) model intertwines technology, pedagogy, and content so that technology integration is not an isolated part of a teacher’s instruction (Schmidt et al., 2009). Harris, Mishra and Koehler (2009) provide this definition:

TPACK emphasizes the connections among technologies, curriculum content, and specific pedagogical approaches, demonstrating how teachers’ understanding of technology, pedagogy, and content can interact with one another to produce effective discipline-based teaching with educational technology. (pp. 396-397)

In this framework (Figure 4), there are three interdependent components of teachers’ knowledge – content knowledge (CK), pedagogical knowledge (PK), and technological knowledge (TK) – all framed within contextual knowledge.
Figure 4: TPACK framework and knowledge components. (adapted from Koehler & Mishra, 2009).

Koehler and Mishra (2009) conceptualized TPACK as a seven-construct framework as shown in Figure 4. Technological knowledge (TK) refers to knowledge of technology tools; pedagogical knowledge (PK) refers to knowledge of teaching methods; content knowledge (CK) refers to knowledge of subject-matter; technological content knowledge (TCK) refers to knowledge of subject matter representation with technology; technological pedagogical knowledge (TPK) refers to knowledge of using technology to implement different teaching methods; pedagogical content knowledge (PCK) refers to knowledge of teaching methods with respect to subject-matter content; and technological pedagogical content knowledge (TPACK) refers to knowledge of using technology to implement teaching methods for different types of subject-matter content.

van Olphen (2008b) described the TPACK domains in relation to language teachers’ knowledge. According to van Olphen, the content knowledge (CK) refers to target language (TL) proficiency; the pedagogical knowledge (PK) refers to the knowledge of processes of teaching
and learning; the technological knowledge (TK) refers to the knowledge of using different
technologies; the pedagogical content knowledge (PCK) refers to the knowledge of second
language theories and teaching skills; the technological content (TCK) refers to an understanding
of how knowledge of content and technology interact; and the technological pedagogical
knowledge (TPK) refers to an understanding of how technology can be used to aid the teaching
and learning process.

In planning for instruction, teachers often see technology and content as two different
things. It is assumed that teachers are experts at developing the content. For example, biologists
develop biology content, whereas technologists develop technology such as internet hyperlinks
(Harris, Mishra & Koehler, 2009). In fact, content and knowledge relate to each other. For
example, the invention of virtual worlds has changed the nature of learning. Students can change
their identities in virtual worlds, and there are many tools such as chat rooms that students can
use to improve their language skills. Teachers must understand which technologies are best
suited for their students and how the content shapes each specific educational technological use.

An important aspect of Technological Pedagogical Knowledge is the creative flexibility
with available tools and their use for specific pedagogical purposes (Harris, Mishra & Koehler,
2009). A video player is an example of one such educational tool. Another example is a Smart
Board; it is assumed that teachers control use of the board. It would be incorrect to say that a
Smart Board can only be used by the teachers. Students can use a Smart Board as a technological
resource to collaborate with each other. “The flexible use of tools becomes important because
most popular software programs are not designed for educational purposes” (Harris, Mishra &
Koehler, 2009, p. 399). For example, the majority of virtual worlds are designed for gaming.
Therefore, teachers must have the knowledge and skills to see how technological resources in the virtual worlds can be used for language teaching purposes.

Teachers have to understand that teaching technology skills is different than learning what to do with technology. Teaching technology skills such as using virtual worlds in the language classroom (the T in the TPACK model) helps teachers develop knowledge about how to use virtual worlds to teach language more effectively (TPK), its relationship to disciplinary content (TCK), and how to help students meet particular curriculum content standards while using technologies such as virtual worlds appropriately (TPACK) in their learning.

Application to Study

Previously discussed research shows the importance of integrating the use of technology to provide authentic opportunities for students to learn and use the language being taught in virtual/online language classes. This study focuses on how effectively seven language teachers were able to integrate their TPACK skills into the language classes they taught in Second Life.
CHAPTER 3

METHODOLOGY

This chapter describes the methodology of the qualitative case study used in this dissertation. First, it defines case study design and provides the rationale for its use. Next, there is a detailed description of the setting, participants, and languages taught by the foreign language teachers within the settings of Cypris and Virtlantis islands in Second Life (SL). The next section specifies course materials. Lastly, there is a detailed account of the procedures for data collection and analysis.

Research Methodology

This study used a case study methodology. Qualitative case studies are approaches to research that facilitate the exploration of a phenomenon within its context using a variety of data sources. Creswell (2009) defines case studies as a “strategy of inquiry in which a researcher explores in depth a program, event, activity, process, or one or more individuals” (p. 13). Case studies are a qualitative research method (Yin, 2003) because the research is ethnographic, participant observation, and “in the field” (Yin, 2003) and the research is characterized by process tracing (George & Bennett, 2004). According to Yin (2003), a case study design should be considered when (a) the focus of the study is to answer “how” and “why” questions, (b) you cannot manipulate the behavior of those involved in the study, (c) you want to cover contextual
conditions because you believe they are relevant to the phenomenon being studied, or (d) the boundaries are not clear between the phenomenon and the context.
Case study approaches have been used to examine the research and align the use of virtual worlds in the language learning classroom (Ibanez et al., 2011; Wang et al., 2011). Wang et al. and Ibanez et al. claimed that a case study approach provides an in-depth exploration of language learning phenomena in the classroom. These explorations can be obtained from archived online chat transcripts, one-on-one interviews, surveys, and online observation notes and artifacts from instructors.

Wang et al. (2011) examined student teachers’ perceptions of Second Life as a learning platform in a Second Life in English as a Foreign Language (SL EFL) program. The participants were from a public university in the United States and from a Chinese provincial university. Second Life was used as the learning environment in which research was conducted for the presentation. In addition, instructional topics and procedures were created in the SL EFL program to guide the study’s participating students in the learning process. The SL EFL program provided the U.S. student teachers opportunities to interact with the Chinese EFL students.

Data from one-on-one and focus group interviews were recorded, transcribed, and later analyzed. Case study methodology was used in Wang et al.’s (2011) research to bring out details from participants’ viewpoints. The interviews were recorded and then transcribed for analysis. In the focus groups, the participants were interviewed in a group setting using a semi-structured format with prepared questions as well as follow-up questions that resulted from group interviews.

Ibanez et al. (2011) also used the case study methodology in their research in Second Life. They replicated a cultural site in Madrid where the scenery was filled with information about the life and work of a Spanish painter, Diego Velázques. Each student chose customized avatars and had access to the Prado Museum, one of Spain’s leading national art museums. The
scenery was created to stimulate the learners’ imaginations as well as to motivate acquisition of knowledge by showing them the scenery rather than requiring that they imagine it. As referenced by Ibanez et al. (2011), this study used the open-question interview evaluation technique to identify strengths and weaknesses of the learning environment. These interviews were conducted to elicit learners’ perspectives on the learning environment.

Setting

The data collection and the course instruction for the current study took place online in Second Life. The original study intended to only use Virtlantis as a setting. However, because of limited interest among participants, Cypris and any other regions in Second Life were visited through snowball participant recruitment. All of these sites are free language learning resources and communities in the virtual world of Second Life. Seven different language teachers participated in this research. All of them were interviewed via Second Life voice chat. Since it is an informal learning classroom, teachers were able to invite their students to any virtual setting, such as the beach, a party, or a park. Figure 5 shows a party in a Chinese classroom.

Figure 5: Virtlantis Chinese language classroom.
Informal Virtual Language Class Settings

This study was conducted in Second Life in informal virtual language class settings. The classes in this study were not affiliated with any academically accredited institution. Instead, the participants in this study had decided to independently offer the language classes for free to anyone who chose to attend. The classes were intended to improve the students’ listening and speaking skills.

Due to the informal nature of these classes, students were not required to register or consistently attend. They were free to come and go as they chose, which was also true for the teachers. In addition, the teachers were not required to take attendance, create formal lesson plans, or assess the students’ progress. However, because of the lack of formal administrative support, the teachers held multiple roles as manager, troubleshooter, and teacher at the same time.

In this study, ES rented an island for her class activities; EE owned an island; ME, YJ and DE were using Cypris Island to host their classes; and EG and PE used Virtlantis as their virtual site. Although the grid was always accessible for students, the teachers were only available during their class time, generally one to two hours per week.

Researcher’s Role

I observed the learning process in Second Life based on the teacher participants’ class schedules. I also collected various artifacts, chat logs, voice logs, and related teaching materials, such as syllabi and lesson plans from instructors. The data were collected online using a personal computer.
Each language class was observed seven times, with the first interview conducted before the first class observation and the second interview conducted after the fifth class observation (see Appendix A). The second interview was conducted after I transcribed and read the first interview. The final two class observations were conducted after the second interview. The purpose of the second interview was to find if there were any answers from the first interview that needed more clarification or explanation and/or if there were questions raised from the class observations.

In both interviews, I asked follow-up questions based on the participants’ responses. The questions (e.g., what skills do language teachers need to know to teach speaking and listening and what are the advantages and disadvantages to teaching speaking and listening) were asked to find the participants’ teaching and technological perspectives in Second Life.

Participants

This study used a qualitative sampling known as purposeful sampling. Creswell (2009) claimed that in purposeful sampling, the “researcher intentionally selects individuals and sites to learn or understand the central phenomenon” (p. 206). Seven foreign language teachers participated in this study. They are Spanish, English, Japanese and German language instructors. All of them are native speakers or nearly native speakers of the language they teach. Including seven foreign language teachers in this study allowed for the incorporation of multiple perspectives on the experience of teaching a language in virtual worlds. Most of the instructors have backgrounds as face-to-face language teachers and are familiar with virtual worlds. All of the instructors have computers at home with stable internet connections.
Demographic Backgrounds

There were seven participants in this study. Appendix B shows the demographic questions that were asked. I used initials to protect their identity. The first initial was taken from the participants’ first name and the second initial represents the language they teach. Table 2 shows the participants’ demographic backgrounds.

Table 2
Participants’ Demographic Backgrounds

<table>
<thead>
<tr>
<th>Gender</th>
<th>EE</th>
<th>ES</th>
<th>EG</th>
<th>YJ</th>
<th>PE</th>
<th>ME</th>
<th>DE</th>
</tr>
</thead>
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<td>F</td>
<td>M</td>
<td>F</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>50-60</td>
<td>50-60</td>
<td>50-60</td>
<td>50-60</td>
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<td>50-60</td>
<td>40-50</td>
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<td>Teacher</td>
<td>Researcher</td>
<td>Researcher</td>
<td>Teacher</td>
<td>Researcher</td>
<td>Teacher</td>
</tr>
<tr>
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<td>1</td>
<td>5</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
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<td>Spanish</td>
<td>German</td>
<td>Japanese</td>
<td>English</td>
<td>English</td>
<td>English</td>
</tr>
</tbody>
</table>

EE is a male English teacher between 50-60 years old. He had been teaching English in Second Life for nine years. In real life, he was an English teacher. EE taught the beginner, intermediate and advanced levels for teenagers and adults. EE’s responsibilities were to plan classes, select textbooks and design materials. In addition, EE also used YouTube as a learning source in the class. EE said he always used technology in his English classes and did some activities, e.g., internet search and online games, during the lessons. EE always used virtual worlds to teach the lesson but not for other purposes such as gaming. EE never played online games.
ES is a female Spanish teacher in Second Life between 50-60 years old. She has had 15 years of experience in Second Life. In real life, she was a Spanish teacher. ES taught Spanish for beginner, intermediate and advanced levels for adults only. ES was responsible for planning classes, designing materials and tests, and selecting textbooks for the class. She had also written her own textbook. During the lesson, ES used her textbook, YouTube and other materials such as a whiteboard. ES often used technology such as internet searches, online exercises, blogs and wikis during the lessons. ES always used virtual worlds to meet new people, just for fun and to teach. However, ES did not use virtual worlds for online gaming.

EG is a Polish female between 50-60 years old who has had 10 years of experience as a researcher and has been teaching German, French, Latin and Polish as a foreign language. In Second Life, EG taught German. EG taught beginner, intermediate and advanced levels for adults only. EG was responsible for planning classes and designing materials and tests in her German class. EG used online media such as YouTube and others (transcriptions, exercises, grammar manuals). EG always used technology during the lessons for activities such as internet searches, online exercises, blogs, wikis and online games. EG often used virtual worlds to meet new people, just for fun, to teach and to learn languages. EG did not play online games.

YJ is a male Japanese teacher between 50-60 years old. YJ’s current job was as a researcher. YJ had one year of experience in teaching Japanese in Second Life. YJ taught Japanese only for adults at the beginner level. YJ was responsible for planning classes, designing materials and tests, and selecting textbooks. YJ used the online form of Genki textbooks as learning materials. YJ sometimes used technology such as online exercises, online games and online whiteboards during the lessons. YJ used virtual worlds just for fun and for teaching purposes. YJ frequently played online games.
PE is a female teacher with five years of teaching experience. She was between 40-50 years old. She taught English at the intermediate and advanced levels for teenagers and adults in Second Life. In real life, PE was a teacher. PE planned and designed class materials. In addition, PE designed tests if they were necessary for assessing learning. She provided and designed pleasant environments to encourage participant enjoyment. PE used online media such as YouTube, news articles, quizzes and role play in Second Life. PE always used technology such as internet searches, online exercises, vocabulary and grammar games designed for ESL students and inworld tools that are scripted. PE used Second Life initially to teach as well as to learn about other cultures and as motivation for learning languages. PE did not play online games.

ME is a female between 50-60 years old. She has been teaching English in Second Life for more than 10 years. ME was a researcher in her real life. ME taught students who were adults in the beginning and intermediate levels. ME’s role in this class was to plan and to design class materials. ME used YouTube in her classroom. ME always used technology in her classes such as internet searches and online games for ESL students. ME used Second Life for teaching purposes only and indicated that she never plays online games in Second Life.

DE is a male between 40-50 years old who taught English in Second Life and his real life. He had over five years of experience teaching English. DE taught English for the beginner, intermediate and advanced levels who are adults. He was responsible for planning and designing the classes. DE obtained his teaching materials from YouTube. He always used technology such as internet searches, podcasts, online exercises, and blogs in his classes. He used Second Life for teaching purposes only. DE never played online games in Second Life.
Data Collection

Prior to data collection, participants were contacted via Second Life chat and asked to sign a consent letter that was emailed to the personal email they provided. The letter explained to the participants the purpose of this study and how it would be conducted. After the consent forms were read and signed by the participants, we scheduled a time to be interviewed and to have their virtual classrooms observed.

This case study used six data collection methods: archived online chat transcripts for each observed class, one-on-one interviews with each language instructor, TPACK and demographic surveys, observation notes, and class documents from the instructors (see Table 3). Bogdan and Biklen (2003) stated that using multiple data sources in qualitative research “lead[s] to a fuller understanding of the phenomena you [are] studying” (p. 107). At the same time, using multiple data sources supports the credibility of the study (Lichtman, 2006). The use of multiple data sources in this study helped provide a deeper understanding of how virtual worlds, specifically in Second Life, can help students improve their speaking and listening skills.

