Evaluation of activity designs in the virtual platform of Second Life for the development of international students' intercultural communicative competence

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Abstract

Research into the rapidly growing number of students involved in study abroad has repeatedly shown the importance of intercultural communicative competence (ICC) to enable these students to manage encounters in different cultures. Virtual world platforms such as Second Life that expose individuals to different virtual cultures and interaction rules have been used in blended learning contexts by many intercultural scholars to provide experiential learning opportunities to develop students' ICC. There is evidence of their effectiveness in facilitating ICC development by immersing students in experiential activities such as teleporting to different cultural places, and interacting with unknown others. However, there are yet to be studies based on the construction of complex designs for ICC development in self-study contexts. This small study evaluates ICC tools and resources designed for self-study in a totally immersive ICC Education Campus and built using the Second Life platform, and reflects on the outcomes, demands and challenges. While there were limitations in the design because of technological challenges, feedback from the nine participants shows the effectiveness of the ICC tools and resources developed in this small study in preparing students for international exchanges or study abroad, as well as providing in-country support.

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person, except where explicitly defined in the references and acknowledgements, nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Mingjing Ma
12th July 2019

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Chapter One: Introduction

The number of students going on international exchanges and "study abroad" (SA) programmes has increased dramatically over the past few decades. Statistics show there were five million participants in 2014, and numbers are expected to reach eight million by 2025 (West, 2019). Research shows that the successful outcomes for students depends on how well they adjust to new cultural environments, and that their intercultural competence, known as intercultural communicative competence (ICC) in the language teaching field, is a significant factor in maximising experiences and managing negative aspects such as culture shock (Corder, Harvey, Roskvist, & Stacey, 2018; Corder & U-Mackey, 2015; Vande Berg, 2009). Two key issues, however, are how to facilitate the development of ICC before students depart on SA, and how to support further development during a sojourn. Research indicates the potential of 3D technology such as virtual worlds to facilitate and support the development of ICC (Corder & U-Mackey, 2015).

ICC involves the ability to interact appropriately and effectively with people who have different cognitive and behavioural orientations (Spitzberg & Changnon, 2009). The development of ICC takes time and is very individual (Corder & U-Mackey, 2015). Providing learners with experiential learning opportunities is a strongly recommended approach to facilitate the development of ICC, and research shows that virtual worlds such as Second Life (SL) can provide a wide range of intercultural experiences not possible in the classroom (Corder & U-Mackey, 2015; Shuter, 2012).

This exegesis evaluates the activities and educational resources created for self-study by the researcher, using the SL virtual platform, in an intercultural learning place called ICC Education Campus. As a practice-based research project, the focus was on the creation of educational resources for international students to develop their ICC. While the majority of the participants in the research were international students studying in New Zealand, the ICC educational resources were designed to develop generic transferable competences for encounters with difference and the unfamiliar in any cultural context, and therefore were not designed specifically for studying in New Zealand. The results and reflections on the demands and challenges of this process are presented in this exegesis, which seeks to answer following questions:

1. What type of educational resource can be created in the virtual world platform SL that facilitates international students' learning of ICC?
2. How will users respond to this resource and to what degree can it facilitate the development of ICC?
3. What demands and challenges does the design of this resource present?

This exegesis has seven chapters. The following chapter, Chapter Two, is a literature review of related research on the development of ICC and the affordances of virtual world platforms, with a focus on SL. Chapter Three discusses the theoretical frameworks applied in this research, the tools used to collect data, and the data analysis process employed in order to seek answers to the research questions. Chapter Four provides the design details of the ICC Education Campus. Chapter Five presents findings from the questionnaire and interviews. Chapter

Six is a reflection on the issues and problems involved in designing the educational resources in the ICC Education Campus on the SL platform. The final chapter, Chapter Seven, concludes with the issues that arose from the study and suggestions for creating similar education resources.

Chapter Two: Literature Review

Globalisation has had a significant influence on students' mobility and has led to increases in the number of international students on SA programmes (Shields, 2013). Statistical data indicates that, between 2000 and 2016, the annual numbers of international students increased from 2 million to over 4.8 million worldwide ("International Students", 2019). However, the desired outcomes of an SA experience depend on how well students adjust to being in a different culture and, often, how they manage culture shock (Lou & Bosley, 2009; Vande Berg, 2009; Vande Berg, Conner-Linton, & Paige, 2009). Culture shock is considered to be a consequence of stress and anxiety when student individuals encounter a new and different culture with different rules for interaction. Students are not always well prepared for emotional, physical and cognitive challenges, which can cause psychological stress and reactions such as feeling lost, confused, and homesick. They may become ethnocentric (e.g., defensive of their own worldview) or isolated, and may begin to miss classes and not achieve well academically (Baldassar & McKenzie, 2016; Bennett, 1993; Corder et al., 2018; Hammer, 2012; Paige & Goode, 2009; Vande Berg, Paige & Lou, 2012; Winkelman, 1994). Studies show the importance of ICC in helping international students to adapt to and immerse themselves in a new and different culture effectively. In addition, a number of studies indicate that virtual platforms such as SL have the potential to facilitate the development of ICC and prepare students for SA (Corder & U-Mackey, 2015; Ko, Boswell & Yoon, 2013).

Intercultural communicative competence

ICC is defined as the ability to interact appropriately and effectively with people from different cultures and worldviews. It is also a combination of an individual's personal capabilities (such as self-awareness, flexibility and willingness to adjust) and relevant contextual variables (such as shared goals, and motivations) (Arasaratnam, 2016; Cushner & Chang, 2015; Kupka, 2008; Spitzberg & Changnon, 2009). Competences commonly found in intercultural models include: 'Attitude' (such as respect for differences, curiosity in learning about differences, empathy and perspective taking); 'Knowledge' (such as global awareness of culture, politics, religions); 'Skills and Behaviours' (such as linguistic and communicative skills, flexibility, and conflict resolution skills); and 'Critical cultural awareness' (such as critical self-reflection on values and worldviews) (Byram, 2008; Deardorff & Jones, 2012). Critical cultural self-awareness is considered by many scholars to be fundamental to the development of ICC (Byram, 2008; Corder & U-Mackey, 2015; Deardorff, 2006; Deardorff & Jones, 2012; Paige & Goode, 2009; Spitzberg & Changnon, 2009). Moreover, intercultural scholars maintain that ICC needs intentional development (Byram, 2008; Corder & U-Mackey, 2015; Deardorff, 2006; Paige & Goode, 2009). While experiential learning is a strongly recommended approach, one of the main challenges is creating intercultural experiences in a classroom situation (Corder & U-Mackey, 2015).

Second Life affordances and intercultural communicative competence

Scholars have investigated the educational potential of virtual worlds (Ata, 2016; Grant, Huang, & Pasfield-Neofitou, 2018; M. Lee, Gregory, Dalgarno, Carlson, & Tynan, 2013; Schiller, 2009). There is evidence that

the affordances of virtual worlds provide authentic and creative learning environments to help learners develop an understanding of culture and diversity, manage uncertainty and solve problems (Gregory & Wood, 2018; Siegel, 2010). According to Gregory and Wood (2018), tasks that are authentic and creative have the potential to be intrinsically motivating. Compared with conventional teaching, SL facilitates student-centred learning (Schiller, 2009), and affordances such as virtual classes can reduce language boundaries and social anxiety (Grant et al., 2018; Jarmon, Traphagan, Mayrath, & Trivedi, 2009). After examining several examples of project-based experiential learning on different virtual platforms, Jarmon et al. (2009) concluded that SL could be an optimal experiential learning virtual platform.

The 3-D virtual environment of SL, with its rich variety of cultural communities and use of avatars, makes it an effective platform in terms of communication, and intercultural interaction (Barnes & Pressey, 2011; Corder & U-Mackey, 2015, 2018; Gallego, Bueno, & Noyes, 2016; Schiller, 2009). English is the dominant language in SL, which reflects the situation in real life (Diehl & Prins, 2008). However, the variety of cultural spaces also provides opportunities to interact and practise a range of languages with speakers of languages other than English, and at the same time, to experience a range of cultural settings (Ata, 2016; Baker, Wentz & Woods, 2009; Corder & U- Mackey, 2015). These opportunities for deep intercultural experiential learning are difficult to create in the classroom situation. In addition, the use of avatars can reduce communication and language anxieties as avatars enable risk taking without the embarrassment that can occur in real life interactions (Corder & U- Mackey, 2015). Every member of the SL community can choose their own avatar, whether classic human or fantasy human (Figure 1), animal or robot. They are also able to change their appearance through adjusting the avatar's nose, height, leg length and outfits (Figure 2). These are effective tools to explore identity and develop critical self-awareness, which is essential to understanding one's worldview in the development of ICC (Corder & U- Mackey, 2015; Diehl & Prins, 2008).

Encountering the different rules and worldviews of different communities and avatars challenges learners' assumptions, and can facilitate the cross-cultural adaptation and culture shock management skills that are needed for SA (Barnes & Pressey, 2011; Corder & U-Mackey, 2015, 2018; Gallego et al., 2016; Schiller, 2009). As Shuter (2012) suggested, "participating in Second Life may improve intercultural skills that are essential for intercultural competence and successful cultural adaptation" (p. 228). These affordances make SL ideal for preparing students for SA (Corder & U-Mackey, 2015). While there are a number of studies on the affordances of virtual environments and intercultural development, such as those by Corder and U-Mackey (2015, 2018), and studies on the development of language education sites that help people cultivate their ICC skills (Starkey (2007), there are no studies on the tools and resources for creating self-study to develop ICC such as those created for this exegesis.

The following figures illustrate the range of affordances in SL that can be integrated into the creation of a self-study design.
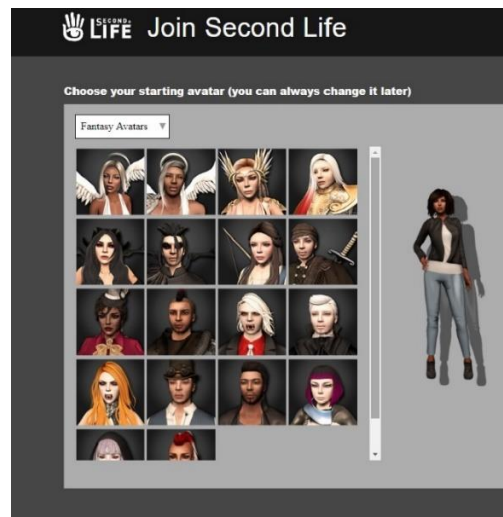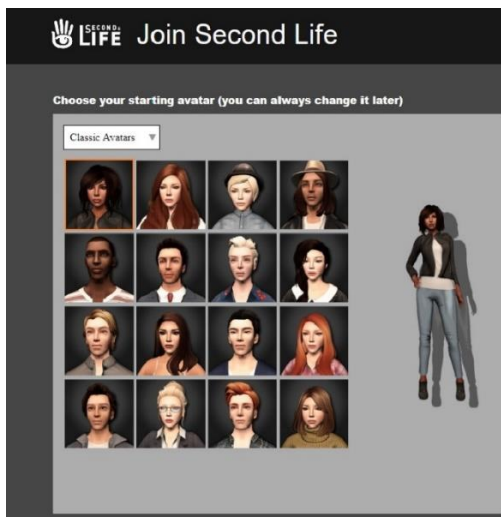
Figure 1: Classic avatars and fantasy avatars

Figure 2: Appearance change

As mentioned above, avatars can be used to explore identity, and explore and interact with different cultural artefacts. They can move freely to carry out various actions (Diehl & Prins, 2008) such as flying (Figure 3), teleporting to different locations, (Figure 4), and having conversations using a Chat Bar with other avatars and objects (Figure 5). Avatars also play a part in avatar–machine or avatar–avatar interactions (communicating with other avatars, watching videos, and filling in surveys and quizzes).