Table 3

<table>
<thead>
<tr>
<th>Time</th>
<th>Research Procedures</th>
<th>Format</th>
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<tr>
<td>Week 1-2</td>
<td>Recruited participants</td>
<td>Virtual</td>
</tr>
<tr>
<td></td>
<td>• Conducted first interview</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Observed the participants’ classroom</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Collected online chat transcripts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Conducted second interview after five class observations</td>
<td>Online – Second Life</td>
</tr>
<tr>
<td></td>
<td>• Collected artifacts</td>
<td></td>
</tr>
<tr>
<td>Weeks 3-12</td>
<td>Gave survey</td>
<td>By email</td>
</tr>
<tr>
<td>Week 13</td>
<td>Final observation</td>
<td>Online – Second Life</td>
</tr>
<tr>
<td>Week 14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Recruitment of Participants

I contacted the Virtlantis administrators and asked them to announce this study. The Virtlantis team did so, stating that there was a researcher studying how languages are taught in Virtlantis. The announcement encouraged users to contact the researcher if they were interested in participating in the study. At the same time, an announcement about the research was made on the Second Life and Virtlantis Facebook pages. Each interested participant was contacted via e-mail and asked to fill out a consent form. They were required to sign the consent form before the research could be conducted.

I observed the Second Life and Virtlantis language teachers’ activity calendars, identified the language classes, joined them, and then approached the participants after the class finished. Via email, I contacted language instructors who had shown interest in joining the research project, giving them details and explanations about the project. All language instructors signed a consent letter after agreeing to participate in the research. However, because of limited interest among participants, Cypris and any other regions in Second Life were visited through snowball participant recruitment. In this recruitment process, the interested participants provided a reference to other instructors in other Second Life regions. I followed the same process in each of these regions.

During the recruitment week, each participant was contacted through email or through a meeting within Second Life. The participants were assured that their identity and comments would remain confidential.
Class Observations

Creswell (2009) defines observation in qualitative research as gathering information from the participants and observing the research site. In this study, class observation protocols focused on (a) Content Knowledge (CK), such as teachers’ strategies for developing the lesson; (b) Pedagogical Knowledge (PK), such as teachers’ understanding of how to organize and maintain classroom management; (c) Technological Content Knowledge (TCK), such as teachers’ understanding of the technology used for teaching the target language; and (d) Technological Pedagogical Knowledge (TPK), such as teachers successfully choosing technologies that enhance the teaching approach.

I sat in each participant’s virtual language classroom and collected online chat transcripts and class documents the instructors distributed during class. Observation data included my notes and some video of class interactions, although I ran into technical problems in videotaping the virtual class due to distractions in the environment. Online video recordings of the classes were obtained by using a video recorder facing my laptop. These observation data were useful for reference and reflection and were used as data to analyze which aspects of Technological Pedagogical Content Knowledge (TPACK) were used by the prospective participants in the lessons. I observed the classes for up to one hour, depending on the length of the lesson. Some lessons were 30 minutes and some were 60 minutes in duration.

In every observation session, I took extensive notes. They included observations of activities done in class, how teachers interacted with students, teachers’ gestures, teachers’ feedback, and other important verbal and nonverbal elements of the virtual classroom proceedings.
Activities included role play, field trip, in-class assignments, word drills and reading out loud. In role-play activity, the teachers usually gave a dialogue to the students. Students then took turns practicing the dialogue. Figure 6 shows a sample of the dialogue for role play.

Figure 6: Sample of dialogue for role-play activity.

Field trip was an activity where the teachers took the students to somewhere other than the place they used to meet. Figure 7 shows a field trip to the gas station.

Figure 7: Field trip to gas station.
Word drills was an activity in which the teachers said the words to the students and the students repeated the words multiple times until they said the words correctly. Reading out loud took place when the teachers asked the students to read an article or paragraph using their microphone so everyone in the class could hear what they said.

Online chat transcripts were one of the important data sources in this study. An online chat transcript for each class session was collected from the nearby chat and personal chat the students and teacher used to communicate during the class. Nearby chat is a compilation of text messages from avatars in the nearby location. Any avatar could see and send text messages in the nearby chat. Personal chat is a text message that an avatar can send to a particular avatar. Personal chat can only be seen by the sender and receivers of the messages. Figures 8 and 9 are samples of online chat transcripts.

Figure 8: Nearby chat screen shot.
These online chat transcripts were important for providing context for the teaching, speaking, and listening activities that occurred in Second Life. In addition, these documents were useful in analyzing the content knowledge, pedagogical knowledge, technological content knowledge and technological pedagogical knowledge aspects of the study. Online chat transcripts were monitored during class observations. The transcripts were also used to provide evidence of teachers’ engagement with the students throughout the lessons.

Class Documents

For each class, the teachers were asked to share their supporting documents, such as assignments, homework and worksheets (see Appendix E). Before or during the classroom observations, teachers shared their worksheets and homework with me through a notecard. I then saved those documents into a folder on my personal computer. Reviewing these documents helped me study how teachers improve content knowledge, pedagogical knowledge, technological content knowledge, and technological pedagogical knowledge in Second Life.
Each language instructor was asked to fill out the TPACK survey (Appendix C) that was adapted from Schmidt et al. (2009). Proof of permission to use the existing survey is available in Appendix D. TPACK framework consists of the integration of three knowledge domains: technology, pedagogy and content (Koehler & Mishra, 2009). Application of this framework helped me see how teachers planned and organized the content of their lessons to better develop the pedagogical strategies in delivering the lessons as well as their ability and comfort level accessing and using tools in Second Life during the lesson.

Koehler and Mishra (2009) believe that the “TPACK framework allows us to make sense of the complex web relationships that exist when teachers attempt to apply technology to the teaching of subject matters” (p.67). To verify the validity of the survey for use in the current study, a review was conducted of the studies using the TPACK framework in their work (Archambault & Barnett, 2010; Chai et al., 2010). Despite minor wording changes in each survey, findings consistently showed Cronbach’s alpha of 0.89, which established overall reliability. Cronbach’s alpha is a measure used to assess the reliability of a set of scales or test items. The general rule of thumb is that a Cronbach’s alpha of .70 and above is good, .80 and above is better, and .90 and above is the best (Tavakol & Dennick, 2011).

There are two sections in the TPACK survey. The first section focuses on the demographic backgrounds of the prospective participants and other relevant background information, such as experience using computers. This section is important for understanding what prior experiences participants brought with them to these foreign language classrooms and how these experiences might have affected the evolution of their teaching processes. The survey
was adapted to match the Virtlantis, Cypris and Second Life locations and courses, such as removing any references to math classes and focusing solely on language courses. Listening and speaking were the focus of the survey.

Section 2 of the TPACK survey was adapted from Schmidt, Baran, Thompson, Mishra, Koehler, and Shin’s (2009) survey of pre-service teachers’ knowledge of teaching with technology. The survey included 55 items that cover the TPACK domains, namely technological knowledge, content knowledge, pedagogical knowledge, pedagogical content knowledge, technological content knowledge, technological pedagogical knowledge, and technological pedagogical content knowledge. The survey used a five-level Likert scale (1 equalling “strongly disagree” to 5 equalling “strongly agree”). The survey was adapted for this study by incorporating statements related to teaching language in general and using Second Life for teaching language specifically. Statements including references or terminology related to mathematics, social studies, and science were replaced with verbiage specific to speaking and listening. A few statements were added based on the description of the TPACK domains provided by van Olphen (2008a). For example, under Content Knowledge (CK), I modified original survey item 29 from “I can select effective teaching approaches to guide student thinking and learning in social studies” to “I can select effective teaching approaches to guide student thinking and learning in the target language.”

The prospective participants were sent the survey through personal email and notecard in Second Life. I was available through email or Second Life personal chat if the participants had any questions about the survey. Participants had approximately two weeks to answer the survey, which asks about the teachers’ understanding of the technology they were using in the language classrooms. SurveyMonkey was used to deliver the questionnaire. The TPACK questions were
designed to determine what language and technological skills had been used by instructors in their classrooms.

Interviews

Bodgan and Biklen (2003) define interviews as a method to “gather descriptive data in the subject’s own words so that [the researcher] can develop insights into how subjects interpret some piece of the world” (p. 95). I created a schedule to interview each participant through a meeting in Second Life. The purpose of these interviews (Appendix C) was to further understand how the use of Second Life as a tool can affect the acquisition of speaking and listening skills in learning a foreign language: for example, “What skills do language teachers need to know to teach speaking and listening in Second Life” and “Do you think the materials and activities helped you get prepared to teach speaking and listening using Second Life?” and “How helpful were the instructions?” The interviews were recorded, transcribed and coded for data analysis. Interviews were recorded on an iPhone 6, a Sony digital recorder, as well as on Garage Band in my computer. Each interview lasted for about one to one and half hours, depending on how the prospective participants answered the questions and whether there were follow-up questions. After each interview was recorded, it was transferred to my personal computer to be transcribed.

Data Analysis

In this study, each type of data collection was recorded. This helped organize the findings. The interview transcripts, class documents, classroom observations, and chat logs, as well as the demographic and TPACK surveys, were all analyzed. Data were read and reread several times prior to analysis (Bogdan & Biklen, 2003) with the aim of developing a
comprehensive understanding of the participants’ experience using Second Life as a technological resource to teach languages.

Both I and a second coder analyzed the qualitative data. The data analyst was a postgraduate student working on her PhD in Instructional Technology. She is familiar with Second Life and the TPACK framework. To ensure inter-rater reliability, the data analyst and I both had to agree to 85% from 100% coding.

There were a number of steps in coding the qualitative data. Researcher notes were taken on all data sources. For the TPACK survey, I categorized each category with the number (see Table 4). In the data input process in Excel, I recorded each item for each category for each participant. Then I calculated each item’s mean score across the seven participants. I regard 5 and 4 as high mean scores, 3 as an average mean score, and 2 and 1 as low mean scores (see Table 5).

Table 4

<table>
<thead>
<tr>
<th>Categories</th>
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<tbody>
<tr>
<td>Technology Knowledge (TK)</td>
<td>TK 1 – 17</td>
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<tr>
<td>Content Knowledge (CK)</td>
<td>CK 18-25</td>
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<tr>
<td>Pedagogical Knowledge (PK)</td>
<td>PK 26-32</td>
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<td>Pedagogical Content Knowledge (PCK)</td>
<td>PCK 33-35</td>
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<td>Technological Content Knowledge (TCK)</td>
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<td>Technological Pedagogical Content Knowledge (TPACK)</td>
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Table 5

TPACK Survey Mean Score Results

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</table>
The patterns were identified by comparing the mean scores for each participant and then comparing across all participants. I identified that five items’ mean scores were the lowest among other items: TK 4 (I frequently play around with technology), TK 5 (I know about a lot of different technologies), PK 32 (I know how to organize and maintain classroom management), PCK 35 (I know how language concepts can be explained to help learners learn the target language) and TCK 38 (I know how the target language concepts can be expressed through the use of Second Life) (see Table 6).

Table 6
Lowest Mean Scores from TPACK Survey

<table>
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<tr>
<th></th>
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</table>

To analyze the interview transcripts, class documents, classroom observations, and chat logs, as well as the demographic and TPACK surveys, I followed Saldaña’s (2015) cyclical model. Saldaña illustrated the coding cycle as shown in Figure 10. The process starts with coding, moves to category identification, and finally reveals the themes.
Saldaña (2015) contends that “a code in qualitative inquiry is most often a word or short phase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (p.67). Saldaña added the data should consist of interview transcripts, classroom observations or documents. In the current study, I used the interview transcripts, classroom observations, chat logs, background surveys, TPACK surveys and class learning materials as the data sources. The data were all coded in the same in vivo coding process (see Table 7).

In vivo coding is “a form of qualitative data analysis that places emphasis on the actual spoken words of the participants” (Manning, 2017, p.1). This form of coding can help the researcher to highlight specific words or phrases from the participants and use them as a code. Manning further explained in vivo coding is “championed by many for its usefulness in highlighting the voices of participants and for its reliance on the participants themselves for
giving meaning to the data” (p.1). During the in vivo coding process, I and the data analyst read each transcript several times to identify the initial code.

Table 7
In Vivo Coding Sample

<table>
<thead>
<tr>
<th>Findings</th>
<th>Initial codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I think I am not so well using my English. But inside Second Life, our avatar will protect our identity. If I make a mistake, it is not me, it is my avatar (ES, Interview #1)</td>
<td>Avatar/Identity</td>
</tr>
<tr>
<td>The teachers always come before the class time and the students came and left the class as they pleased (All teachers, Class observations #1,2,3,4,5,6,7)</td>
<td>Time</td>
</tr>
<tr>
<td>Teacher: Can you hear me? I cannot hear you Student: I can hear you Teacher: You need to relog again (EG, Chat log #4)</td>
<td>Voice problems</td>
</tr>
<tr>
<td>We will look at some pictures and then talk about them to get a taste of the topics (PE, Class document #3)</td>
<td>Teaching activity</td>
</tr>
<tr>
<td>4 teachers identified themselves as a native speaker and 3 teachers identified themselves as nearly native speakers (Background survey #6)</td>
<td>Native speaker</td>
</tr>
<tr>
<td>The data show a mean score of 4 in the TPACK survey exit poll on the teachers have a high confidence in assessing student performance in a classroom (PK 26) (TPACK survey result)</td>
<td>Teachers skills</td>
</tr>
<tr>
<td>The data show a mean score of 3 (lowest score in the TPACK survey) on the teachers’ ability in using a lot of different technologies (TK 5) (TPACK survey result)</td>
<td>Scripting</td>
</tr>
</tbody>
</table>

I used phrases as a code. During this process, I and the data analyst label sections or passages of the interview transcripts, class documents, classroom observations, and chat logs, as well as the demographic and TPACK survey, using highlighters. After labeling the data sections or passages, I and the data analyst met to compare the initial codes. From those initial codes, I and the data analyst identified a long list of initial codes (see Table 8).
### Table 8