Figure 3: Flying avatar

Figure 4: Teleporting to a different location
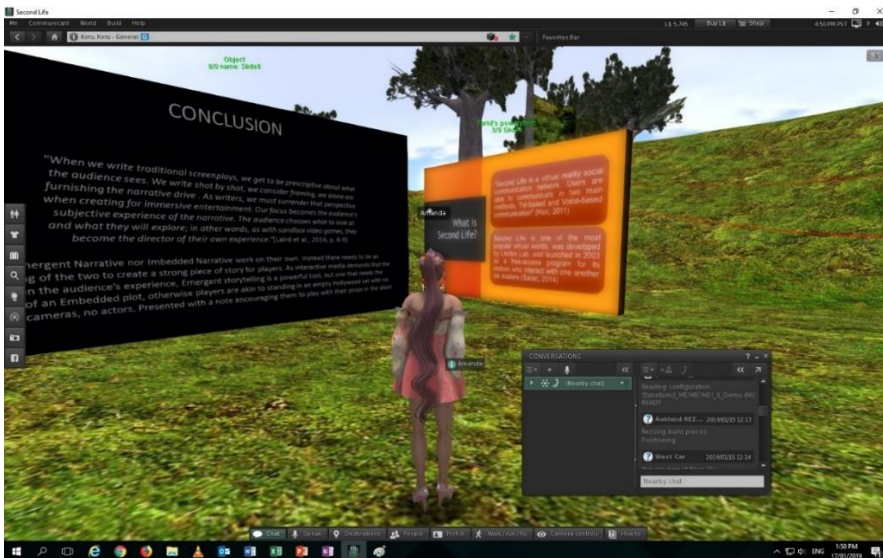
Figure 5: Talking to another avatar using a chat bar

SL also provides advantages for creators who can incorporate various activities into the design by linking objects with websites such as videos, surveys and quizzes. Avatars can click on the objects to go to the webpage to watch videos (Figure 6), or to take surveys and quizzes (Figure 7). As the avatar approaches an object, they will know immediately what the object is about, and all actions on the object can be recorded on a website and can be used by creators for data collection and analysis.

Figure 6: Display of a video on the surface of an object

Figure 7: Display of a survey on the surface of an object

PowerPoint (PPT) presentations (Figure 8) are useful for teaching and learning in SL, and learners can click through them for information. They are a physical classroom strategy, often text-based, and commonly used by educators in SL to convey information. However, as pointed out by Ata (2016, p. 10), the environment can be configured 'to augment existing (generic) teaching practice' to promote active learning. This would include ensuring the use of a range of multiple media sources to convey information, such as audio and video, as illustrated in Figure 6, and not just traditional text.

Figure 8: A PowerPoint slide in Second Life

Notecards are useful for giving information and instructions to both creators and users, and for inserting teleporting links. Figure 9 illustrates an information notecard informing the avatar what measure words will appear on a Chinese menu and how to pronounce them in Chinese.

Figure 9: Notecard for giving information

The heads-up display (HUD) gives users more capabilities in animating their avatars to interact with the environment such as dancing, playing a musical instrument or driving a car, or to use objects such as putting on wigs, and changing clothes and hair colour (Linden, 2018). Figure 10 is a HUD used to change hair colour.

Figure 10: Wearing a HUD to change hair colour

As mentioned above, SL has a rich variety of cultural representations (Corder & U-Mackey, 2010, 2015, 2018; Siegel, 2010), and immersing in these cultural environments has the potential to increase cultural awareness and critical self-awareness. There are many cultural places such as China Town (Figure 11) and Chinese Island (Figure 12). While both China Town and Chinese Island represent China, they represent the different perspectives of the creators. Experience of different perspectives of a culture, especially if it is of one's own

culture, may trigger culture shock in learners, as it may challenge an individual's assumptions, worldview and even identity. This can help increase critical self-awareness, which is essential for developing ICC, as well as the ability to adjust to an unfamiliar context or culture (Corder & U-Mackey, 2015).

Figure 11: China Town in Second Life

Figure 12: Chinese Island in Second Life

The affordances of SL, therefore, make it a suitable platform for the researcher to develop an educational resource to help international students develop ICC for SA. The design of the resources in this study is discussed in Chapter Four. The next chapter, Chapter Three, explains the methodology and tools used in this study.

Chapter Three: Methodology

Research framework

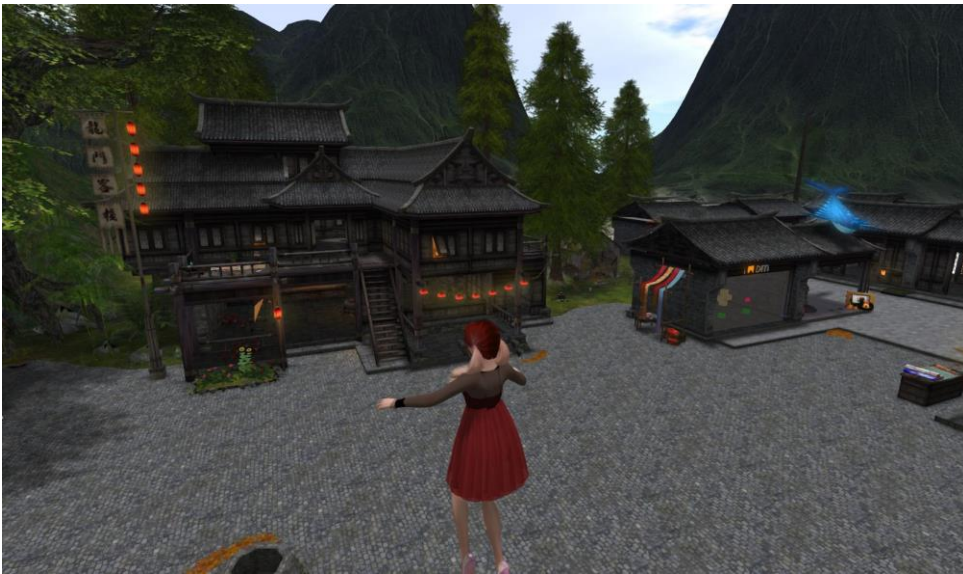The aim of the research was to create an educational resource in SL for international students to develop ICC. As the research questions sought to identify what effective educational resources could be created in SL to facilitate this development, the main theoretical framework was practice-based. This practice involved a process of building on existing knowledge by creating an artefact (Candy, 2006). The process was informed by theory, existing research, examples of existing artefacts, problem solving and practitioner reflection (Dirkx, 2006, 2008). The point of departure was that SL has the potential to facilitate the development of ICC (Corder & U-Mackey, 2015, 2018; Diehl & Prins, 2008; Gregory & Wood, 2018; Siegel, 2010; Shuter, 2012). The intended outcomes were to seek answers to the research questions and to extend the knowledge and practice of using virtual worlds such as SL for the development of ICC.

The intercultural theory and frameworks used in the design were taken from intercultural research and intercultural teaching such as the work of Byram (2008), and Deardorff (2008, 2009), and findings from related research studies (Corder & U-Mackey 2015, 2018; Kupka, 2008; Paige & Goode, 2009; Spitzberg & Changnon, 2009). As the intercultural resource was intended to be for self-access, the study also drew on the principles of materials design for self-access learning. This was to ensure choices for learning needs, relevant material, clear instructions, and feedback for self-evaluation and learning to take place (Sheerin, 1997). There is evidence that self-access resources that engage learners in exploring different cultures and contexts have the potential for ICC development (Paige, Cohen & Shively, 2014; Sobkowiak, 2017).

To answer the question relating to the demands and challenges faced by the practitioner, the study also applied the process of reflective practice (Schön, 1983) over the course of the design and creation of the resources in SL. Through reflective practice, the researcher was able to be more critically aware of their own biases and preferences in the choice of design (Schwandt, as cited in LaBanca, 2011). Moreover, reflective practice engaged the researcher and supervisor in the process of identifying underlying design problems and solving uncertain situations (Schön, 1994). The researcher kept a reflective blog during the design process, which was used to reflect on discussions with the supervisor, and on the process of decision making in the selection of tools and the creation of resources.

To determine how participants responded and to what degree the resource facilitated the development of ICC, the study used a mixed-methods approach, drawing on practice-based, mainly qualitative data from a questionnaire to gain insights into the participants' perspectives on their experiences (Tolich & Davidson, 1999). The questionnaire was sent to all the participants who had taken part in the study. Because of the small number of participants, all participants were also invited to attend semi-structured interviews to explore experiences more deeply. Additional data was collected from the pre- and post-experiential activity surveys completed by participants.

Data gathering and analysis

The researcher asked friends to experience and evaluate the space and educational resources, and also asked lecturers for help in contacting potential participants from their students. In total, 12 potential participants were approached to participate in the study. An invitation letter with participant information and consent forms were sent to the 12 participants, and 9 of them consented. The letters were sent on February 19, 2019, and the first response was received on February 21. Once each response was received, times were arranged for each participant to experience the ICC Education Campus activities. The first participant engaged in the study on February 21, and the last person to take part in the study did so in late March 2019. When returning their consents, many of the participants said they only had up to one hour to take part in the study. They were therefore asked to experience as many of the activities in the ICC Education Campus as one hour allowed, and to at least complete one experiential teleporting activity in this time. All the participants had been notified that they could withdraw at any time if they felt uncomfortable in any way. The participants used computers available in a room at Auckland University of Technology to access Second Life. After they had set up their own SL accounts and logged on, they were teleported automatically to a tutorial location to learn how to navigate and use tools in SL. A short tutorial on using the ICC Education Campus was then provided by the researcher for those participants who needed further help with completing activities.

All the questionnaires were received and interviews completed by late March. The researcher read each questionnaire, coded the data in different tables to indicate participants' profiles as well as prior experiences of SL and SA. Using the Nvivo application, the interview data was analysed for recurring patterns and particular themes, such as words used to describe the experience of the ICC Education Campus, and correlations between the use of SL and ICC development. The interviews were similarly coded for themes. The questionnaires can be found in Appendix A and interview questions can be found in Appendix B.

The researcher's reflections during the planning and designing process, considered a method of analysis (Barrett & Bolt, 2007; Nelson, 2013), were included in the analysis, and are used in Chapter Six to reflect on the findings.

Ethics approval was granted by the Auckland University of Technology Ethics Committee and received on February 12, 2019, with a reference number 19/19.

The ICC Education Campus and design process are described in the next chapter, Chapter Four, followed by the findings in Chapter Five.

Chapter Four: The Design of the ICC Education Campus in Second Life

The ICC Education Campus was constructed on a size of 3568 m² (parcel) land in SL under a one-year premium membership, which started on September 5, 2018.

The ICC Education Campus is a totally immersive virtual place of study, consisting of three builds where participants can do activities to develop their ICC. These builds consist of a café, a house and a modified replica of the Auckland Sky Tower. Each build has a particular function, with the resources designed to develop ICC located on four floors in the Auckland Sky Tower.

The café and the house

A café (Figure 13) was built for socialising and holding meetings. Participants could hold meetings on the roof area where tables are located (Figure 14). The café was purchased from a Second Life shop, and was designed by other users. A café was chosen to be part of the design because many universities have their own cafés on campus and it would provide a place for participants to extend their virtual experience by animating their avatars in the café and simulating real life café behaviour (Figure 15). This café was chosen simply because the design was attractive.

Figure 13: The café on the ICC Education Campus

Figure 14: Tables on the roof area of the café on the ICC Education Campus

Figure 15: The "notebook" animation in the café on the ICC Education Campus

The house (Figure 16) was chosen to bring the accommodation feel to the campus, and to enrich participants' virtual experience by enabling them to explore the facilities in the virtual house. The house was bought from a Second Life shop.

Figure 16: The house on the ICC Education Campus

The Sky Tower

A vertical design was better suited to accommodating all the planned resources than a horizontal design, because of the limitation on the land area. The Auckland Sky Tower (Figure 17) was chosen because it is so symbolic of the city of Auckland where this study took place, and where all the participants were studying at the time. It was therefore considered to be a natural home for the ICC Education Campus because it was familiar to the researcher as well as to the participants.

Figure 17: The Auckland Sky Tower on the ICC Education Campus

Close to each of the three builds, there are PPT presentations (Figures 18, 19 and 20) explaining how to use the ICC resources in the Sky Tower. Participants could read the PPTs to get a general idea of what the campus was about and what they could do there.