Lists of Initial Codes

<table>
<thead>
<tr>
<th>Initial codes</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet access</td>
<td>Students need stable internet access</td>
<td>“Not everybody have a strong and stable internet access. Second Life requires a strong and stable internet access. (EE, Interview #1)”</td>
</tr>
<tr>
<td>Access blocked</td>
<td>Students cannot access several website links from their location</td>
<td>“In some countries, the students cannot even open a certain link. (PE, Interview #1)”</td>
</tr>
<tr>
<td>Slow</td>
<td>How fast computer responds to open a program</td>
<td>[07:20] Teacher: C?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[07:21] Teacher: are you there?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[07:21] Student: yah still loading. It so slow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[07:21] Student: very sorry (EG chat log, Class observation #4)</td>
</tr>
<tr>
<td>Equipment</td>
<td>How well the students’ computer hardware and software in running SL</td>
<td>“I cannot hear you well”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“Can you manage a setting on your profile?”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“I cannot see the profile icon. I am using my Ipad” (Chat log, GE class observation #2)</td>
</tr>
<tr>
<td>Scripting</td>
<td>How well teachers can create an object in Second Life by using a scripting program</td>
<td>“I don’t know how to script. So I buy something from Second Life. It takes time to script.” (DE, Interview #2)</td>
</tr>
<tr>
<td>Technical problem</td>
<td>How well the teachers help students with technical problems</td>
<td>[13:45] Student: peronen ete alumno esta medio mareado</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[13:46] Student: ahora no me llega el audio</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[13:47] Teacher: Me escuchas?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[13:47] Student: no</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Then E move closer but the student still could not hear E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Then E tried to help him check his preferences</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[13:50] Teacher: Checa tus preferencias</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Then E said she can hear him.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Then the student asked for help and then E responded in chat box (ES Classroom observation #4)</td>
</tr>
<tr>
<td>Table cont. from previous page</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Griefers</strong></td>
<td>A Second Life user who harasses others with verbal abuse in text or voice chat; with the use of offensive avatars or avatar accessories, and the abuse of devices that affect the other users’ ability to remain logged into Second Life or crash entire server (Griefer, n.d)</td>
<td></td>
</tr>
<tr>
<td><strong>Voice problems</strong></td>
<td>How clear can the voice be heard during the class</td>
<td></td>
</tr>
<tr>
<td><strong>Time/ schedule</strong></td>
<td>How easy it is to manage a schedule for a class</td>
<td></td>
</tr>
<tr>
<td><strong>Flexibility</strong></td>
<td>How easy a teacher can modify class time based on their availability</td>
<td></td>
</tr>
<tr>
<td><strong>Attendance</strong></td>
<td>How frequently students come to class</td>
<td></td>
</tr>
<tr>
<td><strong>Commitment</strong></td>
<td>How much time teachers dedicate to their class</td>
<td></td>
</tr>
<tr>
<td><strong>Class layout</strong></td>
<td>How well the teachers adapt the class situation to the language lessons</td>
<td></td>
</tr>
<tr>
<td><strong>Teaching tools</strong></td>
<td>How well the teachers utilize teaching aids such as note cards, external website links, microphones, Google docs in SL</td>
<td></td>
</tr>
<tr>
<td><strong>Low level students</strong></td>
<td>How well the students performed in class</td>
<td></td>
</tr>
<tr>
<td><strong>Learning materials</strong></td>
<td>How the teachers use different kinds of teaching materials obtained from online or books</td>
<td></td>
</tr>
<tr>
<td><strong>Textbooks</strong></td>
<td>One of the learning source types</td>
<td></td>
</tr>
<tr>
<td><strong>Identity</strong></td>
<td>How comfortable the students are in hiding their personal information in the avatar form</td>
<td></td>
</tr>
</tbody>
</table>

““In Cypris, not only in Cypris but many other language learning groups, we had griefers like those who wants to harass people. Like trolls. We had this one particular guy from … He started coming about 8 years ago. He just keep coming back with different avatars even if you banded. He keeps using voice and says anything that makes you feels uncomfortable with the cultural things. Most people are left because of him.” (ME, Interview #1)

[06:41] Teacher: I can't hear your voice
[06:42] Teacher:  Lさん、こんにちは (good afternoon Ms. L?)
[06:43] Teacher: slow
[06:44] Student: I think X voice is breaking up (YJ chat log, observation #2)

“Students can take the class whenever they want. We can communicate in a schedule convenient for both of us.” (ES, Interview #1)

“I need to take up of one or two months of break. Just resume again after.” (PE, Interview #1)

ME had at least 12 students in her class from 7 class observations. 10 students always consistently came to her class. (ME class observation note)

“I really hunt for the right articles. If there are three short articles, I will make three readings. If it is a long article, I will make one reading. It takes times to do that” (PE, Interview #2)

DE took the students to a restaurant so they can learn more about things in the restaurant. (EE, Class Observation #4)

PE, YJ, EE, ES and EG constantly used external website links in their classes. All of the teachers always utilized note cards and microphone in the class. (Multiple class observations)

“Is it too hard? If so we can do something else” (EG class observation #2)

PCK 34 (I can choose appropriate activities to help my students practice target language concepts, especially listening and speaking). Mean score is 4, which is above average.

Online version of Genki textbook and self-authored Spanish textbook (Classroom documents)

“Some people coming who are female playing with their male avatars, and they can sort of accepted for a whoever they feel are. They can express themselves through avatars when they are in class. That makes them comfortable.” (DE, Interview #1)
Table cont. from previous page

| Immersion | How well the teachers use other teaching tools to support understanding the language and culture | “Like one time we did an article on Fabeles in Brazil. The run-down places. You know the second places where people go when they have no money. They just live in this run down places. I turned the sim into the same place so students can feel it even though they were not there.” (PE, Interview #2) |
| Second Life nature | How well Second Life affordances can help students to learn the language | “You can do it easy because no cost are involved. Also funny animations. I think you can learn vocabularies better with animations.” (EG, Interview #1) |
| Native speakers | A person who speaks the language used in their country of origin | “The students would always come to Cypris because there are a lot of native speakers that they can talk with” (ME, Interview #1) |
| Affordances | Something that helps teachers and students access and navigate the virtual worlds | “And of course, there are some sort of affordances of the environments like you can… Like the holodeck that we have in Cypris. We can raise up a hotel, a police station, an airport, then you can role play in those environments and that sorts of fun and more realistic than in classroom role play” (DE, Interview #1) |
| Avatar | How well the students use a 3D graphical representation of themselves. | “First of all, you have an avatar, you have a representation of yourself. It becomes quite personal. It becomes you and you can feel comfortable interacting with other people in more natural way.” (ME, Interview #2) |
| Places | Locations where the class activities were held | Teachers used the same location or different locations (Multiple classroom observations) |
| Time preparation | How much time the teachers spend to prepare a lesson | “I spent over three hours just to prepare a note card like this. It took a lot of time to prepare for one lesson” (DE, Interview #1) |
| Teaching activities | How well the teachers prepared the class activity | GE asked her students to role play based on a script. Students had to find a suitable avatar to act out based on the script. At the end they posted it on YouTube (GE, Class Observation #5) |
| Teachers’ skills | How well the teachers use their computer and language skills for teaching the language class | “First how to use Second Life. You also need to organize class activity, create learning materials and even be able to help your students if they have problems.” (EG, Interview #2) |
| Type of questions asked | How did the teachers assess students’ performance and understanding | PK 26 (I know how to assess student performance in a classroom) mean score is above average (4). (TPACK survey mean’s score results) |
| Checking students | How well the students understand or follow the lesson | [06:35] ME: that's / they're / there's [06:36] ME: that is [06:36] ME: they are - they're ME tried to check her students’ understanding of the differences of those words (ME, Class Observation #2) |
After determining the initial codes, I moved to the second cycle, which grouped the initial codes into patterns. I looked at my notes and collapsed and expanded codes to understand the patterns. Punch (2014) defines a pattern code as “a sort of meta-code…. Pattern codes pull together material into a smaller number of more meaningful units” (p.174). In finding the patterns, I was looking for frequency (often or seldom), sequences (happen in certain order), similarities (happen in the same way) and/or differences (happen in predictable different ways) to form a category (Hatch, 2012). For example, the interview data show all teachers agreed to teach in Second Life because they could replicate other places in the world. From the class observations, four teachers took their students to different places in Second Life such as a museum or car dealer. The TPACK survey results indicated that the teachers gave the highest score (5) for their ability to search for objects, people, and places using the search function and the map in Second Life (TK 10). Some of the class document data showed instructions for students to go to different places in Second Life. Chat log data showed some students asked for a map to a specific place that the teacher had assigned them to visit. I saw the word “places” frequently appear across the interviews, class observations, TPACK survey, class documents and chat log data. Therefore, I categorized those initial codes as “places.” Saldaña (2015) explained, “When you search for patterns in coded data to categorize them, understand that sometimes you may group things together not just because they are exactly alike or very much alike, but because they might also have something in common” (p. 6).

Another example, from the class observations, the teachers were able to help their students with technical problems such as voice. The teachers were able to instruct students to do several things to be able to hear or produce voice in class. From the interview data, all the teachers agreed that they were able to help their students with technical issues such as voice
problems. From the chat log data, I found that the teachers used chat logs to give students instructions in writing to fix the voice problems because they could not hear the voice instructions. From the TPACK survey, the teachers believed that they had the technical skills to use technology (TK 6) and they can use the voice chat in Second Life (TK 13). The mean score was above average (4 for TK 6 and 5 for TK 13). Therefore, I used “voice problem” as a phrase code category. I input the electronic versions of the interview transcripts, class documents, classroom observations, and chat logs, as well as the demographic and TPACK survey, into an Excel spreadsheet.

The final step in the coding cycle is finding a theme (Saldaña, 2015). Themes “are broad units of information that consist of several codes aggregated to form a common idea” (Creswell, 2013, p.186). In this process, I reviewed the interview transcript, classroom observation, chat log, background survey, TPACK survey and class learning materials data to reflect the same phenomenon into categories and finally themes (see Table 9).

Table 9
List of Themes

<table>
<thead>
<tr>
<th>Initial codes</th>
<th>Categories</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet access</td>
<td>Internet issues</td>
<td>All teachers faced challenges teaching in Second Life</td>
</tr>
<tr>
<td>Access blocked</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td>Computer</td>
<td></td>
</tr>
<tr>
<td>Scripting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Griefers</td>
<td>Second Life issues</td>
<td></td>
</tr>
<tr>
<td>Voice problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time/ schedule</td>
<td>Time/ schedule</td>
<td>All teachers knew how to manage their classes in Second Life</td>
</tr>
<tr>
<td>Flexibility</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table continued on next page
Establishing Trustworthiness

The concept of trustworthiness has been explored by Lincoln and Guba (1985). They described trustworthiness as established when findings closely reflect what the participants have described. Trustworthiness is the result of a close relationship that the researcher has with both the participants and the data. However, bias can occur if the researcher is too close with either. In order to manage bias, qualitative researchers should have some strategies in place to describe their findings in a way that authentically represents the intentions of the participants (Creswell, 1998, 2003; Horsburgh, 2003, Lincoln & Guba, 1985; Padgett, 1998).
Lincoln and Guba (1985) proposed four criteria that can be considered by researchers to maintain trustworthiness: credibility, transferability, dependability, and confirmability. Credibility refers to how the research is conducted and how closely the findings reflect reality. The researcher must ensure that the study has accurately recorded the phenomena under careful observation (Shenton, 2004). Transferability refers to the degree to which the results of qualitative research can be generalized or transferred to other contexts or settings (Lincoln & Guba, 1985). It is the researcher’s responsibility to judge, make assumptions on the research context, and decide whether to transfer the results of the study to a different context. Dependability refers to how the researcher must write the study’s report in as much detail as possible (Shenton, 2004). Dependability allows future researchers to repeat the study. Finally, confirmability is a strategy to “ensure as far as possible that the work’s findings are the results of the experiences and ideas of the informants” (Shenton, 2004, p. 72).

There are five primary strategies researchers should use to maintain trustworthiness. First, trustworthiness demands close attention to member checking (Lincoln & Guba, 1985). In the process of member checking, I asked the participants to review the summary of data analysis and the final results of the study. I asked the participants whether they felt the data were being interpreted in a manner congruent with their own experiences. In addition, the participants were asked to give comments that directly connected to the study.

I maintained trustworthiness by basing the study on these four established criteria. I stated how the research had been done, how the data had been organized in a safe way, and then wrote the study’s report in detail.

The second strategy for maintaining trustworthiness is to triangulate different data sources from participants, which is known as triangulation. Creswell (2013) defines triangulation
as a process to combine evidence from multiple data sources: for example, evidence from
different language instructors (e.g., interviews from seven language instructors), types of data
(e.g., worksheets and observation notes), and methods of data collections (e.g., interview and
surveys). Furthermore Creswell (2013) claims that triangulation will provide evidence to support
codes or themes, which ensures information accuracy because the information comes not only
from one source but from multiple sources. With triangulation, the researcher will develop a
credible and accurate report.

The third strategy is providing a detailed description of the setting to convey the findings
(Creswell, 2013). The researcher gives detailed descriptions on all the research processes from
data collection, how to code and analyze the data, and the context of the study to write the final
report. Detailed or thick description helps other researchers who want to simulate similar
research in a different setting. Shenton (2004) argues that “without this insight (thick
description), it is difficult for the reader of the final account to determine the extent to which the
overall findings ‘ring true’” (p.69).

The fourth strategy as Creswell (2009) suggests is to spend prolonged time in the field
(p.192). I spent about six weeks collecting data and several months working on the data. In this
way, I developed in-depth understanding to present detailed explanations about the research,
which gives credibility to the narrative I have produced.

The final strategy is to clarify bias (Creswell, 2013). Therefore, I explained my
background as a language instructor and my perspective of working with students. Additionally,
to minimize bias, I continued to reflect on my role in the study as I collected, analyzed and
presented the data. Creswell (2009) argues that “good qualitative research contains comments by
researchers about how their interpretation of the findings is shaped by their background, such as
their gender, culture, history, and socioeconomic origin” (p.192). I consistently reminded myself not to judge the participants’ actions and focus on understanding what they were doing and how they were doing it to provide an unbiased account of the data.
CHAPTER 4
FINDINGS

This chapter summarizes the findings from the interview transcripts, classroom observations, and chat logs, as well as the demographic and TPACK surveys. I integrated those data to respond to the research questions:

1. How do teachers demonstrate their technological pedagogical content knowledge (TPACK) in the context of teaching speaking in Second Life?
2. How do teachers demonstrate their technological pedagogical content knowledge (TPACK) in the context of teaching listening in Second Life?

Due to the overlap in the research questions, I have organized the findings based on the primary theme connected to teaching listening and speaking in Second Life: “the teachers demonstrated different aspects of TPACK in Second Life”. Furthermore, two supplementary themes were revealed: “all teachers knew how to manage their classes in Second Life” and “all teachers faced challenges teaching in Second Life.” However, before presenting the themes, it is important to understand the demographic backgrounds of the participants and the structure of this type of informal virtual language classes.

Demographic Backgrounds

There were seven participants in this study. I used initials to protect their identities (see Appendix A).
EE is a male English teacher between 50-60 years old. He had been teaching English in Second Life for nine years. In real life, he was an English teacher. EE taught the beginner, intermediate and advanced levels for teenagers and adults. EE’s responsibilities were to plan classes, select textbooks and design materials. In addition, EE also used YouTube as a learning source in the class. EE said he always used technology in his English classes and did some activities, e.g., internet search and online games, during the lessons. EE always used virtual worlds to teach the lesson but not for other purposes such as gaming. EE never played online games.

ES is a female Spanish teacher in Second Life between 50-60 years old. She has had 15 years of experience in Second Life. In real life, she was a Spanish teacher. ES taught Spanish for beginner, intermediate and advanced levels for adults only. ES was responsible for planning classes, designing materials and tests, and selecting textbooks for the class. She had also written her own textbook. During the lesson, ES used her textbook, YouTube and other technologies such as a whiteboard. ES often used technology such as internet searches, online exercises, blogs and wikis during the lessons. ES always used virtual worlds to meet new people, just for fun and to teach. However, ES did not use virtual worlds for online gaming.

EG is a Polish female between 50-60 years old who has had 10 years of experience as a researcher and has been teaching German, French, Latin and Polish as a foreign language. In Second Life, EG taught German. EG taught beginner, intermediate and advanced levels for adults only. EG was responsible for planning classes and designing materials and tests in her German class. EG used online media such as YouTube and others (transcriptions, exercises, grammar manuals). EG always used technology during the lessons for activities such as internet
searches, online exercises, blogs, wikis and online games. EG often used virtual worlds to meet new people, just for fun, to teach and to learn languages. EG did not play online games.

YJ is a male Japanese teacher between 50-60 years old. YJ’s current job was as a researcher. YJ had one year of experience in teaching Japanese in Second Life. YJ taught Japanese only for adults at the beginner level. YJ was responsible for planning classes, designing materials and tests, and selecting textbooks. YJ used the online form of Genki textbooks as learning materials. YJ sometimes used technology such as online exercises, online games and online whiteboards during the lessons. YJ used virtual worlds just for fun and for teaching purposes. YJ frequently played online games.

PE is a female teacher with five years of teaching experience. She was between 40-50 years old. She taught English at the intermediate and advanced levels for teenagers and adults in Second Life. In real life, PE was a teacher. PE planned and designed class materials. In addition, PE designed tests if they were necessary for assessing the learning. She provided and designed pleasant environments to encourage participant enjoyment. PE used online media such as YouTube, news articles, quizzes and role play in Second Life. PE always used technology such as internet searches, online exercises, vocabulary and grammar games designed for ESL students and inworld tools that are scripted. PE used Second Life initially to teach as well as to learn about other cultures and as motivation for learning languages. PE did not play online games.

ME is a female between 50-60 years old. She has been teaching English in Second Life for more than 10 years. ME was a researcher in her real life. ME taught students who were adults in the beginning and intermediate levels. ME’s role in this class was to plan and design class materials. ME used YouTube in her classroom. ME always used technology in her classes such
as internet searches and online games for ESL students. ME used Second Life for teaching purposes only and indicated that she never plays online games in Second Life.

DE is a male between 40-50 years old who taught English in Second Life and his real life. He had over five years of experience teaching English. DE taught English for the beginner, intermediate and advanced levels who are adults. He was responsible for planning and designing the classes. DE obtained his teaching materials from YouTube. He always used technology such as internet searches, podcasts, online exercises, and blogs in his classes. He used Second Life for teaching purposes only. DE never played online games in Second Life. The next section will discuss the first theme: how the teachers managed their classes in Second Life.

Informal Virtual Language Class Settings

This study was conducted in Second Life in informal virtual language class settings. The classes in this study were not affiliated with any academically accredited institution. Instead, the participants in this study had decided to independently offer the language classes for free to anyone who chose to attend. The classes were intended to improve the students’ listening and speaking skills.

Due to the informal nature of these classes, students were not required to register or consistently attend. They were free to come and go as they chose, which was also true for the teachers. In addition, the teachers were not required to take attendance, create formal lesson plans, or assess the students’ progress. However, because of the lack of formal administrative support, the teachers held multiple roles as manager, troubleshooter, and teacher at the same time.
In this study, ES rented an island for her class activities; EE owned an island; ME, YJ and DE were using Cypris Island to host their classes; and EG and PE used Virtlantis as their virtual site. Although the grid was always accessible for students, the teachers were only available during their class time, generally one to two hours per week.

Teachers Demonstrated Different Aspects of TPACK in Second Life

The major theme revealed in the finding is that the teachers demonstrated different aspects of TPACK in Second Life. This section discusses how the teachers prepared themselves before and during the class. First, I present findings that show the teachers’ content knowledge.

Content Knowledge (CK)

Before conducting the class, the teachers made several preparations such as selecting the articles or podcasts. The teachers spent a lot of time to prepare each lesson. DE said, “I spent a lot of time working on my lesson plans for my Thursday class, the podcast circle. I did a lot of work…. I would spend probably two hours making a notecard” (Interview #1). In addition, DE mentioned,

I am not very good in improvising teaching to be honest. Or maybe I am but I do not like doing it. I have a fear of running out of activity… But that is how I prepare in my real-life class too. I always over prep because there are times that…. I don’t have to pull some games out in a minute because I have 15 minutes left that I don’t know what to do. (Interview #1)

Most of the teachers treated their Second Life classes like a face-to-face class in a real time. PE explained,

I imagine what would paying students expect. I do not want a teacher that comes late and materials are not ready. You have to respect people’s time. Paying or not, they make a time to come to a class. It is real time. So, to make their time worth it, I have to be ready
for it. So, those things that I prepared, like those other links, are very important for me as a teacher. (Interview #1)

From multiple class observations, I noted that all the teachers showed confidence in running their classes and always had their learning materials ready for the students. At the beginning of the class, the teachers asked students to open a notecard that contained the learning materials for that class time.

In selecting the class materials, the teachers showed their confidence in choosing the appropriate materials. PE said, “I got to make sure that it is fit to a certain length. If it is too long, then people are getting bored. If it is too short, then they don’t get enough” (Interview #1). EE added, “You have to think about the lesson plan. The lesson materials that make sense to do in Second Life.” Moreover, ME mentioned, “I have to explain things to the students, so I had to look up on the internet and I was studying hard myself before giving the lesson to my students” (Interview #2).

The teachers’ confidence levels in preparing the lessons are also shown in the TPACK survey “can choose appropriate activities to help my students practice target language concepts, especially listening and speaking (PCK 34),” as shown in Figure 11. The data show an average score of 3.57 across the participants. YJ, PE, ME and EE self-reported their scores as 3, ES and EG were 4, and DE was 5.
That self-reported knowledge level was probably reflected in the teachers’ native or nearly native knowledge about the target language, which was also reflected in the TPACK demographic survey. The teachers, on average, had high scores in the ability to use the target language (CK 18-21) and knowledge about the target language (CK 22-25). Those numbers can be seen in Figure 12 and Figure 13. Figure 12 shows the teachers’ ability to listen (CK 18), speak (CK 19), use the target language appropriately in different contexts (CK 20) and proficiency in the target language (CK 21). YJ, PE, ES, EG, EE and DE self-reported their score as 5, whereas ME self-reported her CK 18 and CK 19 as 5 and her CK 20 and CK 21 as 4.
Figure 13 shows the teachers’ understanding of the target language culture (CK 22), linguistic system (CK 23), how people learn languages (CK 24), and various ways and strategies of developing their understanding of target the language (CK 25). For CK 22, PE, EG, ME and EE self-reported their score as 4 and YJ, ES and DE as 5. For CK 23, YJ, PE, ME, and EE self-reported their score as 3, EG as 4, and ES and DE as 5. For CK 24, YJ and PE self-reported their score as 3, ME and EE were 4, and ES, EG and DE as 5. For CK 25, PE and ME self-reported their score as 3, YJ as 4, and ES, EG, EE and DE as 5.

Figure 13: CK 22-25 scores.

Technological Content Knowledge (TCK)

In the class, the teachers used a variety of technology. Table 10 shows the different types of teaching tools the teachers used in their classes along with the sources.
Table 10
Teaching Tools

<table>
<thead>
<tr>
<th>Second Life</th>
<th>Internet based</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Holodeck</td>
<td>• YouTube</td>
</tr>
<tr>
<td>• Whiteboard</td>
<td>• External links such as <a href="http://www.liniot.com">www.liniot.com</a>; <a href="http://www.answergarden.com">www.answergarden.com</a></td>
</tr>
<tr>
<td>• Scripted voting machine and timers</td>
<td>• Podcast</td>
</tr>
<tr>
<td>• Second Life environment</td>
<td></td>
</tr>
<tr>
<td>• Notecards</td>
<td></td>
</tr>
</tbody>
</table>

From the class observations data, I noted that all the teachers used notecards as their main teaching tool for delivering the learning materials. The teachers handed out the notecards at the beginning of the class. The notecards were automatically saved in the students’ inventory tab every time the students received them. The students could retrieve the notecards any time during or after the class. Figure 14 shows a sample of a notecard containing lesson materials (Class documents).

Figure 14. Sample of a notecard.
Lesson materials usually contained time, location and instructions for doing the exercises (Class documents). PE structured her class materials with the time, location and instructions, but others did not place the time and location on their class documents. Class documents also contained outside weblinks for the students to follow (Figure 15).

![Image](image)

**Figure 15:** Sample of PE’s class document instruction.

In running the class, the teachers used teaching tools within Second Life such as the scripted voting machine (see Table 10). Teachers could purchase Second Life tools through a Second Life store. Some of the teachers (PE, ME, DE, YJ) created objects in Second Life while some just bought them (EG, ES, EE). The teachers who could create objects in Second Life claimed that it was a “very useful skill.” They could create an object based on their need and preferences. If they purchased them, “they could not really get what they wanted” (PE, Interview #1). However, the teachers who could not create objects in Second Life thought that scripting an object in Second Life was unnecessary and too difficult (EG, ES, EE, Interviews #1). In addition, it took a lot of time to do so.

The teachers’ technological skills in creating or building objects in Second Life were above average, which is illustrated by their Technological Content Knowledge (TCK) scores in Figure 16. For TCK 36, YJ, PE and ME self-reported their score as 3; ES, EE and DE as 4; and EG as 5. For TCK 37, ME self-reported her score as 2; YJ and EE as 3; PE, ES, and DE as 4; and
EG as 5. For TCK 38, YJ, ME and EE self-reported their score as 2, PE and ES as 4, and EG and DE as 5. Only EG consistently gave a score of 5 for TCK 36 – TCK 38.

From the classroom observations, the researcher noted that PE, ME, DE, and YJ always used different Second Life tools during each class meeting. All of them were confident in utilizing the Second Life tools because they knew how to use a basic script in Second Life. PE, for example, changed her classroom environment in one class time and used a voting machine for her next class. DE took his class to different locations for his field trip classes.

**Pedagogical Knowledge (PK)**

From the TPACK survey, as for the Pedagogical Knowledge (PK), the participants indicated they know how to assess student performance in class (PK 26), adapt their teaching based on what students currently understand (PK 27), adapt their teaching styles to different learners (PK 28), assess student learning in multiple ways (PK 29), use a wide range of teaching approaches (PK 30) and were familiar with common student understanding and misconceptions (PK 31). Figure 17 shows PE, a full-time teacher, has a consistent PK score, whereas ME and
YJ, who only taught in Second Life (TPACK demographic survey), have more variations in their scores. DE’s and EE’s PK scores are higher than the other teachers, perhaps because they have spent more than 10 years teaching in Second Life and are teachers in their real lives (see Figure 17).

Along with the TPACK survey PK 26-32, the teachers used a wide range of teaching activities during classes to meet different learning styles. There were many kinds of class activities that each teacher used in class, as shown in Table 11. For example, one teacher did a role play, fill in the blank and reading activity during one class period (DE, Observations #1,2,4; PE, Observations #1,2,3,4,5,6,7). These activities are described below in Table 11.

In a role-play activity, the teachers usually gave a dialogue to the student. Students then took turns practicing the dialogue.
### Table 11

Types of Class Activities

<table>
<thead>
<tr>
<th>Type of in-class activity</th>
<th>Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role play</td>
<td>Microphone, notecards for instruction</td>
</tr>
<tr>
<td>Fill in the blank</td>
<td>Notecards</td>
</tr>
<tr>
<td>Matching words</td>
<td>Notecards</td>
</tr>
<tr>
<td>Debate</td>
<td>Microphone, notecard for instructions, nearby chat, voting machine, timer machine, holodeck</td>
</tr>
<tr>
<td>Pronunciation practice</td>
<td>Microphone, notecard for instructions, nearby chat</td>
</tr>
<tr>
<td>Field trip</td>
<td>Notecard for instruction, microphone, teleport, group voice chat</td>
</tr>
<tr>
<td>Word explanation</td>
<td>Microphone, notecards, nearby chat</td>
</tr>
<tr>
<td>Audio listening</td>
<td>Microphone, notecards, nearby chat</td>
</tr>
<tr>
<td>Games</td>
<td>Microphone, whiteboard, objects, website link</td>
</tr>
</tbody>
</table>

In Figure 18, there was an English translation of the dialogue displayed on the whiteboard in front of the room (ES, Observation #2). The teacher reviewed the dialogue first before practicing it together with the students. During this role play, ES corrected the students’ pronunciation if she found it was wrong. Sometimes ES asked the students to repeat the words several times until they could pronounce them well. At the same time, ES also typed the word using syllables and pronunciation keys in the nearby chat so the students could see how to pronounce the words, as seen in Figure 19.
ES also gave extra time for students to practice their pronunciation on their own time without opening the microphone while she was modelling the words. ES asked the students just to repeat the words after her without bothering to know the meaning of the word (ES, Observations #2,6,7).

In the fill-in-the-blank and matching words activities, students had to follow the instructions from a notecard (EE, Observations #1,4,6,7). The teacher gave enough time to students to answer the questions. If a student took a long time, the teacher would ask the student whether he/she needed help or a clue. If the student did not know what to answer, the teacher asked the student to guess or asked other students to help (see Table 12).
In PE’s debate activities, students were divided into two groups (Observation #5). Students had to follow the instructions to debate from the notecard that was given at the beginning of the class (see Figure 20).

Before the debate started, students were reading the article to get enough information about the topic. After getting enough information, the groups went to a different place to discuss their reasons for agreeing or disagreeing with the topic. PE created a different place for students to meet so the judges (two other students) could not hear their practice arguments. Students needed to touch the green button in the location to be teleported to this place (see Figure 21). After meeting with each group, students came back to the class and started their opening statement based on the phrases they had learned earlier. During the debate, the judges gave them scores and timed their deliberation. Figure 21 shows the voting machine and timer used in the debate activity.
11) Informal Debate Phrases

WHEN YOU ARE LISTENING TO THE OTHER SIDE..

- I see your point, but I think...
- Yes, I understand, but my opinion is that...
- That’s all very interesting, but the problem is that...
- I’m afraid I can’t quite agree with your point.
- I think I’ve got your point, now let me respond to it.
- We can see what you’re saying. Here’s my reply...

Figure 20: Sample of debate phrases in a notecard form in English class.

Figure 21: Green button to teleport student to a different room, voting machine and timer.

In the pronunciation activity, the students usually read a short article. The teachers corrected their pronunciation as they read. The teachers focused on correcting students’ mistakes in this activity. EE mentioned in a pronunciation class that the class was not going smoothly. He said, “I always correct the students. They speak and I kept interrupting them with the corrections” (Interview #1). EE claimed the students did not mind the corrections because it was a part of the learning process. ES did a different approach in the pronunciation activity. She mentioned, “I touch the board and then the red arrow appears on the board. I said the word a
couple of times and I asked the students to repeat the words on their own without opening the mic” (Interview #2). At the end of this activity, ES pointed at the word with the red arrow and had the students pronounce the word (Observation #7). Students had to repeat the word several times until they said it correctly. Another activity ES used was taking her students to visit her private home. She labeled most of the objects in her house (see Figure 22). Students went around the house with her and practiced the words and saw the objects at the same time.

ES’s field trip activity required a lot of movement from the students (Observation #2). The students needed to be able to walk, jump and fly to follow this activity. Before the activity started, the teacher sent a teleport location to the students via the nearby chat. EE created a voice group chat to be able to communicate only with his students. The teacher instructed the students to join the voice group through the nearby chat (Observation #4; see Figure 23).
In this activity, EE did not give instructions in a notecard form. He just talked and asked questions or asked students to do something. Students were actively engaged in this activity by asking “what” and “where” types of questions. Sometimes teachers asked students questions about an object such as “what is this?” or “what is M sitting on? (EE, Observation #4).