Figure 18: The front page in the presentation on the ICC Education Campus
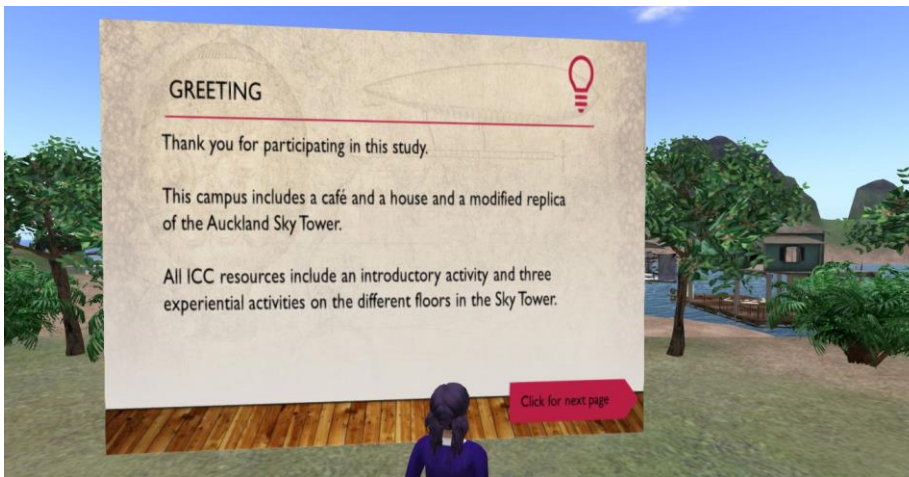
Figure 19: The welcome page in the presentation on the ICC Education Campus
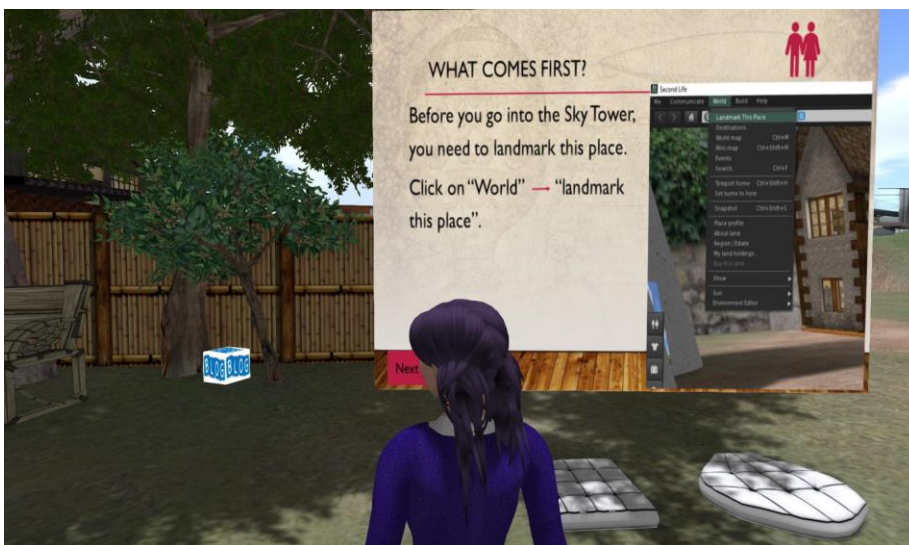
Figure 20: The instruction page in the presentation on the ICC Education Campus

The ICC resources in the Sky Tower

The Sky Tower offers a range of activities, set out over four floors, to scaffold the development of ICC. Each floor has sections for readings, videos, and blogs, and on the second, third and fourth floors there are experiential teleporting activities, post-teleporting surveys and quizzes. Participants had to work through the activities on each floor in sequence (they had to start on the first floor and complete activities in turn). The ICC classes taken by the researcher provided ideas for the PPTs, videos and quizzes used in developing the resources in the study.

The first floor

On each floor, notecards inform participants about the activities and resources on that floor (Figure 21), and introduce them to ICC concepts through PPTs and videos.
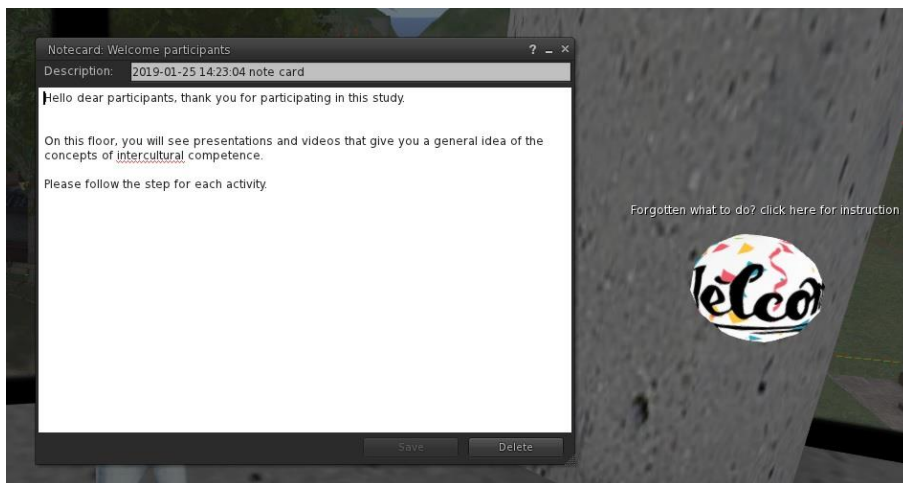
Figure 21: An introduction notecard

The first floor introduces the concept of ICC (what it is and why it important to develop it) using PPTs and a video (Figures 22 and 23).
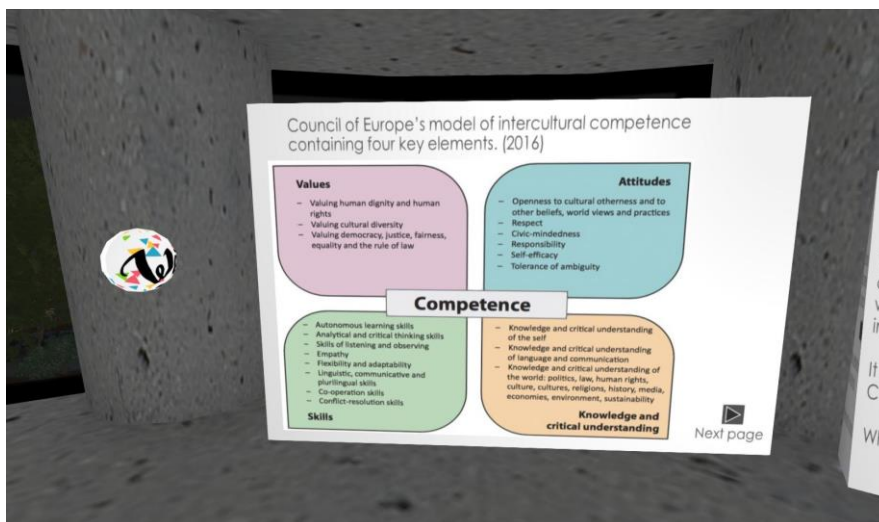
Figure 22: A PPT presentation defining ICC
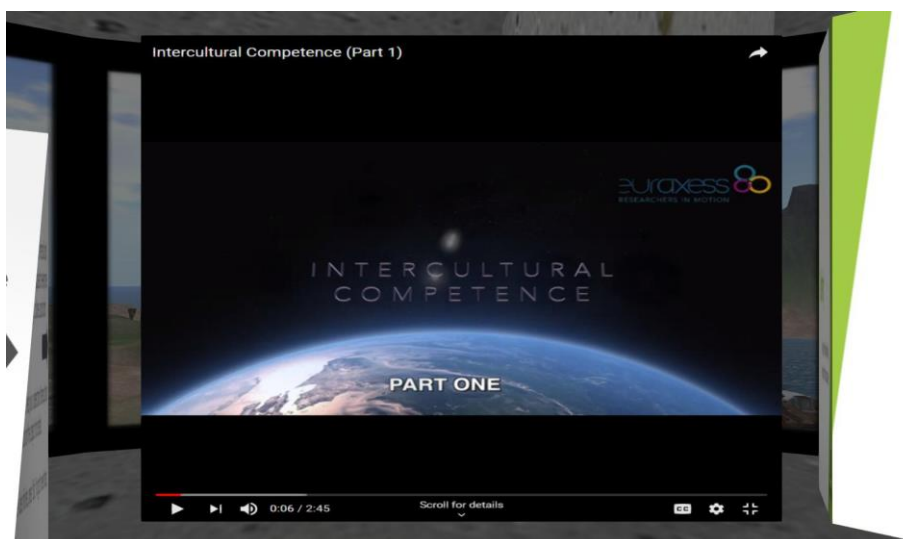
Figure 23: A video defining ICC

A PPT (Figure 24) reviews the concepts developed in the video and emphasises the importance of developing ICC.
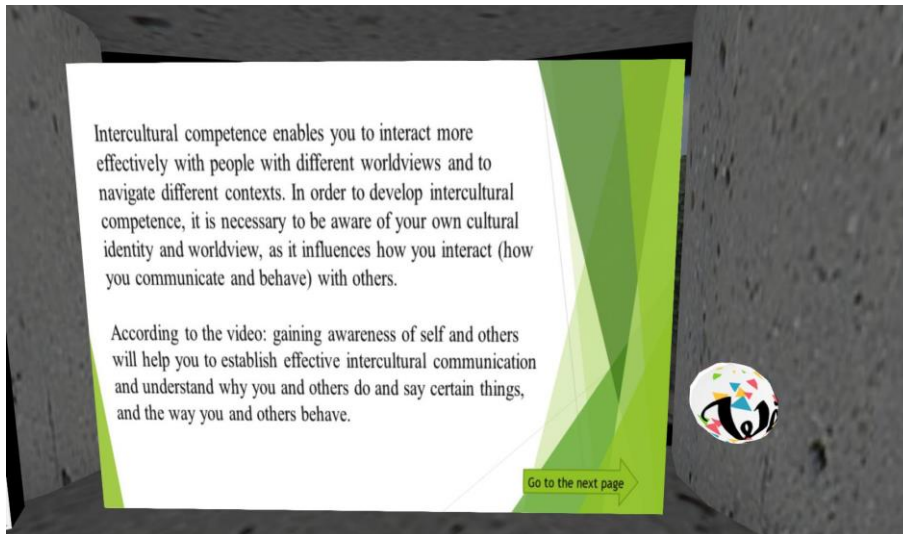
Figure 24: Review of the video

Figure 25 shows the PPT that is located at the end of the first floor and introduces the activities and resources on the next floor.
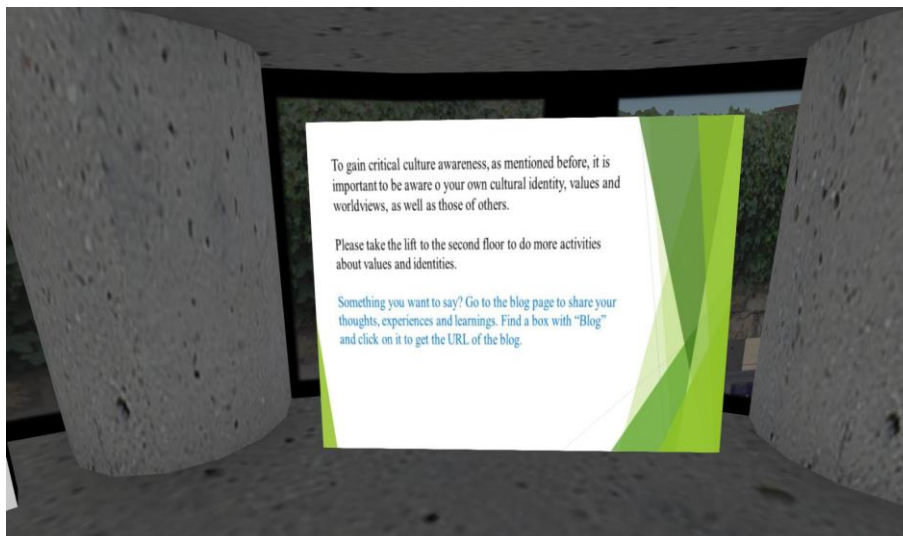
Figure 25: Introduction for the next activity on the first floor

Sharing ideas and experiences through reflections is important for ICC development. Moreover, writing in blogs provides opportunities to reflect on and share experiences, ideas and thoughts, and gain different cultural perspectives (Corder & U-Mackey, 2015; L. Lee, 2011). As blogging has such advantages in developing ICC, before participants left a floor, they could participate in a blog (Figure 26), by clicking on the "BLOG" object.