Figure 24 illustrates a field trip to the car dealer. Teacher asked students what kind of car that is. EE replied that is not a “jeep”. He explained Jeep is a brand of a car. It is an off-road car. EE said that people tended to say brand of an object and gave another example such as Kleenex. It is actually a tissue (EE, Observation #4).

During another one of EE’s field trip activities, students found a lot of objects that they did not know. Sometimes they had not seen that object in their real lives: for example, a diner. A
student from Japan said that there are no diners in Japan. During the field trip activity, this particular student was able to see what diners look like, what things are in diners, what kind of food is served, and the diner’s layout (EE, Observation #4). In this activity, the students had opportunities to ask as many questions as they liked using the microphone. Mainly only the teacher typed in some words in the nearby chat if necessary (see Figure 25).

Figure 25: Field trip to diner.

In ME’s and YJ’s listening activities, students listened to audio. Sources for this audio were from the internet (ME, Observation #1; YJ, Observation #2). The teachers opened a new window from their computers and played the audio. ME used a regular earphone and plugged it into her computer. One piece of her earphone was acting as a speaker. She placed one of her earphones next to her computer’s speaker and put the other earphone in her ear to listen. Other teachers sent a YouTube or website link to their students so they could listen on their own time (EE, Observation #6; EG, Observations #4,5,7; DE, Observations #1,3,7). Once they were finished listening to it, they typed “done” in the nearby chat (see Figure 26).
Different teachers preferred to say the word or dialogue to the students a couple of times and asked students to repeat the words until they said them correctly (ES, Observations #1, 2, 4, 7; ME, Observations #1, 2, 3). For example, one student had difficulties saying “dial” and “climb.” ME repeated the words a couple of times, as did the students. To make sure the students understood the words, ME sometimes asked questions. For example, in a listening for beginner-level activity in Cypris, students read the “Marchel and Shakespeare Letter.” The teacher then asked the students, “What is the color of the paper?” to check students’ understanding. Students replied, “blue” (ME, Observation #2). In addition, ME asked the students, “What will happen next?” and “Do you understand what is happening?” Students turned on their microphones to answer. In this activity, ME also encouraged students to close their eyes and just listen to the story from the audio to see if they understood.

The teachers also liked to play some games in the classroom to make the class more interesting. ES noted that games keep students’ interest. For example, the Spanish teacher was clapping, laughing, jumping and running. She asked students to guess what she did and say it in Spanish (ES, Observation #3). At the end, ES asked the students in Spanish to do the same thing with their avatars. In the Japanese class, YJ took his students to the park area (Observation #2; see Figure 27). At the park, there was a picture laid on a platform with Japanese words, a
whiteboard with some pictures on it, and also some chairs. YJ asked the students to stand on the pictures on the platform. Each student had to ask questions and take turns answering the questions.

![Image of a whiteboard with pictures and chairs](image)

Figure 27: Japanese games activity.

During this activity, one student asked in Japanese, “What is the picture in number 4?” and the other students replied, “It is an umbrella.” YJ also asked each student to ask questions in a polite way by directing the other students to sit in different-color chairs.

Another game played in a class is re-arranging the words using an external link. One student had to drag and drop the words. Other students were asked to evaluate his/her answer and make a different sentence if there were any other answers (PE, Observation #5; see Figure 28). PE claimed that everyone was engaging with this activity because when the other students were doing the drag and drop, they had to think if the sentence was correct and other ways the sentence could be formed.
Pedagogical Content Knowledge (PCK)

For the class activities, teachers took materials from different sources. The teachers picked up the learning materials based on their teaching experiences, referrals from other teachers or created their own learning materials. Figure 29 shows the teachers’ Pedagogical Content Knowledge (PCK). The data show the teachers believed they selected effective teaching approaches (PCK 33). However, on average the data showed the teachers gave lower scores on choosing appropriate activities for students (PCK 34) and how language concepts can be explained to help learners master the target language (PCK 35). ES, EG and ME gave a higher score (4) on both questions PCK 34 and PCK 35 because of their extensive experience in language learning and teaching in Second Life, whereas the others gave lower scores because of their more limited teaching experience (TPACK demographic survey).
Most of the teachers took their learning materials sources from internet sources such as YouTube, Podcasts, and online articles (TPACK demographic survey). Their reasons for choosing online materials were based on their availability and adaptability. As a result, the students would get new learning materials every time. PE, for example, had to cut up to 200 words from articles if they were too long to keep the students’ interest. PE mentioned that “she made sure the article fits a certain length” (Interview #2). She mentioned if the article was too long, then people would get bored. On the other hand, if the article was too short, the students would not get enough information. PE said making sure the students had a proper-length article was the most time-consuming activity. If the article was too short, the teachers combined a couple of articles in one class activity. The teachers put the selected articles onto a notecard with some other information. Sometimes teachers also re-used their previous notecards.

EE claimed, “The internet means everything” because it was so easy to get a lot of teaching materials from the internet (Interview #1). EE, PE, EG, ME and DE read online articles, so they used a screenshot or copied the article into a Google document. Then they put the reading onto a notecard. DE claimed he spent about two hours making one notecard. He said, “I did a lot
of work and spent a lot of time working on my lesson plans” (Interview #1). ME said, “It took a lot of time to prepare the materials. Gradually it started to wear me out” (Interview #2). After a while, the teachers had a lot of notecards and decided to re-use those notecards. DE claimed, “For the first five years, I would make a new one [notecards]. Then after that, I realized that I have hundreds of lessons and many of the students are new” (Interview #1). DE, EE, ME, and EG re-used their notecards; however, PE always made a new notecard for her class because it contained news clips (PE multiple class observations). She said, “It is the news, [and] it cannot repeat itself. I never re-use my materials. I keep making a new one” (Interview #1).

**Technological Pedagogical Knowledge (TPK)**

As for the listening activity, DE and ME mentioned that podcasts from the internet were the only sources they used. DE and ME said they could use a podcast for their listening classes as long as students have a transcript. EG mentioned that, “In my speaking class, I sometimes asked students to play a role from a script. They have to listen and watch YouTube first before they can practice their role. I think YouTube is the best resource for that kind of activity” (EG, Interview #1). That statement was reflected on TPK question 42: “I can adapt the use of technologies to different teaching activities,” as shown in Figure 30.
However, the teacher noted the podcasts available online were not designed for English for Second Language (ESL) students. It was just an authentic short audio show or reading. DE mentioned, “They are interesting to me and authentic, but they are way too difficult for ESL students” (Interview #1). In listening class, having a transcript was very important. Both DE and ME provided transcripts for the students in their listening classes. DE explained, “I like the combination of easy podcast with a transcript because it gives people with low ability something to grab onto” (Interview #1). Transcripts were also important in ME’s class because she asked her students to read the transcript out loud several times.

YJ and ES used a textbook in their classes. The teachers who used textbooks always continued the lesson where they were from the week before (YJ, Observations #1,2,3,4,5,6,7; ES, Observations #1,3,4,6,7). If a new student came to the class, the teachers would explain where they were and asked him/her to follow the materials. YJ used an online form of the Genki book. YJ handed a copy of the online version to the students at the beginning of the class. ES created her own book, which was always displayed on the whiteboard in the class. EG said, “I made my own book based on my teaching experience” (Interview #1). She then asked someone
in Second Life to make her book into a virtual book. If a student wanted to get ES’s book, he/she could purchase it from her with Linden dollars.

At the beginning of the class, except for those teachers who used a textbook or podcast in their classes, teachers provided background knowledge to the students. This background knowledge gave the students an idea about what the topic of the class would be on that day. The background knowledge could be in a picture, YouTube link, or in a statement form. Teachers would ask students to read or give their opinions based on what they have seen.

In one class, PE asked the students to look at several statements or pictures and watch some short clips from YouTube. Figure 31 is an example of a statement. PE gave some time for the students to think about the statement and asked the students to give their opinions. After finishing this activity, PE then asked the students to read an article from a prepared notecard. The topic of that day was, “What is toxic masculinity?” (PE, Observation #5).

![Figure 31: Sample of picture for a background knowledge.](image)

For TPK survey numbers 39-42, on average the teachers gave a score close to 4 but a score of 5 for TPK 43 (see Figure 32). For TPK 39 ME, self-reported her score as 2; YJ as 3; PE, ES, EE and DE as 4; and EG as 5. For TPK 40, ME self-reported her score as 2; YJ and PE as 3;
ES, EE and DE as 4; and EG as 5. For TPK 41, YJ and ME self-reported their scores as 2; PE as 3; ES as 4; and EG, EE and DE as 5. For TPK 42, ME self-reported her score as 2; PE as 3; ES, EG, and DE as 4; and YJ and EE as 5. For TPK 43, YJ and ME scores were 4 and PE, ES, EG, EE and DE were 5. Only ME gave a score of 2 in TPK 39-41 because she has no background experience as a teacher in her real life (TPACK demographic survey). ES, EG, EE and DE mostly gave scores of 4 and 5 because all of them had been and still were working as teachers in real life (TPACK demographic survey). EG is a researcher; however, she had conducted her research in a classroom setting.

Figure 32: TPK 39-43 and mean scores.

Technological Pedagogical Content Knowledge (TPACK)

For TPACK 44-55, on average the teachers had high scores (see Figure 33 and Figure 34). The teachers gave a score of 4 or 5 in each question, except for TPACK 48. On average, the teachers showed above-average scores. Only TPACK 48 posed a challenge because they did not
assess students’ performance in Second Life. None of the teachers except PE gave a formal exam or quiz to their students (TPACK demographic survey). All the exercises or homework given were just to be done as a class activity and were never recorded to monitor the students’ progress (multiple class observations).

Figure 33: Mean scores TPACK 44-45.
The next section discusses two additional themes that emerged from the findings: all teachers knew how to manage their classes in Second Life and all teachers faced challenges in teaching in Second Life.

All Teachers Knew How to Manage Their Classes in Second Life

On the TPACK survey, the teachers self-reported that they did not perceive they had knowledge of managing classes in Second Life. Based on the PK 32 (I know how to organize and maintain classroom management) survey results, YJ self-reported his score as 2; PE, EG and ME as 3; ES and EE as 4; and DE as 5. The interviews and observation data showed that they were more capable managing their classes in Second Life than their PK 32 score indicates (see Figure 35). Most of the teachers attributed their PK 32 score to the fluid and informal structure of the classes they taught in Second Life.
These teachers not only had to teach the language, but they also had to manage their classes. All of the participants believed that teaching in the virtual world was very flexible in terms of time and travel requirements. PE mentioned, “You don’t have to get up, get dressed, drive to a language center. You just stay in your PJs, get a drink, don’t have to wash your face, log in and you can already attend a class.” ES also mentioned that “we are comfortable at our house, [so it is] not necessary to be so formal.” The teachers and the students did not have to travel to a certain location, wear a certain outfit, or be neat to attend the class. All they needed to do was to boot up their computers, log in, and attend the class.

Beyond flexibility in terms of time and travel requirements, the teachers did not have any way of predicting student attendance. Even though they sent out reminders through the Facebook page or at the class location, ME explained the teachers could not expect the same number of students to come each time. DE argued that, for whatever reason, the students did not stick around. He concluded that if the students were not personally motivated to learn, they would not come back regularly.

There was no obligation for students to come to a class regularly due to the informal nature of the class. As a result, teachers did not know how many students they would have in
class each meeting. For example, in one lesson, PE had 10 students in one class time (PE, Observation #2); at a different time, PE had only a few students (PE, Observation #4). In addition, at the beginning of the class, ME had 10 students, but at the end of the class, she had 15 students (ME, Observation #3). Most of the time, the students stayed from the beginning to the end of the class. If a student had to leave early, usually the student typed into the nearby chat that he/she had to leave. Sometimes the student just left in the middle of the class without saying anything (EE, Observations #1,5,7; GE, Observation #4; PE, Observations #2,7; YJ, Observation #5; ES, Observation #4).

If a regular student came to the class late, other students greeted him/her in the nearby chat. For example, in ME’s class, the students typed, “Hi Takashi,” to welcome him or opened the microphone to say it (ME, Observation #3). If a new student joined the class, first, the teacher welcomed him/her and asked him/her to sit down and the other students acknowledged the new individual (ME, Observations #1,3,4; PE, Observations #3,4,6,7; DE, Observations #2,4,6).

There were only two times during my class observations that new students came after the class started. Those students just sat and observed the class even though the teachers asked them to participate (PE, Observation #3; EE, Observation #4).

Teachers could also decide when they wanted to take a break from the class and posted the announcement on the Facebook page and at their class location (see Figure 36). Occasionally, the teachers had to cancel the class for several reasons: ES had to cancel her class because there were no students in attendance (ES, Observation #6) or DE had to cancel his field trip because there were not enough students for the class activity (DE, Observation #2). In a field trip activity, if there was only one student in the class, the class was canceled. If teachers could not teach for
some reason (see Figure 37), they posted an announcement through the Facebook page and at the
class location (DE, Observation#2; EE, Observation #6). PE mentioned that, “I need to take one
or two months of break. Just resume again after…And sometimes I will ask others if they are
willing and confident, they can take a session. Sometime people have done that. So, sessions
carry on with other facilitators.” ES added, “I can organize my time,” so if she wanted to cancel
a class, she could just post a cancelation announcement.

Figure 36: Virtlantis calendar.

Figure 37: Sample of class cancelation in Facebook.
There was no obligation to teach at a certain time. EE concurred, stating, “It is my decision. I don’t have a boss who tell me you have to work Sunday between 4 and 6. It is something that I can decide to do and decide to stop doing.” DE mentioned that if he had to leave for a couple of weeks and came back to teach, fewer students came. He claimed people seldom paid attention to the announcements and the advertisements for the classes. The students just got into a pattern of coming at a certain time.

The teachers usually were already in the class location five to ten minutes before the class started and left the location after all the students were gone. If there were students already in the class, the teacher greeted them and asked how they were doing, asked about their outfit or asked if they had done their homework. Sometimes teachers took that time to practice the previous lesson with the students. For example, YJ asked students to practice their pronunciation of certain characters (Japanese characters) before the class started (YJ, Observation #2). The supplementary activity to practice pronunciation advanced students’ speaking and listening opportunities.

In addition to the class activities, the teachers also had to select a learning environment that supported the daily lessons. One of the teachers utilized her rented region (ES), another teacher (DE) owned his class location, and some of them used a free educational region such as Cypris (ME, DE and YJ) and Virtlantis (PE and EG). DE and ES promoted their language activities through the Facebook page and personal spaces. However, in public spaces like Cypris and Virtlantis, the Second Life administrator helped the instructors to start a class, organize the place to conduct the lessons, announce when the lessons start, and post class reminders (see Figure 38).
Once the class was announced, the teachers showed greater confidence in selecting appropriate spaces to host listening and speaking activities for the students in Second Life (TPACK 46). Figure 39 shows a mean of 4.7, which is considered a high number in the survey. Evidence from the class observations, interviews and TPACK demographic background supports this statement and are presented in the next paragraph.
During the lesson time, most teachers took their students to class locations that stimulated the students’ engagement in developing their speaking and listening skills (DE, Observations #2,3,5,6,7; EE, Observation #3; ES, Observations #5, 6, 7; EG, Observations #4,5,7). The class location could be in a traditional classroom form with a whiteboard in front of the room, in the park or in a living room setting. Figure 40 illustrates a traditional classroom where YJ sits at the end of the table in front of the whiteboard. YJ displayed Japanese characters in front of the class to help the students recognize the characters as they were practicing the pronunciation.

![Figure 40: Sample of traditional classroom.](image)

In contrast, Figure 41 shows a nontraditional classroom. In this picture, you can see that there is no table, no chair, and no whiteboard. In this case, EG decided to have a class near the beach with a firepit in the middle of the seating areas. During this class time, students were encouraged to socially converse about what they saw at the beach while practicing the dialogue and relating the description in the dialogue to the class setting.
The teachers not only demonstrated their ability to select appropriate spaces to meet in Second Life, they also demonstrated their ability to decorate the class in Second Life as shown in Figure 40 and Figure 41. Most of the teachers agreed that they were able to design their class setting in Second Life (TPACK 47) in a way they believed would foster learning, as shown in Figure 42.

PE claimed, “I would like to make my students feel comfortable through the classroom setting.” In one of PE classes, the students were talking about Ploonet, so PE created her class.
space as a virtual moon (Figure 43). Students were able to see some planets from the screen displayed in the class, which helped them to produce more words and ideas during the discussion (PE, Classroom observation #6).

![Figure 43: Sample of classroom immersion.](image)

During the lessons, both teachers and students were able to move around the room. However, before the lessons started, teachers usually established rules to follow. If there was a student who did not follow the rules, the instructors had the right to send that particular student out of the classroom (PE, Interview #1, Observation #2; DE, Observation #4). Figure 44 shows an example of when EE asked one of his new students to come back to his speaking class only when he has a microphone. In every class, teachers required students to have a microphone. A microphone is a very important tool for listening and speaking. ES, EE, ME and DE asked the students only to use the microphone when the student was asked to talk in class (ES, Observations #2,4; EE, Observations #1,2,3,5,7; ME, Observations #1,2,3,4,5,6,7; DE, Observations #1,3,4,5,6,7).
Although the teachers self-reported their management ability as low (2 and 3) on PK 32, the data from the class observations and interviews showed that they were capable in managing the class. The next section presents their ability to resolve the technology challenges they faced in teaching speaking and listening in Second Life.

All Teachers Faced Challenges Teaching in Second Life

The final additional theme that I found based on the interview transcripts, classroom observations and chat logs as well as the demographic and TPACK surveys is that all teachers faced challenges teaching speaking and listening in Second Life. The teachers had to rely on technology to run the class because Second Life is technology based and students could not participate without functioning technology.

In response to TK 1-6, all the teachers agreed that having knowledge about how to resolve technical problems was important. Figure 45 illustrates that ES and DE were less confident in their ability to solve their own technical problems or learn technology easily. In contrast, although YJ, ME, EG, EE, and PE believed they had a necessary technology skills, they admitted they did not frequently play around with technology (TPACK demographic survey) or know about a lot of different technologies beyond what they used to teach (TK 5). This discrepancy is shown in Figure 45.
DE said, “You have to be able to know a little bit about basic preferences [user setting] so you could help your students if they have issues.” PE mentioned, “Be familiar with second graphic viewer is something that you need to know first.” ME, who has a background as a Cypris technical assistant, mentioned, “People always came to me and said this person is having a problem with their voice. What should they do?” She mentioned having technical skills in Second Life brought both advantages and disadvantages. She said she could help the students right away; however, helping the students took away class time. Within one hour lesson, PE spent about 20 minutes to help a new student with her voice issues (Observation #3), DE spent about 15 minutes to help one student copy and paste their answer into the chat log (Observation #5), EG spent 10 minutes to help her student to be able to find the notecard in her inventory (Observation #2), and ES spent 12 minutes to help her student with voice issues (see Observation #4; Figure 46).
Figure 46: Chat log for solving a student’s problem.

The data in Figure 47 show that questions TK 4 (I frequently play around with technology) and TK 5 (I know about a lot of different technology) had the lowest scores on the mean graph. From the TPACK demographic survey, all the participants indicated that either they did not only play computer games. In addition, all seven participants indicated that they only used Second Life for teaching purposes and YJ, DE and ME added “just for fun.” If the students continued to have technology problems and it took a lot of time to resolve it in a class, the teachers would ask the students to fix the problems on their own so teachers could continue with the lesson. DE said, “I will generally give up after a few minutes helping them because there are other students waiting. I mean it is the same in real-life class” (Interview #1). The teachers needed to have technology skills to ensure their students could participate in the class activities.
However, the survey data show all the participants strongly agreed they had the necessary technology skills for functioning in Second Life (TK 7-17; see Figure 48). The questions asked about the participants’ skill in using technology in Second Life: whether the participants could use the camera controls, voice, personalize their avatars, and/or use chat messages features in Second Life.
Most of the time, the teachers felt the technology problems were from students’ lack of ability in utilizing tools in Second Life. ME mentioned, “You need to have patience and commitment if you want to teach in Second Life.” EE said, “You engage with many different people with different attitude.” He mentioned while he did not have to learn how to walk in Second Life, the students sometimes needed help with directions on how to walk, to sit or to talk in Second Life. In another class, a student had a problem seeing the picture displayed. The student told ES that the picture was blurry. ES asked the student to zoom in the picture by pressing the control, alt, and arrow buttons at the same time. It took time to do so, but the problem was solved (ES, Observation #5).

EE mentioned that if something happens (e.g., a student cannot hear), there is a very good chance it is the student’s technical problem (Interview #1). It could be the internet connection (PE, EE, ME, YJ, EG, Interview #1), it could be a user problem such as low computer memory (ME, PE, EE, Interview #1), or it could be the web browser (ME). If the students have cheaper computer graphics, their computers cannot handle Second Life, especially if they have to open several windows in addition to the Second Life program. The computers would crash, and they would have to log in again. PE mentioned that if the students have a better computer, they can work, speak and use their avatar better. The participants noted that the students needed to spend more money to buy better computer equipment. PE gave an example of one of her student’s situations:

Do you remember M? Her computer is not strong enough. Because SL is a gaming graphics, it requires a little bit of money to spend. A said he has an ordinary computer and he has no problem. This is okay if you know how to fix a computer. He is a computer technician. He knows how to do it. Other people has a mobile app these days, so he is not going to spend a lot of money just to get to SL. That is the first thing, you need to have an expensive computer.
While ME and YJ also believed expensive computer equipment would give the students a better learning experience and enjoyment in Second Life, they also contended that if the student just needed to sit and listen during the class time, without moving their avatar around like in a field trip activity, the students did not have to own an expensive computer. It depended on the class activity.

All the participants agreed that students not being able to access voice was the biggest challenge they faced teaching listening and speaking in Second Life. If students were not able to speak or listen in the classes, they could not participate in the activities to improve their listening and speaking skills. ME said most of the time the problem was with the voice; ES said sometimes she has no voice, and both DE and EG mentioned it was awfully disturbing and therefore sometimes Second Life was not a reliable platform due to the voice problems. YJ mentioned almost every time he experienced a voice problem with his students. In one of my class observations, YJ asked, “Can you hear me?” (Observation #1) to a new student who just arrived. The student then replied via a nearby chat that she could not hear him. In another class observation, PE told the student, “Your voice is breaking up. I cannot hear you well” (Observation #4); EE asked the student, “I cannot see a dot on your forehead. You need to be able to speak in this class” (Observation #4). A dot on the forehead indicated the student has voice. However, the voice problems could be resolved by logging out and logging in again a couple of times. EG mentioned, “Usually, if you just logged out and logged in again, your voice would come back” (Interview #2). All the participants agreed that would solve the problem.

Another technology challenge that all the participants experienced was using notecards. Notecards are a way to deliver detailed information that would not fit in a single Instant Message (IM). All the teachers used notecards to deliver their lesson materials to the students. However,
PE, ME and DE found the notecard was very traditional and the font was very small and hard to adjust. ME added that the notecard box was very small and it was hard to read. Moreover, if the students opened a few notecards, their whole screen would be covered with the notecards.

Although the teachers could solve most of the technological problems that happened in their classes, there were two issues they addressed as beyond their control. One of them was having a griefer (disruptive avatar) visit the class. According to ME, a griefer comes only to harass people. She claimed that many of her students left because they did not feel comfortable. DE mentioned,

The biggest problem, and it is the problem that the university found in SL. They are paranoid about security. In a real classroom, if a homeless person came and started screaming, you have security guard to escort him out. But in Cypris, there is one griefer, like a troll, who would come in with different avatars and disturb the class by insulting people or scripts to freeze everyone or to crash the server – that kind of thing. So, there are ways to kick the avatars out; we banned them from the sim, but unfortunately, they can come back with new avatars.

Although in Second Life there is no security to stop a disruptive avatar from joining a class unless the teacher blocks the avatar, these teachers said they had identified how to help their students avoid uncomfortable situations in Second Life (TPACK 45; Figure 49). PE and EG self-reported their score as 3; YJ as 4; and ES, ME, EE and DE as 5. DE mentioned, “I have to ask my students to move to a secured place that we have prepared in order to temporarily avoid the griefer” (Interview #1).
The teachers could block the griefers, but the griefers could disturb the entire class before they are blocked. However, once a griefer disturbs the class, the teachers have to close the entire sim and rebuild it before resuming the class. Another approach that EG used was to politely ask the griefers to leave her classroom activity because it was an educational space.

The final issue beyond the teachers’ control was that not every student could open a link if the teacher decided to use a website such as YouTube. ME mentioned that in some countries there are restrictions about opening certain website links. The teachers said this prevents those students from following the lesson. Therefore, the teachers had to make sure any website they used for the class could be easily opened by all students.

Summary/Overview

Three themes emerged from the six data collection sources: archived online chat transcripts for each observed class, one-on-one interviews with each language instructor, TPACK and demographic surveys, observation notes, and class documents from the instructors. These themes and their relationship to existing research are presented in Chapter 5.
CHAPTER 5
DISCUSSION

The purpose of this qualitative study was to identify how participating teachers demonstrated their Technological Pedagogical Content Knowledge (TPACK) in the context of teaching speaking and listening in Second Life. This study took place in several regions in Second Life, including Virtlantis, Cypris, and privately owned or rented spaces in Second Life. Seven language teachers participated in this research. They were English, Spanish, German and Japanese teachers who each had over five years of teaching experience in Second Life. Most of them were native or nearly native speakers in the language they taught. I interviewed the participants twice, conducted seven class observations for each participant, and collected learning materials and chat logs as well as their demographic and TPACK surveys. Those data were analyzed for this study. This chapter presents the discussion and future research possibilities to answer the research questions:

1. How do teachers demonstrate their technological pedagogical content knowledge (TPACK) in the context of teaching speaking in Second Life?

2. How do teachers demonstrate their technological pedagogical content knowledge (TPACK) in the context of teaching listening in Second Life?

I have organized the findings based on the primary theme connected to teaching listening and speaking in Second Life: the teachers demonstrated different aspects of TPACK in Second Life.
Furthermore, two supplementary themes were revealed: all teachers knew how to manage their classes in Second Life and all teachers faced challenges teaching in Second Life.

Discussion of Findings

This section discusses the findings on how the teachers demonstrated their Technological Pedagogical Content Knowledge (TPACK) in the context of teaching speaking and listening in Second Life based on the emerging themes in relation to the existing research. Each theme is described in detail in the following sections.

Teachers Demonstrated Different Aspects of TPACK in Second Life

Extensive research has been carried out, especially in language learning settings (Chen, 2016; Franciosi, Yagi, Tomoshige & Ye, 2016; Hsiao, Kao, Tsai, Lin & Lan, 2016; Lan, Kan, Sung & Chang, 2016). These studies were conducted in courses using a formal academic class structure in virtual environments. For example, Franciosi et al. (2016) investigated how gameplay can improve students’ vocabularies in Second Life environments as part of an academic institution’s online program. However, there is limited research on teaching listening and speaking in non-academic, open, and informal settings in Second Life like the ones explored in the current study.

The current study revealed the teachers showed their Content Knowledge (CK) in lesson preparation. They spent a lot of time selecting and preparing the lessons; however, the teachers did not have an emotional connection with the students or feel any responsibility to respond to students’ questions after the class ended. While the students still had access to their learning materials from their notecards anytime they wanted because they were saved automatically (ES,
Interview #1), the students did not have any way to communicate with the teachers outside of the class time if they had any questions or wanted to learn more about the topic. Zheng, Wisnieweski, Rosson and Carroll (2016) investigated the instructors’ perspectives of academic Massive Open Online Courses (MOOCs) and found that the instructors emphasized how challenging it was to prepare for and organize appropriate online content, which included developing learning materials, recording lectures and modifying lecture notes before the class started. In addition, the teachers’ contact with students still continued after the class ended because the teachers had to collect and organize feedback received from students during the class to be used as a reflection to better organize the future courses.

Additionally, the teachers in the current study displayed their CK in selecting audio materials to improve their students’ listening skills. ME and DE who used podcasts as their learning sources said they had difficulties selecting the appropriate audio for their students (Interview #1). DE claimed that it was easy to find the authentic materials; however, it was difficult to pair them to the students’ proficiency levels (Interview #1). ME and PE mentioned that sometimes they had to create subtitles for their students so they could follow the materials better (Interview #1). This finding supports Hansen and Jensen’s (1994) research in that students from all proficiency levels should be exposed to natural speech as a regular part of their listening practice. Breen (1985) claimed that “immediate and direct contact with input data reflects genuine communication in the target language” (p. 63). In the current study, input data were in the form of audio from podcasts spoken by native speakers.

Finally, teachers in the current research also showed their CK skills in recycling their learning materials. Due to the time and challenge required to find suitable learning materials, teachers sometimes re-used the learning materials. In the current study, I found EE, ME, EG and
DE re-used their learning materials from the notecards they had created (Interview #1). They claimed that re-using the notecards was acceptable because most of the time they had different students attending the class. Moreover, DE created a database in which he could see which teaching materials he had used for particular students (Interview #1). YJ and EG were re-using their textbooks (Interview #1). PE was the only teacher who always created new teaching materials because her topic changed weekly based on what was available in the news clips. She claimed news was always new and she had to give updated information. She did not mind doing that because she enjoyed reading, even though she mentioned she had to dedicate from one to three hours creating one lesson plan (Interview #2).

Similarly, Beaven (2013) found several ways in which the language teachers re-used learning materials by making several changes to the existing teaching materials to make them more attractive, adding key language expressions or structure to provide additional support to the students. Sometimes they did not make any physical changes to it but turned them into pedagogical activities such as practicing grammar as a vocabulary exercise. Hartley, Ludlow and Duff (2015) research on creating and implementing learning activities in Second Life discovered that teachers took some time to create materials, organized them into folders and uploaded them in advance; however, the teachers found those tasks became easier and more efficient with practice.

In the current study, I found that the teachers showed their Technological Content Knowledge (TCK) by creating the class environment with their scripting skills. PE, YJ, DE, and ME were able to script suitable class environments to facilitate the lesson. Not every teacher had those scripting skills; however, I found that scripting skills gave some teachers an advantage. DE mentioned that he was able to create items or change his class environment in a short time,
whereas teachers had to spend money to create their class environment (Interview #1). YJ created a Japanese character platform for his students to practice their pronunciations skills (Observation #2). The students touched one character on the platform and had to say that Japanese character. The possession of this scripting skill allowed the teachers to create an effective learning environment that increased the students’ ability to speak and listen.