Figure 26: "BLOG" box and its link

The other three floors

The theoretical concepts used in ICC development are introduced from floor two onwards. Each floor offers experiential teleporting activities, post-teleporting surveys, PPTs for the targeted ICC concepts, self-test ICC quizzes and videos on the targeted ICC concepts. Each experimental activity has a particular focus, as shown in Table 1.

Table 1: Experiential activities

Floor NO.	Where to teleport	Targeted ICC concepts
2	Two freebie shops	Values and identity (value orientations)
3	Two China Towns	Stereotypes and ethnocentrism
4	Two popular places	Verbal communication style (High/Low context)

As discussed in Chapter Two, the SL affordance of teleporting to immerse in different cultural environments is effective for developing participants' ICC. The teleport destinations for this design were not chosen to prepare participants for a specific culture, but to help with the development of generic transferable competences for encounters with difference and the unfamiliar in any cultural context. All the destinations had the potential to raise awareness of identity, expose individuals to difference and possibly, push them out of their comfort zones by requiring them to interact with unknown others. Individuals hold biases and stereotypes of their own and other countries, based on their different life experiences (Ting-Toomey & Chung, 2012). Three participants were non-Chinese and had never been to China, and six were Chinese but from different parts of China. The inclusion of representations of northern and southern China, which differ in many ways, would challenge the assumptions and biases of the participants, whether or not they were from China, and raise

their awareness of any tendencies to stereotype. With a bigger study, more places could be added, including those representing the cultures of more of the participants.

In the freebie shops, participants could buy clothing and avatar persona. They could also personalise their avatar's appearance, such as colour and size of eyes, and length and shape of legs. These shops had the potential for developing ICC, in that making decisions about clothes or appearance can raise awareness of identity and worldview (Corder & U-Mackey, 2015; Diehl & Prins, 2008).

The aim of the two popular places in SL was to raise participants' awareness of their communication styles. Different communication styles can cause misunderstandings. Knowing one's own communication style with others allows individuals to adjust behaviour in different interaction situations, and to communicate more effectively (Ting-Toomey & Chung, 2012). As Ting-Toomey and Chung (2012) stated, communication styles vary between genders, cultures, and contexts. To evaluate participants' different communication styles, London and Dublin were chosen as the popular places for the teleport destinations. These places were among the top ranked places in the Second Life official page during the design process. This meant there would always be many avatars online at any one time in these two places, so participants could easily find someone to talk to, and reflect on their own and others' communication styles. Following the teleporting, participants were asked to reflect and answer questions on their experiences in a survey. In PPTs and videos after the survey, the definition of communication styles is provided, and the importance of communication styles in ICC development is explained. Figures 27 and 28 are panoramas of the layout of the activities on the second floor.
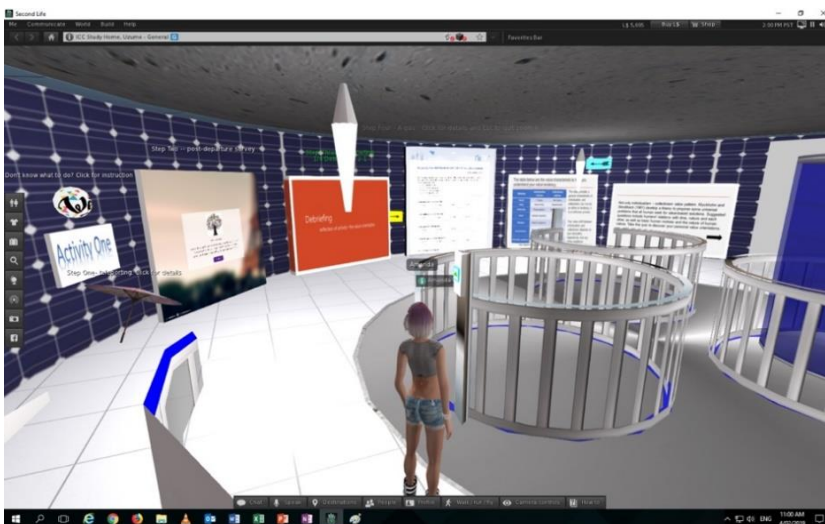
Figure 27: The left-side panorama of the activities on the second floor

Figure 28: The right-side panorama of the activities on the second floor

The teleporting instructions

Participants could click on the "welcome" object to get an instruction notecard on teleporting (Figures 29, 30 and 31). They could click on the link on the notecards to teleport to target places.

When participants received the notecard, it stayed on the screen unless participants closed it. It was easy to teleport to different target places and back to the campus if participants kept it open when exploring those places. Otherwise participants could go to "inventory" and "notecards" to reopen the notecards.
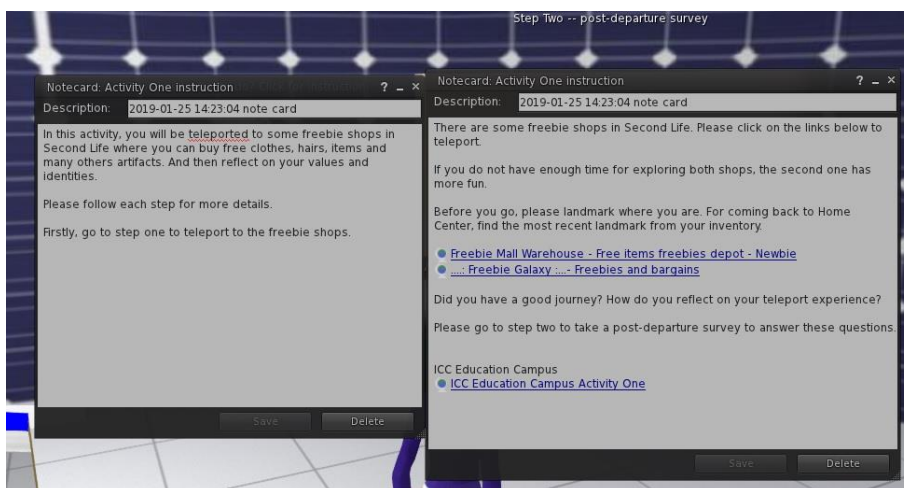
Figure 29: The first experiential activity instruction and teleporting notecards
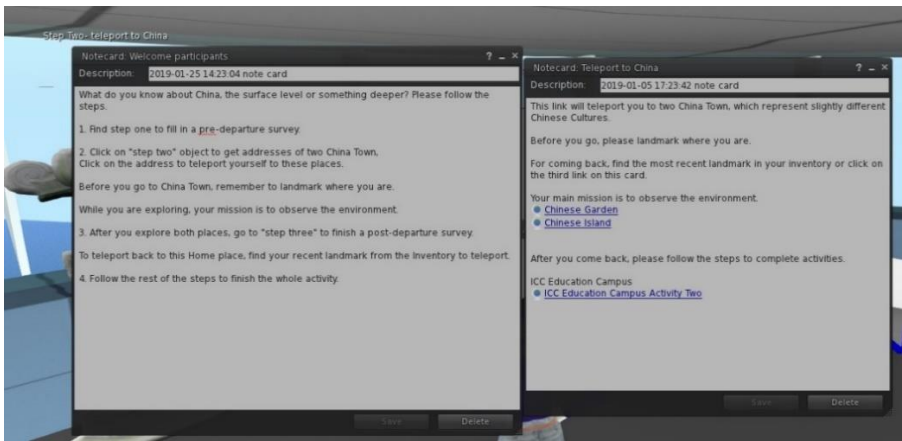
Figure 30: The second experiential activity instruction and teleporting notecards
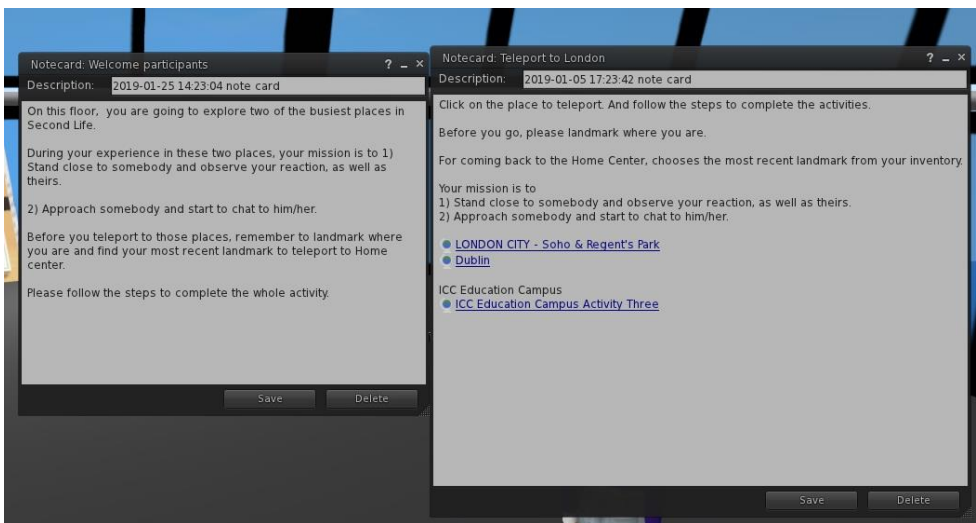
Figure 31: The last experiential activity instruction and teleporting notecards

The post-teleporting surveys

Providing opportunities for debriefing and critical reflection after experiential activities is an important part in ICC pedagogy (Corder & U-Mackey, 2015; Deardorff, 2011). Post-teleporting experience surveys were designed to initiate the process of debriefing and reflection by asking participants to complete questions on their feelings and thinking after exploring the various places. The design of each survey consists of a front page (Figure 32); mandatory questions, such as the avatar's name (Figure 33); concept-relevant questions (Figure 34) and questions on participants' perspectives (Figure 35). The Survey Anyplace website was used to create each of the surveys and they were accessed on the ICC Education Campus via the web browser functionality embedded in the survey page.
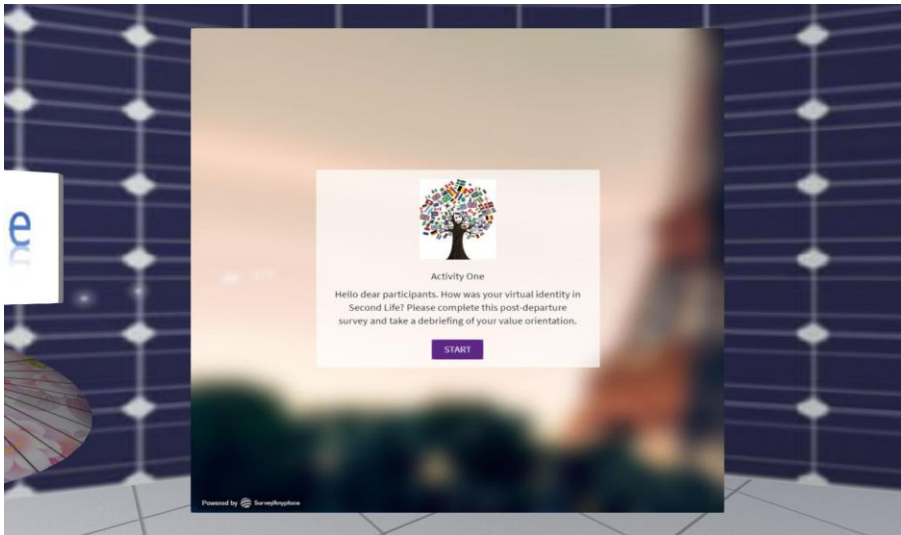
Figure 32: The front page of the survey
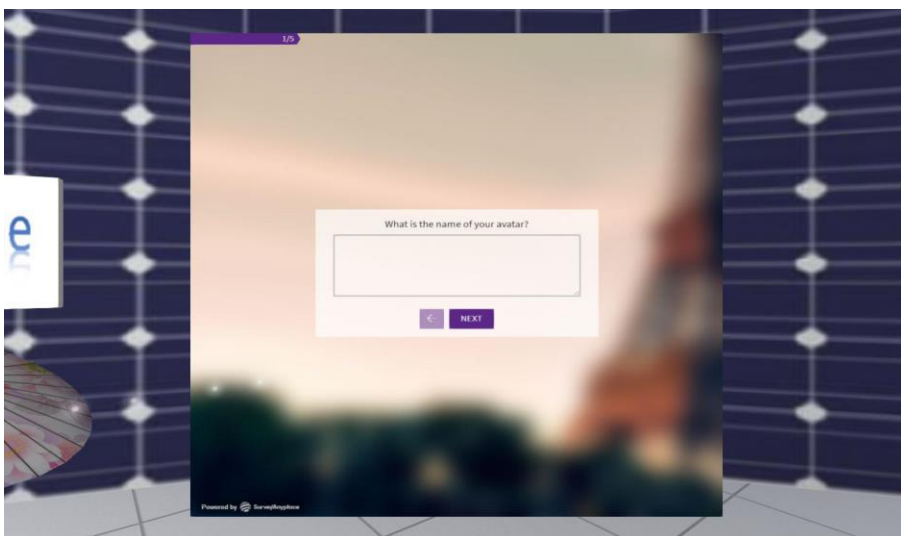
Figure 33: The mandatory question on the avatar's name
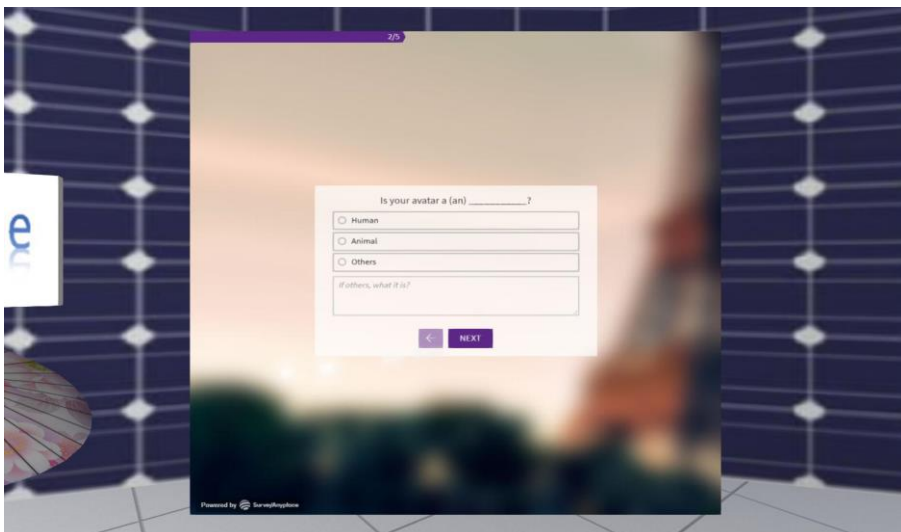
Figure 34: The concept-relevant question in the survey
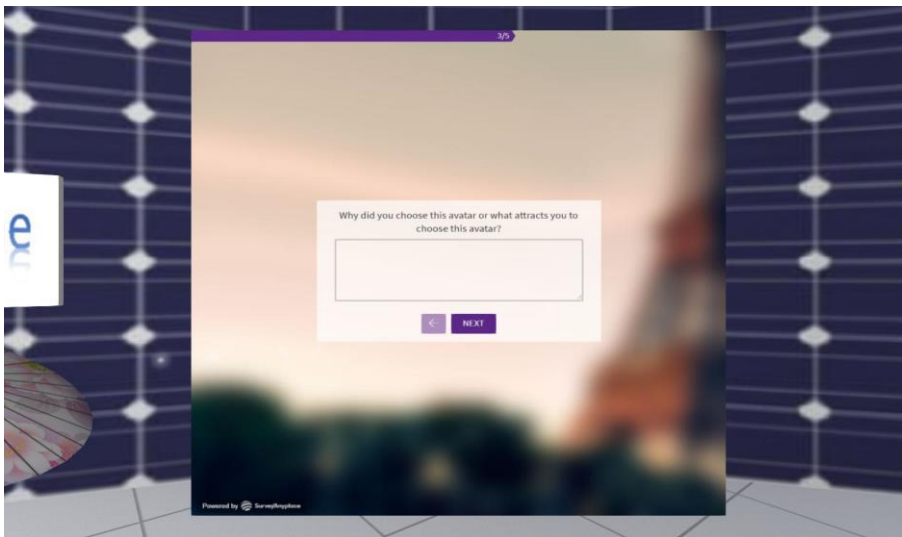
Figure 35: A survey question on participants' choice of avatar

The targeted ICC concepts PPTs

After participants completed post-teleporting surveys, information in PPTs introduced them to targeted ICC concepts that helped explain their experiences (Figure 36). These were followed by quizzes (Figure 37) and videos (Figure 38) on the targeted concepts.
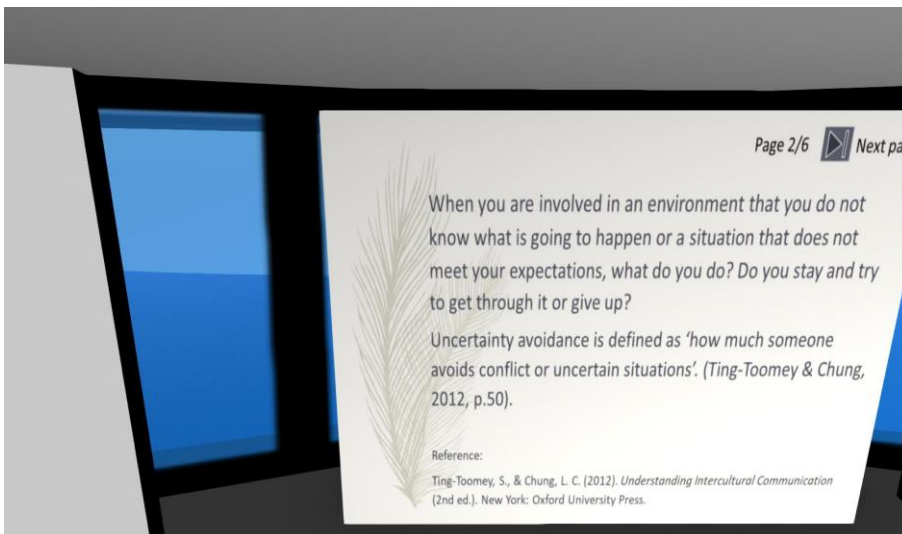
Figure 36: Concept details
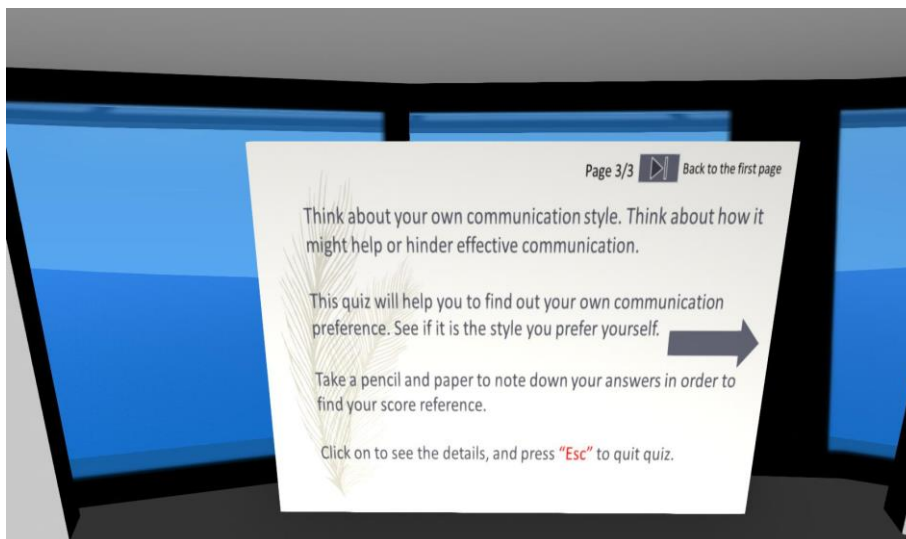
Figure 37: PPT slide leading to a quiz task
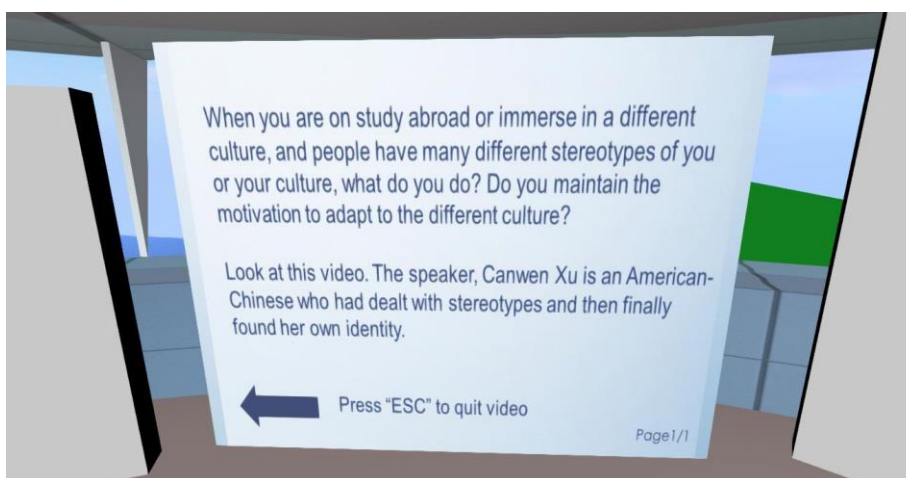
Figure 38: PPT slide leading to a video task

The self-test ICC quizzes

Ideas for self-test quizzes to increase self-awareness were based on adaptations of quizzes from a publication by Ting-Toomey and Chung (2012) (Figure 39). The scoring is at the end of the quizzes (Figure 40). Because there are no right or wrong answers in ICC quizzes of this nature, participants needed to count their own scores to see their value tendencies. Therefore, the questions and scoring had to be displayed on the same page, like the quiz shown in Figures 39 and 40. After researching many different quiz making websites, the Chinese website WIX.cn was chosen and used to create each of the quizzes, and accessed on the ICC Education Campus via the web browser functionality.
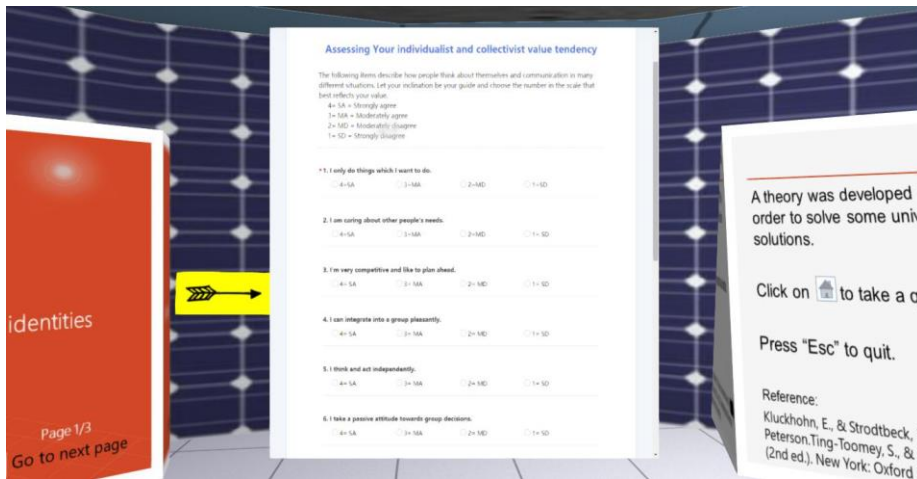
Figure 39: Quiz of self-tasking in ICC Education Campus
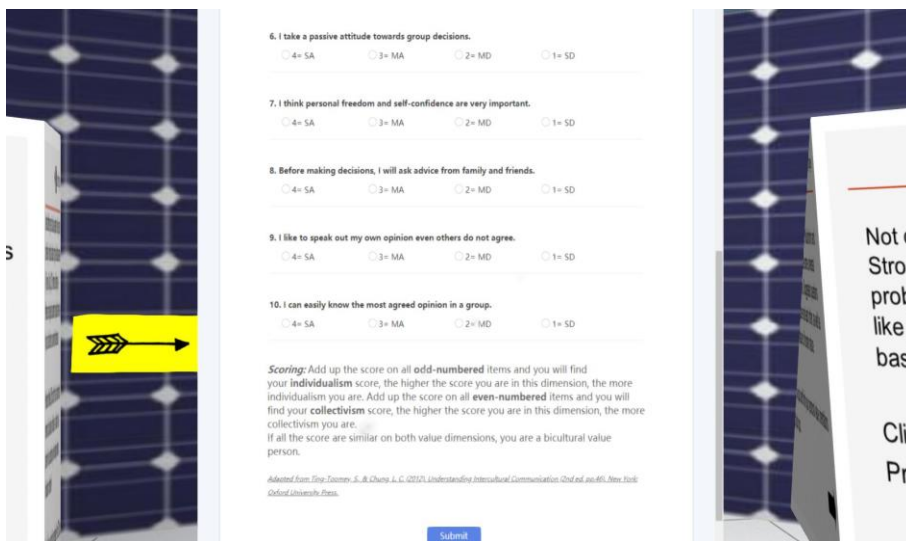
Figure 40: Scoring and reference in quiz

The targeted ICC concept videos

The way people absorb and retain information in learning situations is defined as learning style (Alkooheji & Al-Hattami, 2018). To take into account different learning styles, videos were also used to explain ICC concepts (Figure 41-42). Relevant YouTube videos were chosen by the researcher, and accessed by participants on ICC Education Campus via the web browser functionality.