Savin-Baden et al. (2010) also noted that the ability to modify and manipulate the environment allows teachers to create a variety of scenarios and activities suited to students’ needs. The teachers treated their classes in Second Life like real-world classrooms. Cheryan et al. (2009) found that virtual classrooms may also influence students’ interest and anticipated success by virtue of their design. In the current study, I found that most of the teachers were following this principle. For example, EG asked her students to change their avatars’ outfits to 1970’s styles when they were discussing the 1970s in Germany (Observation #5), whereas DE changed the classroom’s chairs with his scripting skills into a bench when they were discussing the evolution of chairs in one of his classes (Observation #4).

In every class, the teachers provided chairs or seating spaces for students. One teacher provided chairs in a park setting, others provided chairs in a conference room setting, and one teacher asked the students to sit on the floor. The teachers also placed some tables, a sofa, or some pictures in their classroom. Based on how she structured the class, PE demonstrated her TCK skills by providing opportunities for students to feel comfortable practicing their listening and speaking skills and hopefully choosing to return for future classes. This practice parallels research that shows furniture arrangement in the classroom affected how comfortable the students felt as well as the amount of interaction with other students and with the teacher (Burgess & Kaya, 2007; Martin, 2002).
The teachers in the current study showed their Pedagogical Knowledge (PK) skills by specifically looking for appropriate materials that included authentic teaching materials. For example, in the news clips classes, PE spent time reading and selecting recent text from the internet as the course content (Interview #1). Similarly, Akbari and Razavi (2016), in their research on the use of authentic language teaching materials, found teachers did not mind spending a lot of time selecting authentic materials for their reading and listening classes because they wanted to improve their students’ skills by exposing them to the real English. ME, DE, PE, EE, and EG mentioned they have to spend most of their time finding authentic texts appropriate for their students (Interviews #1). PE (Interview #1) and EE (Interview #2) added sometimes they had to modify the reading materials based on the students’ proficiency level.

Previous research shows that using authentic materials not only increases the students’ comprehension skills but also improves their oral language performance (Akbari & Razavi, 2016; Allehyani, Burnapp & Wilson, 2017; Bajrami & Ismaili, 2016). Ahmed (2017) found that using authentic materials has a strong influence on developing the students’ reading comprehension as well as their understanding and, at the end, their oral skills when they are discussing what they have read before. In addition, Miller (2005) and Thanajaro (2000) found that the use of authentic materials leads to aural development, paralleling the current study that found the authentic materials (e.g., news clips, dialogues and podcasts) used by the teachers improved not only the students’ speaking skills but also their listening skills.

Other findings related to PK occurred when EG, DE and PE took their students to other regions in Second Life, such as a diner, house and car dealer to replicate real-world experiences for using context-appropriate language (EG, Observation #2; DE, Observation #5; PE, Observation #6). These experiences prepared the students to understand and engage with new
vocabularies in an authentic way, which ultimately motivated them to speak more. Similarly, McGrath et al. (2018) created a Second Life medical clinic where students could conduct medical interviews for assessing communication with patients, formulation of differential diagnosis and clinical decision making. The students experienced nonprocedural clinical skills for clinical decision making and empathy.

Savin-Baden et al. (2010) and Sweeney et al. (2016) found the students in the virtual classes experienced graphics where they could perform real-life-like activities. Many researchers focused on the students’ ability to customize their avatars. They contended that the avatar helped enhance the users’ experiences in Second Life (see also Cooke-Plagwitz, 2008; Johnson & Levine, 2008; Peterson, 2016; Warburton, 2009), allowing learners to decide their own identities. These researchers focused on how avatars might help the learning process; however, only a few focused on the Second Life environment as one of the affordances to help improve the speaking and listening process.

All Teachers Knew How to Manage Their Classes in Second Life

In the current study, I found that the teachers held dual roles as the teacher as well as the manager of his/her own class. This was because the focus of this study was language learning in a virtual informal setting. As a manager, every teacher had to either post the class schedule on their class sites or on the Facebook page every week to remind their students or to promote the lessons for the new students who might be interested in learning the language. The multiple classroom observations, interviews, demographic and TPACK surveys show that all teachers knew how to manage their classes in Second Life, which falls into the Pedagogical Knowledge (PK) aspect. Managing the class, announcing or promoting the class schedule, helping students
as well as designing the class environment and/or deciding where to meet were some of these teachers’ roles.

Farmer and Ramsdale (2016) also identified the main roles of the online teachers as include the use of a variety of assessment methods, checking link viability, providing supports and feedback as well as creating learning materials for their students. Even though the teachers in the current study on average did not self-report a high score in their managerial skills on their TPACK surveys, they showed dedication to managing their classes’ schedules, which is a PK skill. This was particularly true for YJ, PE, EG and ME. Based on the background survey, YJ, EG and ME were researchers with no teaching experience in real life; they just taught in Second Life. In contrast, PE, who was a teacher in real life and had taught for more than five years in Second Life, also self-reported a low score (3) on her managerial skills. However, through the interviews and class observations, I found that all the teachers were committed and easily included the managerial work as part of their duties without acknowledging their ability. They all regularly posted the class reminder before the class started, prepared lessons, informally monitored the students’ progress through review activities, and helped students resolve technological challenges.

All Teachers Faced Challenges Teaching in Second Life

Through the observations in the current research, I found all the teachers experienced several technical problems with the audio and notecards and mentioned the potential challenges posed by griefers, which all fall into the Technological Knowledge (TK) category. In each class observation, I found at least one student could not hear the teacher’s voice. In this situation, the teachers usually asked the students to log off and log in again to resolve the problem. Sometimes
the students could not hear the teacher; therefore, the teacher had to do the same. Another technical issue the teachers mentioned was related to the notecards. PE, DE, ME, EG, and ES mentioned the notecard size was too small (Interview #1). However, if the students opened several notecards, their computer screens were covered with the notecards. PE (Interview #1) and DE (Interview #2) mentioned Second Life should have better technology to improve the notecards.

While Dickey (2011) stated virtual worlds have many affordances, such as creating new learning places, immersion, interaction and virtual representation, he argued that those affordances can be seen as opportunities only as long as they can be used without problems. Many studies have investigated the problems in using Second Life for educational settings. For example, Akayoglu and Seferoglu (2017), Chen (2016), Morrison (2017), and Wagner and Ip (2019) identified some technical problems such as audio breakup, overlapping of voices, slow interactions and the users experiencing difficulties sitting, walking or turning on their audio, all of which I also observed in the current study.

Implications for Practice

The findings from this research have provided important implications for online educators, instructional designers, and Second Life developers. For online educators, it is important to establish, share and post protocols for students to participate in the class. Instructions such as “to attend this class, the students need to be able to use microphone and notecard functions” can be a guideline for students before attending the class. In addition, being able to more quickly resolve students’ technical problems will encourage consistent attendance with fewer class distractions. Most importantly, online educators should have a teaching
background to provide a pedagogical foundation for their lessons as well as confidence in their ability to facilitate the learning environment.

In the current study, the teachers self-reported low scores on their managerial skills. However, based on my observations, the teachers were able to manage their classes well. Therefore, instructional designers should work with the online educators as the subject-matter expert to improve their confidence in managing and teaching in informal language classes.

I found that voice problems and the use of notecards were the main issues addressed by the teachers. Therefore, I recommend Second Life developers should improve the audio functions and allow users to be able to adjust the notecards’ font size and appearance to lay out the learning materials better. In addition, the Second Life developers should work together with online educators and instructional designers to address and resolve technical problems in Second Life.

Limitations

This study, like all other research, had several limitations. This study was conducted only in informal virtual language class settings in Second Life that were not affiliated with any academically accredited institution. The findings, therefore, are not representative of what may occur in classes affiliated with academic institutions. The participants in this study had decided to independently offer the language classes for free to anyone who chose to attend, which meant that the teachers were not required to have a formal teaching background. The seven participants taught only listening and speaking skills in English, German, Spanish and Japanese, so these classes do not represent all language learning opportunities in Second Life.
Recommendations for Future Research

Because the current research included four languages, it was not possible to focus on the language learning practices in any one of the languages. Therefore, future research should focus on multiple teachers teaching the same languages for a longer period of time. This would allow the researcher to compare their TPACK skills in teaching listening and speaking. This research has several potential directions: examination of native versus non-native speakers as the teachers as well as the influence of a credentialed teaching background.


1. What are the pros and cons to teaching speaking and listening in Virtlantis?

2. What skills do language teachers need to know to teach speaking and listening in Virtlantis?

3. What should language teachers be able to do before they can teach speaking and listening in Virtlantis?

4. What is your overall opinion about the technology support in Virtlantis? What did you like the most? What did you like the least?

5. Do you think the materials and activities helped you get prepared to teach speaking and listening using Virtlantis? How helpful were the instructions? What do you wish you had access to?

6. What is your motivation teaching speaking and listening in Virtlantis?

7. What are the teaching tools that you have used in Virtlantis? What did you like the most? What did you like the least?
APPENDIX B

BACKGROUND QUESTIONNAIRE
Thank you for taking time to complete this questionnaire. Please answer each question to the best of your knowledge. Your thoughtfulness and candid responses will be greatly appreciated. Your individual name or identification number will not at any time be associated with your responses. Your responses will be kept completely confidential and will not influence your course grade.

DEMOGRAPHIC INFORMATION

1. Name:

2. Gender
   a. Female
   b. Male

3. Age range
   c. 18-22
   d. 23-26
   e. 27-32
   f. 32+

4. Native language:

5. Occupation (e.g., teacher, administrator, etc.):

6. Year of experience:

7. Language(s) you teach:

8. Levels you have taught (select all that apply)
   g. Beginner
   h. Intermediate
   i. Advanced

9. Age groups you have taught (select all that apply)
   j. Children
   k. Teenagers
   l. Adults

10. Responsibilities you have in Virtlantis (select all that apply)
    m. Plan classes
    n. Design materials
    o. Design tests
    p. Select textbooks
    q. Others
11. Materials you use in your classes in Virtlantis (select all that apply)
   r. Textbooks
   s. Flashcards
   t. Online media such as YouTube
   u. Others:

12. Technology use
   v. I never use technology in my language classes.
   w. I rarely use technology in my language classes.
   x. I sometimes use technology in my language classes.
   y. I often use technology in my language classes.
   z. I always use technology in my language classes.

13. Activities you do with technology
   aa. Internet search
   bb. Online exercises
   cc. Computer software
   dd. Blogs
   ee. Wikis
   ff. Podcasts
   gg. Online games (e.g., vocabulary and grammars games designed for ESL students)
   hh. Other:

14. Use of virtual worlds
   ii. I never use virtual worlds.
   jj. I rarely use virtual worlds.
   kk. I sometimes use virtual worlds.
   ll. I often use virtual worlds.
   mm. I always use virtual worlds.

15. Reason(s) to teach in Virtlantis (select all that apply)
   a. To meet new people
   b. Just for fun
   c. To teach
   d. Other:

16. Use of computer games
   e. I don’t play computer games (e.g., Battlefield, World of Warcraft, Bioshock)
   f. I sometimes play computer games.
   g. I frequently play computer games.
APPENDIX C

TPACK SURVEY
(Adapted from Schmidt et al., 2009)
Created and delivered through SurveyMonkey before the course began
Technology is a broad concept that can mean a lot of different things. For the purpose of this questionnaire, technology is referring to digital technology/technologies. That is, the digital tools we use such as computers, laptops, iPods, handhelds, interactive whiteboards, software programs, etc. Please answer all of the questions and if you are uncertain of or neutral about your response you may always select “Neither Agree or Disagree”.

**Technology Knowledge (TK)**
SD = Strongly Disagree, SA = Strongly Agree

Items marked with an * were added or modified

**Content Knowledge (CK)**

<table>
<thead>
<tr>
<th>Item</th>
<th>SD</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I know how to solve my own technical problems.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. I can learn technology easily.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. I keep up with important new technologies.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. I frequently play around with technology.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. I know about a lot of different technologies.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. I have the technical skills I need to use technology.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. I can move my avatar, fly and teleport to different places in Virtlantis.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. I can use the camera controls in Virtlantis.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. I can take and send snapshots in Virtlantis.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. I can search for objects, people, and places using the search function and the map in Virtlantis.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. I can create and give landmarks in Virtlantis.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. I can use the chat message feature in Virtlantis.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. I can use the voice chat in Virtlantis.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. I know how to personalize my avatar in Virtlantis.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. I can communicate with other people (text and voice chatting) in Virtlantis.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. I know how to create new objects in Virtlantis.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. I know how to create groups in Virtlantis.*</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
</tbody>
</table>
SD = Strongly Disagree, SA = Strongly Agree

**Pedagogical Knowledge (PK)**

SD = Strongly Disagree, SA = Strongly Agree

<table>
<thead>
<tr>
<th>Ability to use the target language</th>
<th>SD</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. I can listen the target language fluently.*</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>19. I can speak the target language fluently.*</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>20. I can use the target language appropriately in different contexts.*</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>21. I am proficient in the target language.*</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

Knowledge about the target language

<table>
<thead>
<tr>
<th>Knowledge about the target language</th>
<th>SD</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>22. I understand the target language culture.*</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>23. I understand the target language linguistic system.*</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>24. I understand how people learn languages.*</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>25. I have various ways and strategies of developing my understanding of the target language.*</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

**Pedagogical Content Knowledge (PCK)**

SD = Strongly Disagree, SA = Strongly Agree

<table>
<thead>
<tr>
<th>SD</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>26. I know how to assess student performance in a classroom.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>27. I can adapt my teaching based upon what students currently understand or do not understand.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>28. I can adapt my teaching styles to different learners.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>29. I can assess student learning in multiple ways.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>30. I can use a wide range of teaching approaches in classroom setting.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>31. I am familiar with common student understanding and misconceptions.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>32. I know how to organize and maintain classroom management.</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
### Technological Content Knowledge (TCK)

SD = Strongly Disagree, SA = Strongly Agree

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</thead>
<tbody>
<tr>
<td>33. I can select effective teaching approaches to guide student thinking and learning in the target language.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>34. I can choose appropriate activities to help my students practice target language concepts, especially listening and speaking.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>35. I know how language concepts can be explained to help learners learn the target language.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
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</tbody>
</table>

<p>| | | | | |</p>
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</thead>
<tbody>
<tr>
<td>36. I know about technologies that I can use for understanding and teaching the target language.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>37. I understand how the target language concepts can be expressed through the use of technology.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>38. I know how the target language concepts can be expressed through the use of Virtlantis.*</td>
<td>1</td>
<td>2</td>
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<td>4</td>
</tr>
</tbody>
</table>

### Technological Pedagogical Knowledge (TPK)

SD = Strongly Disagree, SA = Strongly Agree

<p>| | | | | |</p>
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<th></th>
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</thead>
<tbody>
<tr>
<td>39. I can choose technologies that enhance the teaching approaches of a lesson.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>40. I can choose technologies that enhance students’ learning for a lesson.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>41. I can think critically about how to use technology in my classroom.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>42. I can adapt the use of technologies to different teaching activities.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>43. I know how to use Virtlantis as a media of teaching.*</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
### Technological Pedagogical Content Knowledge (TPACK)

SD = Strongly Disagree, SA = Strongly Agree

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>SD</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>44. I can identify appropriate tools to help my students learn in Virtlantis.*</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>45. I know how to help my students avoid uncomfortable situations in Virtlantis.*</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>46. I can select appropriate spaces to meet with students in Virtlantis.*</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>47. I can decorate my classroom in Virtlantis.*</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>48. I know how to assess student performance in Virtlantis.*</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>49. I can teach lessons that appropriately combine the target language, technologies, and teaching approaches.*</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>50. I can select technologies to use in my classroom that enhance what I teach, how I teach, and what students learn. *</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>51. I can use strategies that combine content, technology, and teaching approaches.*</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>52. I can choose technologies that enhance the content for a lesson.*</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>53. I understand how Virtlantis affordances and limitations can influence my students’ learning of the target language.*</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>54. I know how to use Virtlantis tools to provide students with different opportunities to learn and practice the target language.*</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>55. I can assess my students’ learning of the target language in Virtlantis.*</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
</tr>
</tbody>
</table>
APPENDIX D

TPACK PERMISSION EMAIL
Re: TPACK permission

From: "Crawford, Denise A [SOE]" <dschmidt@iastate.edu>
To: rhartati1@niu.edu
Date: Wednesday – April 2, 2014 7:02 AM
Subject: Re: TPACK permission
Attachments: TEXT.htm; Mime.822

Rahmi,
Thanks for your interest in using our TPACK survey for your research. You have our permission to use it for your study. Good luck!