Figure 41: Student lecture video on stereotypes
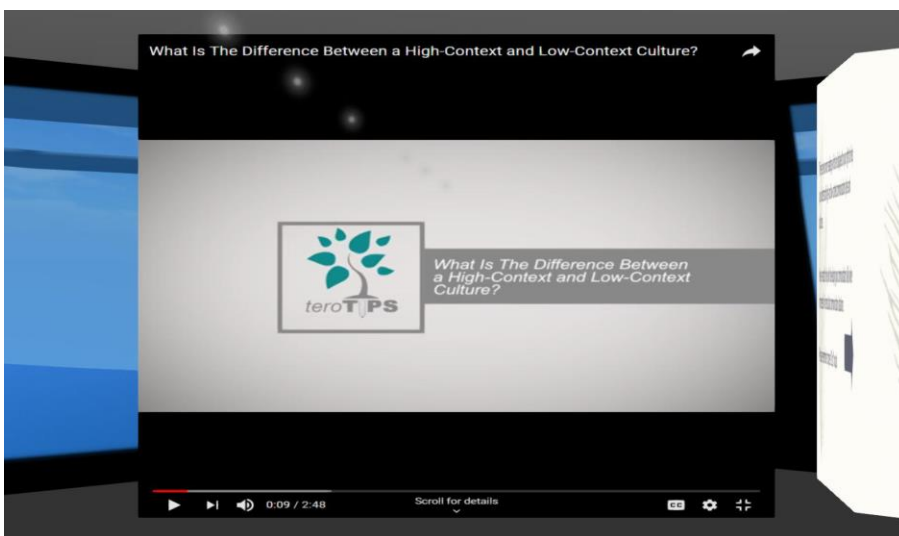
Figure 42: A video on communication styles (high and low context)

Concluding PPT for each floor

At the end of the activities on each floor, a PPT slide summarises the target ICC concepts of that floor, introduces the contents and activities of the next floor, and guides participants to the next floor (Figures 43 and 44).
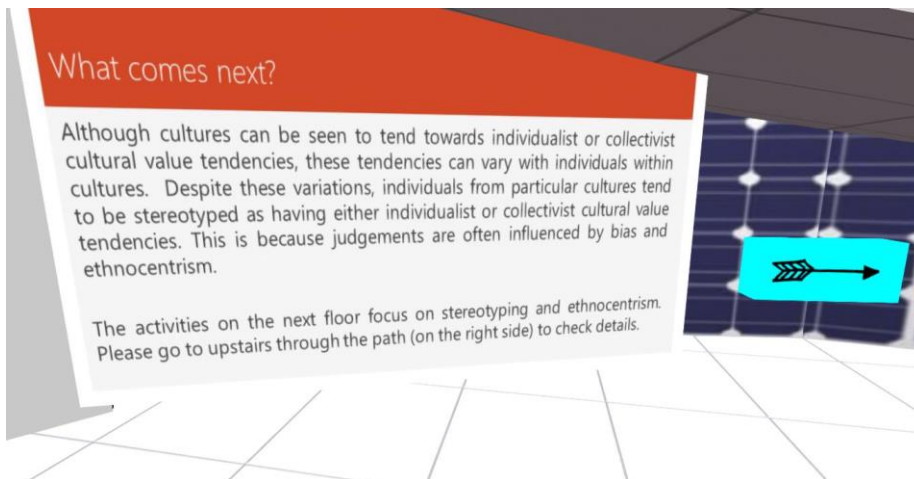
Figure 43: The introduction of the next activity on the second floor
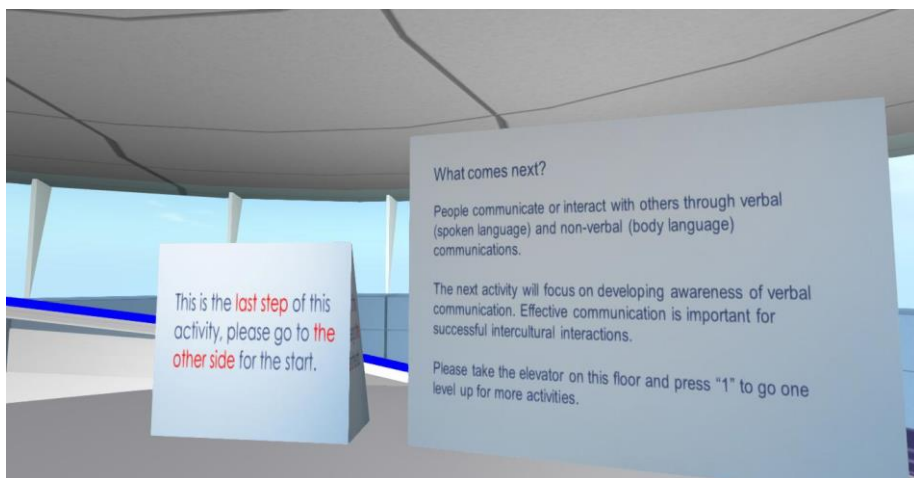
Figure 44: The introduction of the next activity on the third floor

Chapter Five: Findings

Participant details

In total, nine participants took part in the study evaluation. Five were currently on SA, four of them for the first time. All the others were permanent residents or naturalised citizens with previous SA experience. Two of the latter had prior knowledge of ICC, having taken papers on the subject at university, one of whom stopped using ICC resources in the ICC Education Campus and logged off SL after 15 minutes. Of the eight participants who engaged with the resources for longer periods, seven completed all the activities on the first, second and third floors, and only one completed all the activities on all the four floors. These participants also completed questionnaires and a total of five people participated in interviews including the participant who logged off SL after 15 minutes.

Six participants were postgraduate students and three were undergraduate students. There was a good balance of genders. Eight participants were aged between18 and 28, and one participant was over 40 years old. Six participants were from China, one was from India, and two participants were migrants, one from India, the other from the Philippines. Five participants lived with people from their own country during SA, two participants lived with their classmates, and one participant lived with people from same interest group. Five participants decided to go on SA because of the desire to gain knowledge and experience of different cultures. Two participants went on SA on the basis of a decision by their parents. The reason for Participant 2 going on SA was because he did not like staying in his home country any more. Two participants had improved their language skills as preparations for SA, and the other six participants had prepared language and cultural studies on the target countries before going on SA.

Four of the Chinese participants were familiar with online games, and one of them had previously studied SL in a university paper. One of the other Chinese participants had an interest in new media platforms. Apart from the participant who had studied SL in a new media paper and two participants who had seen videos and discussed the virtual culture in SL in their ICC papers, none of the other six participants had heard about SL before. More details about the participants are shown in Table 2.

Table 2: Summary of participant information

Participant	Academic status	Description of participant
P1 (I)	Postgraduate student	Chinese, Male, age 18-28. Did not know anything about ICC. Game player, never heard of Second Life before. First time on study abroad.
P2	Postgraduate student	Chinese, Male, age 18-28. Did not know anything about ICC. Game player, never heard of Second Life before. First time on study abroad.
P3 (I)	Postgraduate student	Chinese, Female, age 18-28. Did not know anything about ICC. Game player. Knowledge and experience of Second Life from a New Media paper. Had been on study abroad in the USA for 4 years. Currently on study abroad in NZ.

P4	Undergraduate student	NZ – Chinese, Female, age 18-28. Did not know anything about ICC. Does not play games and never heard about Second Life Came to NZ after high school on study abroad, lived and worked in NZ for 5 years. Now a permanent resident.
P5 (I)	Postgraduate student	Indian, Female, age 39-50. Has good sense of ICC, but never been to an ICC paper. Knew very little of technologies. First time on study abroad in NZ.
P6	Postgraduate student	Chinese, Female, age 18-28. Did not know anything about ICC. Interested in some new media platforms but never heard of Second Life. First time on study abroad.
P7 (I)	Undergraduate student	NZ – Filipino, Male, age 18-28. Had taken two ICC papers, very good knowledge of ICC, heard about Second Life in paper. Migrant to NZ. Had been on an exchange programme in Japan for a year.
P8 (I only)	Undergraduate student	NZ – Indian, Female, age 18-28. Had taken two ICC papers, very good knowledge of ICC. Heard about Second Life in paper; does not like it, and Logged out after 15 minutes. Did not do the questionnaire, only participated in interview. Migrant to NZ. Had just returned from an exchange programme in the Netherlands.
P9	Postgraduate student	Chinese, Male, age 18-28. Did not know anything about ICC. Played stat-alone games more than online ones. Never heard of Second Life. Had been on study abroad in the UK for 1.5 years. Currently on study abroad in NZ.

Note. (I) indicates participant was also interviewed.

The flow/layout and content of activities

In the interview, participants were asked to comment on what they thought about the activities. Most of participants (n=7) used words like "good", "clear", "well structured", "easy to follow" and "the design/idea are good" to describe the layout of activities:

The design was well structured. (P1)

The design was clear, I can easily follow steps to complete activities in each floor. (P6)

I got idea of how to adapt to another culture. The whole design also help me of understanding and accepting differences. (P5)

Three participants with no prior knowledge of ICC had found the explanations of the concept of ICC and other theoretical concepts were good and were useful for developing ICC:

The activities using for gaining conceptual knowledge of ICC and for understanding why people need to develop their ICC. (P2)

This design of activities themselves help me to understand the basic information of intercultural competence, such as definitions and why it need to be developed. (P3)

Experiences of using Second Life platform

In the questionnaire, participants were asked what they thought about studying in a virtual platform. Participant 3, who had studied SL in a paper, said it was 'convenient and more fun than studying in classroom', and others said it was new and fun, and good for learning at one's own pace. Others valued the affordance of awareness raising:

[I]t is a good idea to create a place to share new ideas across the world which is difficult to be done in the real world. (P6)

It's good to know other cultures without the feeling awkward or other uncomfortable feeling through virtual platform. Also, it can hide your nationality to reduce some discrimination in the game. (P9)

However, three participants were critical about the poor control of their avatars which often went through walls or got stuck, and the dated graphics:

*Second life [*sic*] not that attractive because not HD, colour was not attractive and very bed [*sic*] control system. (P2)*

Four participants who took part in interview rated their SL experiences 4 out of 5. They did not rate it 5 out of 5 because of the technology: the control was not good, the platform was old and one got lost because of anxiety about the technology. A very negative opinion was received from Participant 8 who logged out of SL after 15 minutes. She only did the first experiential activity which was to teleport to the two China Towns, completed the survey and briefly scanned the other activities. She found the technology difficult and could not see the value of the tools and resources used in the ICC Education Campus:

It is not really necessary to having them in SL, for people like me, it is really difficult to navigate SL and I cannot wrap my mind around it. I can study the contents of PPT and video in a class. Surveys and quizzes can be provided by lecturers, and we can discuss our thinking with classmates, but Second Life isolates this process. (P8)

The ICC Education Campus and study abroad

In both the interview and the questionnaire, participants reported that using the ICC Education Campus resources in a virtual platform before going on SA could facilitate the development of ICC by alleviating culture shock as well as helping to adjust to a culture:

I think it will be helpful, it can probably "soften" the initial culture shock that one feels while going overseas (P7)

*[I]t can be used to help with adjusted in the new environment [*sic*]. (P2)*

*That would be brilliant and such a nice study opportunities [*sic*]. (P6)*

Most participants thought it would still be helpful for facilitating ICC development during study abroad, and some commented that it would accelerate the pace of adaptation to new environments:

A nice way to know the culture of the country through this platform in advance. People can visit the local streets in real scenes and communicate with local people. This also an environment for language training without any space or distances barriers. (P6)

I think it can facilitate the ICC development as if I am shut down from culture shock, having access to Second Life, a person can have a mini practice interactions with people from different backgrounds to help them get over the culture shock if they are feeling it. (P7)

It is interesting that using second [sic] life [sic] to know different cultures while study abroad. And it can decrease some panic in different countries. (P9)

Avatars and identity

To evaluate the use of avatars in fostering critical cultural awareness, including identity, interviewees were asked to comment on the reasons for their choice of avatar. Additional findings came from answers in the survey following the first teleporting activity on how much the chosen avatar represented participants' cultural and/or personal identity.

Participants showed opposing attitudes towards the choice of avatar; six participants chose their avatars simply because of how it looked. However, although they did not consider that appearance could reflect their real-life identities, some comments showed their worldviews.

I do not think my avatar is me, I chose it just because I like it. (P8)

It was an automatic selection when I set up Second Life account. An avatar like this cannot resemble an individual's identity as an identity is far more than looks. (P4)

I chose this avatar because it looks pretty. (P5)

I chose it because it looks handsome. (P1)

Even though Participant 3, who is Chinese, did not consider her avatar represented her, she deliberately chose an Asian-looking avatar which represented her ethnicity.

I chose this avatar just because she has black hair and looks very Asian, I don't think it represent 'me'. (P3)

Three participants found that their avatars somehow embodied themselves, and were not even 'ideal', but their cultures/identities were partly represented through their avatars. Participant 7 said in interview that this made him feel secure when interacting in SL.

I have careful chosen my avatar to look as Kokiri-like as possible, including consideration of skin tone, avatar size, and appearance. (P9)

The appearance represent the dual personality of me somewhat. (P6)

The tools and resources

Each floor in the ICC Education Campus has PPTs and videos to explain theoretical concepts, and quizzes to test the learning; floors two to four each have a teleporting experiential activity followed by debrief surveys. Questions 17-18 in the questionnaire sought to find out whether or not the resources met the needs of different learning preferences, and asked participants to rank the various activities and why. Table 3 shows the range of learning preferences

Table 3: Ranking details (Some participants ranked more than one as the most useful tools)

Rank / Participants	Teleporting	Surveys	Information PPTs	Videos	Quizzes	Blogs	Ranking reason
P1	1st (Teleport to China)			1st			*Videos are interesting, and there are too many words in PPTs, I don't like to read them.*
P2	1st (Teleport to shops)		4th	3rd	2nd		*The PPTs makes me dizzy, I prefer watching videos, but some videos are too long.*
P3			2nd	1st	1st		*I can pay more attention to the videos than PPTs, since there are pictures and voices.*
P4			1st	2nd	1st		*PPT are pretty straight forward, it tells what's happening.*
P5	1st (Teleport to China)		1st				*I like reading words, and PPTs are showing the knowledge of Intercultural competence, it also explains the content of videos and quizzes.*
P6	3rd (Teleport to China)		2nd	1st			*Videos are much better ways to get people up to speed on the subject by using image and voices*
P7	1st (Teleport to London city, one of the busiest places in SL)						
P9	1st (Teleport to China)		1st				*Reading slide is also interesting especially I see my character stand in front of the slide screen. It just give me a different perspective.*

As can be seen from Table 3, participant ranking of resources could indicate their individual learning preferences, with some participants ranking more than one resource as the most useful. One participant said they 'had many choices and were comprehensive' (P5). The rankings could also reflect their level of ICC knowledge and their SA experience up to that point. None of the participants ranked the surveys and blogs. The findings on the tools and resources are presented below according to the layout on each floor.

Teleporting

There were three experiential teleporting activities, with each one providing different learning experiences for participants. Four participants ranked teleporting as the most useful for ICC development in this study, because it provided experiences that were engaging and interactive, not usually possible in real life, or provided experiences such as learning about food and seeing buildings that facilitated discussion with others:

> *Teleport is easy to use, and take me to some places that I cannot go in real life. (P2)*

> *I can go to China easily which I cannot do in the reality. (P5)*

> *Through knowing different food, we can understand people's taste. One day if we go there we can talk to others and use the food topic as a start point. Also, the building is important because we can describe it to others. (P9)*

One participant ranked the first experiential activity the most useful one because it enabled him to meet others, and made him reflect on identity:

> *[T]he shops feels like more reality, and it even better because not only I can purchase clothes, but also I met many other interesting avatars. This makes me curious why avatars are so different. (P2)*

Two participants had contrasting reasons for choosing the second experiential activity which was to teleport to China Towns: for one it was the familiarity of the Chinese environment and the food; for the other it was the learning opportunity from being able compare his own experience of coming from southern China with the unfamiliar northern China.

> *I chose China Towns activity because I can find food and buildings in China Towns. (P9)*

Participant 7, the only participant to complete all the teleporting activities, ranked the third one as the most useful for developing his ICC because of the challenges he faced by having to talk to strangers:

> *The best experiential activity is talking to someone in Second Life, I got the most culture shock in that activity. In the way of developing ICC, this one is helpful. (P7)*

Surveys

Surveys followed each experiential teleporting activity for participants to reflect on their experiences. None of the participants ranked the surveys as useful resources for developing ICC. However, their responses to the surveys provided data on their worldviews and, for some participants, changed assumptions after the experiences, which they could then have shared in the blogs.

The second experiential activity survey on teleporting to two China Towns asked participants to comment on their impressions. Of note are the very varied responses elicited from the Chinese participants and how they contrast with those of the non-Chinese background participants (P5 and P7).

Some comments were descriptive, highlighting positive and negative perspectives of China:

> *China is a country with full of delicious food. (P9)*
>
> *I like the people from China are hardworking and they are culturally rich and friendly. (P5)*
>
> *Most Chinese are extremely self-oriented. They do not care about others even their families.* (P1)
>
> *In China, the value of the people are based on money.* (P2)

In contrast, some comments were more contextualised:

> *China has lots of unique traditions and cultures. Many people more or less accept the concepts that created by their ancestors, like Confucius [sic] thoughts. I think most of Chinese people are very nice and they are sincerely to others. However, some low educational level people are rude. (P3)*
>
> *I think China has a long history and is one of the more powerful countries right now, along with the U.S.A. But I think China also has really bad human rights issues and also pollution. (P7)*

Participants were also asked in the second survey to score their tendency to stereotype on a scale from 1-5 (1 = low tendency to stereotype and 5 = high tendency to stereotype), and where their prior knowledge had come from, and how this prior knowledge had influenced their experience of visiting the China Towns. Six participants scored their stereotyping tendency as 3, and two scored it as 2 and only one participant scored it as 1. Four of the participants reported their knowledge came from school education and/or via newspapers and TV shows, while the other four got their images of China from their friends who come from China and/or from their family. The teleporting experience challenged the assumptions of three participants, one a Chinese, as they felt surprised by their visit to the two China Towns in SL, and realised that their knowledge of China/Chinese had been limited or inaccurate:

> *I was surprised and I had no knowledge of Chinese food and I was very surprised to see that there are actually much more variation than I thought and that not all Chinese eat solely rice or noodles as a staple. In the Philippines we mostly have rice as a staple food so it was surprising to see that people in China can think of noodles as a full proper, regular meal. (P7)*
>
> *I was surprised, because I never been to China and I thought China had no nature views. But I saw beautiful trees and gardens in the second China Town. (P5)*
>
> *I came from southern China, I don't know how northern China looks like. The first China Town refreshed my view of China, and raise my interests to learn more. (P1)*

For the third teleporting activity to two busy places where there are always many other avatars around, participants had been briefed to interact with residents. In the survey following the teleporting, participants

were asked questions about their communication and interactions, such as whether they had approached anyone in order to talk to them, and how they felt about doing so.

Only Participant 7 completed the third experiential activity and answered the survey questions. He stayed in these busy places in SL almost 10 minutes, and felt awkward with the experience of talking to somebody in SL:

When I stand close to somebody I felt awkward, because it was a complete stranger. They did respond to me, actually they came up to me first saying my avatar looks cute. And when I talk to somebody, it was awkward, because I had nothing else to say. I had no topic to talk about or felt comfortable discussing things I want to talk about. (P7)

PPTs and Videos

Three of the six participants who had ranked PPTs and/or videos as the most useful were on study abroad for the first time, and none of them had prior knowledge of the concept of ICC. PPTs were considered useful for their simplicity in conveying information, enhancing cognition, and triggering critical awareness:

Because PPT show the knowledge of Intercultural competence, it also explains the content of videos and quizzes. And the PPT from debriefing will help me think deeply of my culture and value. (P5)

Reading PPT slides are interesting especially I see my character stand in front of the slide screen. It just gave me a different perspective. (P9)

Three considered videos to be fun and an effective way to make information on the concept of ICC accessible:

I rank videos because they have much fun, the voices and animations in videos are attractive. (P3)

Videos are much better ways to get people up to speed on the subject by using image and voices. (P6)

However, one participant ranked videos 3rd and PPTs 4th because PPTs made him dizzy and, while he preferred the videos over PPTs, some of them were too long. Another participant said that some PPTs were 'not that useful'.

Quizzes

Two participants ranked quizzes as the most useful educational resource for facilitating self-awareness:

Quiz is easy to follow and it helps users to understand themselves better. (P2)

Quiz is for self-testing, carrying these questions when experience SL will give you more idea what is going on. (P4)

Blogs

Blogs were included in the design for participants to share and exchange their experiences, perspectives and ICC learning. But, as with the surveys, no participants ranked blogs as the most useful resources for ICC development, because of time limitations.

Suggested changes

In both the questionnaires and interviews, participants were asked for their suggestions for any changes they would like to see made to the ICC Education Campus. Two participants did not make any comments. Other participants provided some useful comments and suggestions to this study. These mainly related to increasing the number of opportunities to engage with different cultures, such as places to teleport to, considering a greater variety of tools for conveying information, and reducing the number of PPTs. There were also concerns about the accessibility of such platforms in some parts of the world, and the importance of keeping this approach to learning an optional resource and not making it compulsory.

> *I hope there will be more games here and other different activities. The suggestions I would make is to have more places to teleport, this platform likes a culture side, if I could experience more cultures that would be better. There are too many words on PPT, more interactive activities also good. (P1)*

> *I think if the creator can build some things that represent different cultures in the building to make it more attractive. (P7)*

> *Personally, I suggest if you could have more other activities, like videos, rather than just read PPTs, that's could be more interesting. (P9)*

> *The change I would make for the design it to add some pictures in the PPT to make it attractive. (P3)*

> *It should be considered that if this platform could be introduced and applied into some teaching purposes. From the technological and websites security sides, if it is an applicable space in some country like China which has a lot of limitations about information circulations. (P6)*

> *If you are using SL as a teaching tool, especially in ICC class, take it as an option not mandatory. ICC class has a great diversity of students, they have different background and study styles. They can choose this tool when they want to. But students need to learn how to navigate SL before them go into the campus. (P8)*

The next chapter reflects on the findings and addresses the third research question on the challenges of developing intercultural resources such as those in the ICC Education Campus.

Chapter Six: Reflection

This study on using SL as a virtual world platform to create resources for the development of ICC has highlighted technology-related issues, as well as design, pedagogical and methodological challenges. At the same time, it has also confirmed the effectiveness of some of the affordances, especially the experiential learning from teleporting, found in studies by Corder and U-Mackey (2015), Diehl and Prins (2008), Gottschalk (2010), and Jarmon et al. (2009).