Best,
Denise

Denise A. Schmidt-Crawford
Director & Associate Professor
Center for Technology in Learning and Teaching
Associate Director of Teacher Education
School of Education
Iowa State University
N038 Lagomarcino Hall
Ames, IA 50011
dschmidt@iastate.edu
515.294.9141

From: Rahmi Hartati <rhartati1@niu.edu>
Date: Tuesday, April 1, 2014 10:12 PM
To: Denise Schmidt <dschmidt@mail.iastate.edu>
Subject: TPACK permission

Dear Dr. Denise Schmidt,

I am a doctoral student at Northern Illinois University in DeKalb, IL. I would like to use TPACK survey for my following research:

Title: Strategies in developing technological pedagogical content knowledge (TPACK) in Virtulantis in improving speaking and listening skills for English as a Foreign Language (EFL) students.

Research questions:

1. How do teachers develop their technological pedagogical content knowledge (TPACK) in the context of teaching speaking in Virtulantis?

2. How do teachers develop their technological pedagogical content knowledge (TPACK) in the context of teaching listening in Virtulantis?

The population will be seven EFL teachers in Virtulantis.

Please let me know if I can use TPACK for my research. Thank you.

Best,
APPENDIX E

SAMPLES OF ASSIGNMENTS, HOMEWORK AND WORKSHEETS
Sample of Assignment

- we discuss and seek clarification to collaborate, not argue
- we learn and grow when we have different points of view
- we and question with good intentions
- we may not come to any conclusion

Each week, we will choose current news clips from around the world. The activity will run something like this:

1) We will read the news clips together

2) Discuss the news clip

Sounds easy? Yes it is!

Only one rule: Respect each other and any differences of opinion.

When?: Sunday, 4:00 am Second Life Time (US Pacific Time)
Where?: Keep an eye out for notices!

or

IM Shiaida Palianta

===================================
timer:start:

TODAY'S CHALLENGE:

DEBATE:

You will be assigned to a team:
Team 1 (2-4 members): Against the motion
Team 2 (2-4 members): For the Motion

FOLLOW A DEBATE FORMAT:
Each team will be allowed:

Introductory remark: 2 minutes each speaker
Rebuttal: 2 minutes each speaker
Open discussion: 10 minutes
Conclusion: 1 minute each speaker
WARM UP
We will look at some pictures and then talk about them to get a taste of the topics.


READING 1

1) I'M THE ONLY AUSTRALIAN LIVING IN NORTH KOREA. LET ME TELL YOU ABOUT IT

North Korea is a country in transition, moving from isolation to fast food, smartphones and plastic surgery

Alek Sigley

Sun 31 Mar 2019

Many people would balk at the idea of a westerner setting foot in North Korea, which is known internationally for its nuclear weapons, human rights record and its highly regimented, militaristic society.

2) They might be somewhat shocked to hear then, that one young Australian – that’s me – would give up two years of his 20s to study at Kim Il-sung University, North Korea’s top university, in the country’s capital, Pyongyang.

And perhaps they’ll be curious to hear what life in Pyongyang is like as one of only a handful of long-term western residents, one of only three western students, and the only Australian in the entire country.

3) I am well aware that my experiences are very much those of a foreigner. But I do think I’ve gleaned some invaluable insights into how Pyongyang residents live, work and play.

I had been interested in socialism ever since studying the Russian Revolution at high school, while my sinologist father, Chinese mother and childhood love of Japanese anime had sparked a passion for Chinese and Japanese.

4) I went on to study in China and lived on the same dormitory floor as the North Korean contingent. I became intrigued by their lapel pins depicting their national leaders and the North Korean flag stickers on their doors (no other students did this).

The interactions I had with these students really piqued my curiosity – they were completely at odds with the stereotypical view of a “brainwashed” people.
5) I soon began learning all I could about everyday life in the country, from its architecture and fashion to how its people viewed the world.

Eventually, I managed to arrange a trip to Pyongyang.

I became particularly close to two Koreans who worked for a local tour company, and in partnership with them founded my own tour operator specialising in educational tourism to North Korea, Tongil Tours, through which I began to make regular trips to the country leading groups of western tourists.

6) After finishing my degree in Asian studies, I decided to take my interest in North Korea to postgraduate level. Pyongyang seemed a natural option, and with my North Korean friends’ help, I began my master’s in contemporary North Korean literature in April 2018.

As a long-term foreign resident on a student visa, I have nearly unprecedented access to Pyongyang.

7) I’m free to wander around the city, without anyone accompanying me. Interaction with locals can be limited at times, but I can shop and dine almost anywhere I want.

North Korea today is in transition. Despite heavy sanctions, Pyongyang has a small but growing consumer class, due in part to government policies to liberalise sections of the economy.

8) Dining out is an important manifestation of this new spending power. Among restaurants I have visited along with other foreign students is a trendy conveyor belt hot pot restaurant, where diners can choose from more than 50 ingredients – from shiitake mushrooms to macaroni – for their broth.

9) This restaurant is always packed at weekend lunchtimes, with the clientele sporting fashions that wouldn’t look out of place in Shanghai or Seoul. We’ve even spotted young people who’ve clearly had plastic surgery.

Naturally, Pyongyang has a wide variety of excellent Korean food on offer, from bulgogi to bibimpap. But we’ve also found conveyor belt sushi and some pretty authentic Chinese restaurants.

10) There’s a fast food joint whose waitresses told me their food was “just like KFC”, and another that serves hamburgers and French fries. The burger was pretty close to McDonald’s, only with raw and not pickled cucumber slices.

When it comes to shopping, imported goods include everything from Haribo gummy bears and New Zealand beef to Adidas sportswear and Dove bodywash.
11) Locally manufactured products are improving in quality – a few years ago all the paper was grey and coarse, but now the shops are full of notebooks with bleached white paper (although the rockets and Pyongyang monuments on the covers still mark them out as North Korean).

The government has been encouraging greater use of technology, and while locals are still unable to access the internet, their own internal network is becoming more developed.

12) The Pyongyang Metro is always full of “phone zombies” staring intently at games, movies or the news. Pretty much the only person I’ve met who doesn’t have a smartphone is my 73-year-old literary theory teacher, who has stuck with her 2000s Nokia-style device. But perhaps the most insightful experiences I’ve had have been talking with various locals.

13) A taxi driver, for example, told me he knew Australia was a popular tourist destination. He knew we had backed the “US imperialists” in the Korean war, which his grandfather had fought in, but said he hoped I would be the first of many foreigners to live in his home town.

In the dormitory, I shared a room for four months with a local student majoring in English.

14) In most ways, he wasn’t too different from a typical bloke in his early 20s. An avid football fan, he loved Neymar and Messi, whom he followed alongside the April 25 Sports Club, a local Pyongyang team.

15) He enjoyed the odd drink (and a more regular cigarette). He had a particularly keen interest in international politics, and dreamed of one day “working in the foreign ministry of a unified Korea”.

But unlike your typical student, my roommate’s proudest moment from his uni days was when he represented the university in a military parade watched by Kim Jong-un.

16) He told me of the gruelling training needed to get his goose-stepping up to standard, but also of the bonds he forged with his fellow marchers and the sense of pride and achievement he felt afterwards. He always kept a photo from that day on his desk.

He once asked me whether Australia was a one-party state. I was taken aback, but did my best to explain our multi-party system.

17) He was particularly interested to hear that we have a communist party, but seemed slightly disappointed when I told him how small it is.

Now that he’s moved out of the dorm I’m unable to contact him again – foreigners’ phone numbers are on a separate network and meeting locals without an express reason is generally frowned upon.

18) Saying goodbye was emotional.
But if it’s any consolation, the fact that an Australian and a North Korean could happily share a room for four months does show that there’s a better way. We can get along.

TAKEN FROM:

19) LOW FLYING CLEAVAGE:

MUM BOOTED OFF EASYJET FLIGHT FOR SHOWING TOO MUCH CLEAVAGE BY ‘SEXIST’ STEWARDESS

Rob Pattinson
• Chloe Kerr
• 28 Jun 2019, 21:30

A WOMAN was booted off an easyJet flight — because her outfit was too low-cut.

Stunned mum-of-two Harriet Osborne, 31, was told her partially see-through top was unsuitable as children were on board.

20) The make-up artist, who was not wearing a bra but had nipple covers and tape, covered up with a mate’s jumper but was not allowed back on.

Harriet had to sleep on the floor at Malaga airport with her friend before they flew home the next day. She blasted: “The crew were horrible and made me feel cheap.

21) This air hostess confronted me in front of the whole plane and said I wasn’t allowed on in that top.

“She said to me, ‘Oh no, move to the side,’ and tried to cover me up with my hands.

“She said, ‘You’re not coming on my plane like that — you need to put a top on’.

22) “Then she ordered me off the plane, so of course I put a top on. When I tried to get back on she turned to the ground crew and said, ‘She’s not coming on my plane’.

“I was escorted away from the aircraft. I was in shock. It was so sexist.

“I just burst out crying. We had to walk back through the terminal where Spanish police stopped to question us."

23) “They were baffled when I told them why we’d been kicked off.”
Harriet, who spent the weekend at a relative’s house, paid £149 for another flight.

Harriet, of Southwold, Suffolk, said: “I never show my body off at home but I felt spontaneous as I was on holiday. It made me feel so self-conscious.”

24) A source said some passengers complained to crew that they could see Harriet’s nipples.

EasyJet said: “Crew politely requested the customer wear an additional top which she agreed to.

“However she then proceeded to act disruptively towards a member of crew.”

TAKEN FROM:

11) Informal Debate Phrases

WHEN YOU ARE LISTENING TO THE OTHER SIDE..

o I see your point, but I think...

o Yes, I understand, but my opinion is that...

o That’s all very interesting, but the problem is that...

o I’m afraid I can’t quite agree with your point.-

o I think I’ve got your point, now let me respond to it.-

o We can see what you’re saying. Here’s my reply…

12) WHEN YOU NEED TO SAY SOMETHING NOW.

o I’m sorry to interrupt, but you’ve misunderstood our point.-

o Excuse me, but that’s not quite correct.-

o Sorry, I just have to disagree with your point.-

o Let me just respond to that, please.-
Forgive me for interrupting, but I must respond to that.

Hold on a moment, that’s not correct.

If you would allow me to add a comment here…

If you don’t mind, I’d like to take issue with what you just said.

WHEN YOU HAVEN’T REPLIED YET.

The other side will have to explain why…. otherwise we win that point.

We said that…but the other side has not replied to our point.

I’d like to focus on two points that the other side has failed to address.

There are two points that we have succeeded in establishing…

I want to call your attention to an important point that our opponents have not addressed yet.

I’d like to point out that there are two issues our opponents have failed to dispute, namely…

I must stress again that our point has not been refuted by the other side.

WHEN YOU GIVE YOUR REBUTTAL.

The first point I would like to raise is this…

Our position is the following…

Here’s the main point I want to raise…

I’d like to deal with two points here. The first is…

Our opponents have still not addressed the question we raised a moment ago…

The other side has failed to answer our point about…

Notice that the affirmative side has not addressed our main point.

Let me just restate my position.

Just to be clear, here is what I mean…
WHEN YOU GIVE CONCLUDING STATEMENTS.

- To sum up, here are the main points our opponents have not addressed…
- We pointed out that…
- Our opponents have claimed that…
- To recap the main points…
- Let’s sum up where we stand in this debate.

17)

- Let me summarize our position in this debate.
- In summary, we want to point out that…
- Let’s see which arguments are still standing.

- Let’s take stock of where we are in this debate.

TAKEN FROM:

TODAY’S CHALLENGE:

DEBATE:

You will be assigned to a team:
Team 1 (2-4 members): Against the motion
Team 2 (2-4 members): For the Motion

FOLLOW A DEBATE FORMAT:
Each team will be allowed:

Introductory remark: 2 minutes each speaker
Rebuttal: 2 minutes each speaker
Open discussion: 10 minutes
Conclusion: 1 minute each speaker
SOMETHING EXTRA:

Hard vocabulary!
https://quizlet.com/jeffxiao1

Learn the International Phonetic Alphabet (IPA):
http://www.yorku.ca/earmstro/ipa/

Translate text to IPA:
http://lingorado.com/ipa/

==========================================
End

Cost: *All activities at VIRTLANTIS are FREE. If you wish to give the activity organizer a tip or donation, please pay him or her directly.

Questions? No problem!
Send an IM to the avatars below.

Activity Organizer: Shiaida Palianta

=====> VIRTLANTIS INFO
https://www.facebook.com/groups/VIRTLANTIS/
BUSINESS ENGLISH VOCABULARY

* Read each sentence 3 times, using all the answers.

**Choose the best answer.

1. Let's ___ on Thursday.
   a) do lunch
   b) lunch
   c) eat lunch

2. Generally speaking, a good manager ___ a smooth production process.
   a) ensures
   b) makes sure
   c) is sure

3. Good time management skills are ___ to maintaining a smooth workflow.
   a) critique
   b) criticized
c) critical

4. I was ___ with my other tasks to finish the report.
a) very busy
b) too busy
c) excessively busy

5. I'd like to have that by ___ Friday.
a) end of the day
b) ending
c) end of day/the end of

6. I'm happy to inform you that we've reached another ___ with the successful completion of user testing.
a) milestone
b) mile
c) marker

7. After you visualize and plan a project, you have to ___ it.
a) implement
b) imply
c) implode

8. In the modern business world, "assigning multiple resources to a single activity" means:
a) spending lots of money to do a task
b) getting one person to do a task
c) getting two or more people to do a task

9. We need someone who knows how to use offline advertising to ___ online sales.
a) gain
b) drive
c) get

10. These issues could ____ the completion of this project.
a) jeopardize
b) jeopardy
c) danger