With the aim being to enable self-study, there were three research questions for this study:

1. What type of educational resource can be created in the virtual world platform SL that facilitates international students learning of ICC?
2. How will users respond to this resource and to what degree can it facilitate the development of ICC?
3. What demands and challenges does the design of this resource present?

Technology-related issues – the Second Life platform

SL was first started in 2003 (Gottschalk, 2010) and in 2019 the platform is looking somewhat dated compared with current games and newer virtual world platforms, and the functionality is inferior. In addition, many of the rich cultural sites have disappeared over the past few years as a result of migration to newer virtual platforms. This reduced the choice and range of cultural locations for experiential learning in the design. Four participants who were gamers expected SL to be a game and this seemed to influence their evaluation of the SL platform itself and the tools used in the design. The poor control system in SL, and the aging graphics with a lack of high definition picture quality and poor colours, were the main factors impeding participants' experience in this design. Of the participants who were unfamiliar with virtual platforms, Participants 4, 5 and 8 felt confused in SL. However, the technology proved to be a complete barrier only to Participant 8, who logged off after only 15 minutes. Previous experience of SA did not seem to mitigate the challenge faced by the participants with no gaming experience, for example, Participant 5 had to have further help from the researcher. Nevertheless, mastering the technology enabled Participant 5 to demonstrate attributes of ICC of resilience and motivation.

Technology-related issues – scripting

Scripting was the most challenging issue when developing the ICC Education Campus in a way that would be interactive and engaging. Second Life uses its own language to script with syntax similar to C and C++. There were many model scripts online, but understanding the syntax and how to use these models when developing an activity took longer than expected. Therefore, due to time constraints and the basic scripting skills of the researcher, there were limitations on the range of tools and activities that could be used in the design of the ICC Education Campus, and this resulted in a reliance on adapting bought builds, and the convenience of PPTs. Some of the tools such as HUDS that had been considered for the ICC Education Campus for their interactive functions were not attempted because of the difficulties of scripting. Also, improving the legibility of the content tools such as PPTs, and adding functions to objects, had similar scripting demands. For example, the

researcher could not script to successfully enlarge the fonts on objects used to help participants select activities. To sum up, as found in other studies, due to the challenges with scripting, it can take more time than expected to develop effective as well as interactive learning resources in a virtual learning environment such as SL (Berns, Gonzalez-Pardo & Camacho, 2013; Davis et al., 2007; Schiller, 2009). Participant suggestions such as making PPTs more attractive, adding interactive activities, games, and cultural artefacts, and providing more locations to teleport to, all reflect the design limitations and challenges discussed above.

Design, pedagogical and methodological challenges

Although there have been studies on SL and ICC, there are no specific studies on developing intercultural resources in a campus setting, especially for self-study. In particular, designing and developing tools and resources to incorporate attitude and critical cultural self-awareness, which are the affective dimensions of ICC, presented challenges throughout the design process. Corder and U-Mackey (2015) used different cultural and social sites that already existed to provide learners with intercultural experiences and used blogs for reflection and feedback to foster development of competences, particularly the affective and critical cultural awareness competences. In addition, their use of SL was part of a course and not self-study. Siegel (2010), who aimed to develop businesspeople's cultural intelligence, only built a conference room and not a campus. Fortunately, some language education sites still exist and they provided examples of different tools useful for developing the competences of cultural knowledge and interaction skills. These included cultural artefacts, HUDS to enable avatars to interact with the artefacts, notecards for instructions, and PPTs for cultural information and quizzes.

In addition, there were decision issues around: 1) which concepts were essential for ICC development bearing in mind the available time and the scope of the study; 2) what places in SL would link which concepts most effectively; 3) how to arrange the activities in a logical order for effective learning and development to take place. Eventually these were decided based on: the researcher's own learning experiences in two intercultural classes during the early stages of this study; reflection on the researcher's own study abroad experience in the UK and NZ; and discussions with and feedback on reflections from the supervisor. It was acknowledged that while the aim of the design was for self-study and to provide choice for learners, choice would be reduced by the need to design the activities in a sequential way, floor by floor, in order to develop understanding of the fundamental introductory ICC concepts. The need to provide more choice to meet the needs of participants with different levels of prior learning was clear from the way the two participants who had taken intercultural papers engaged with the resources and tools. They were already familiar with the introductory ICC content provided in the study, and one only engaged in the teleporting activities and post-teleporting surveys. The other, who logged out after 15 minutes, could not see what more the resources could offer her over face-to-face classes, and this may have reduced motivation to persevere with the technological challenges. With more floors, more creative use of the affordances of SL to convey information instead of a reliance on physical classroom tools like PPT and text, together with a greater choice of activities, it could be possible to cater for different levels of ICC and prior learning, as well as for those with different SA experience and needs.

Effectiveness of the ICC Education Campus design for intercultural development

Bearing in mind the above technology and design challenges and issues, the findings indicate that the design of the ICC Education Campus in SL facilitated intercultural learning and development to some extent for all but one of the nine participants. Their rankings of the tools and resources could also have been influenced by their level of ICC knowledge and their SA experience up to that point. Feedback from participants indicates the effectiveness of the resources for explaining ICC theoretical concepts, with eight participants stating that the tools and resources would be helpful before and during SA. They particularly valued the ability to teleport to different cultural sites before departure and the exposure to cultural artefacts and experiences. They believed that exposure to cultural differences would help reduce culture shock. During SA, visiting cultural sites would mitigate culture shock by enabling individuals to practice interactions and develop skills for real life interactions. This was positive feedback, as preparing students for SA was an aim of this study.

Klašnja-Milićević, Vesin, Ivanović and Budimac (2011) stated that educational resources that match different learning styles and preferences are successful because learners can learn more effectively. Participants indicated different learning preferences when they ranked the tools and activities in the ICC Education Campus. Of note was the ranking by Participant 7. He only ranked one activity, which was teleporting, and as already discussed, this highlights the need for more choices for participants with differing levels of ICC competence and intercultural experience. This participant was already familiar with the concepts explained in the PPTs, videos and quizzes, but had not experienced the teleporting tool in SL. He found the third teleporting activity, in which he was briefed to interact with residents, pushed him out of his comfort zone which he said had been good for his ICC development.

However, the suggestions from participants that there should be more varied ways than PPTs to communicate information indicate that too much use of physical classroom tools such as PPTs and the use of text in the design, was not taking full advantage of the affordances of SL. The environment could have been configured to include a wider range of media as suggested by Ata (2016), to convey information. Greater imaginative and creative use of the affordance would facilitate more active learning. The researcher was aware of the need to be more imaginative and creative, and the issues around demands on time and scripting when developing a design like the ICC Education Campus.

Participants did not rank the post-teleporting experience surveys as useful for their learning, and this is probably a design weakness in that the purpose of the surveys had not been made clear to the participants. In addition, even though the activities that followed the surveys were designed to develop the intercultural concepts highlighted in the surveys, the links do not seem to have been clear enough. Although there were quizzes to test participants' learning, there was no further opportunity to apply the concepts interactively, especially as none of the participants had time to interact in the blogs designed for this purpose. However, many of the answers to the survey questions not only showed the valuable intercultural learning acquired from

the teleporting activities, but also revealed that the surveys themselves were important activities. Through reporting back in the surveys, some participants demonstrated the intercultural skills of comparing and contrasting, and the affective dimension of an attitude of willingness to engage. Having prior knowledge of ICC enabled Participant 7 to understand the activities and to use the theoretical terminology in his answers in the questionnaire, the interview and the post-teleporting surveys. The surveys therefore went some way, if not totally satisfactorily, to providing an alternative to the debriefing that would happen in a face-to-face classroom situation.

Research shows that reflection is necessary to develop the competence of a critical awareness of intercultural learning, especially the affective dimension (Corder et al., 2018). Blogs were included in the design for this purpose and would have been useful in helping participants to evaluate their survey answers and to see the value of the surveys. As L. Lee (2011) pointed out, writing blogs can develop cultural awareness through reflection on similarities and differences in cross-cultural contexts. Unfortunately, none of the participants had the time to stay longer in SL to blog and so did not rank the blogs' usefulness. Also, blogs need to have feedback from others, such as other participants or a teacher (L. Lee, 2011; Jaidev, 2014). Use of artificial intelligence tools might resolve this issue (Price & Flach, 2017). The blogs were therefore not an effective tool within the scope of this design aimed at self-study and in the limited time available (an hour) for participants to fully engage with all the tools and resources.

The feedback on the use of avatars was varied but even the responses that dismissed the significance of choice of avatar alluded to concepts of identity, which supported the finding of Corder and U-Mackey (2015, 2018) that using avatars contributed to increased awareness of identity, which is essential for ICC development. More time and reflection may have produced different responses from participants and facilitated greater awareness through exploring their perspectives on concepts such as 'handsome' and 'pretty' which they used when commenting on their choice of avatar. Finally, participants could not extend their virtual experiences by animating their avatars in the café, and exploring the facilities in the virtual house because of time limitations. Only Participant 5 mentioned in the interview that the campus was very much like New Zealand, as she saw the modified replica of the Auckland Sky Tower.

Chapter Seven: Conclusion

Research into the increasing number of students on SA and international exchange programmes shows that culture shock can be a significant negative factor in determining successful outcomes of the sojourn. Ways of ensuring students have sufficient levels of ICC before their sojourns and supporting its development in-country has been a key focus of SA research. The findings from this study exploring the types of tools and resources for developing ICC using the SL virtual platform for self-study have shown a number of good outcomes from the design, especially for SA. While this study focused on the basic introductory stages in the development of ICC, the findings indicate its potential to be beneficial even for those with prior knowledge. At the same time, there have been several issues and limitations, ranging from technical to design-related and pedagogical matters.

The design of the ICC Education Campus consists of an integration of traditional physical classroom tools and resources. PPTs and videos are used to communicate and explore theoretical concepts, and to carry out surveys and provide quizzes, alongside affordances of SL, such as the use of an avatar and teleporting for experiential learning. The design challenge was creating tools and resources for the affective and critical self-awareness competences. Analysis of the feedback from the nine participants showed that there were tools and resources in the design to meet different learning styles and particular needs of individual participants apart from one who logged off after only 15 minutes. An important finding was the particular effectiveness of teleporting for experiential learning and the post-teleporting surveys for debriefing of the experiential learning. While the traditional tools were a convenient way to develop knowledge competence, the findings highlighted the effectiveness of teleporting for triggering critical self-awareness. The participants were exposed to difference, their assumptions were challenged and they had practice in interacting in different intercultural settings. In addition, although the participants did not comment at all on the post-teleporting surveys, the surveys fostered the skills competence of noticing and comparing, and some participants even demonstrated attitude competence such as willingness to engage. There was no opportunity in the design for debriefing discussions, unlike in the traditional classroom setting, but the post-teleporting surveys seemed to provide an alternative in this self-study design. While there did not seem to be a strong conscious link made by participants between the choice of avatar and identity, the survey questions fostered discussion around the link, and some of the reasons given for the choices that had been made revealed this link.

However, there were limitations in the design which prevented it from using the full affordances of SL, and resulted in a reliance of PPTs and text. In the design process, scripting proved challenging and time-consuming and it became clear that a more interactive design would require more time to design than the constraints of the project permitted, and either more advanced scripting skills or the possibility of working with specialists. In addition, it was disappointing that SL had become dated in both functionality and graphics.

The experience of designing this study, the findings, and the feedback from the participants have generated recommendations for future designs. All the recommendations would require more development time and

advanced scripting skills, as well as more time for participants to engage with the resources. Firstly, there needs to be a greater variety of tools and resources. The affordances of SL challenge conventional learning and teaching approaches, and extend the possibilities for designers and educators to be imaginative and creative. Designers can therefore rely less on conventional physical classroom practices such as PPTs, and develop tools and activities that foster active learning. These could then be relevant in the basic introductory stages in the development of ICC, and also interesting and motivating revision activities for those with prior knowledge. Secondly, providing choice is a really important factor, especially for meeting the needs of students with prior knowledge. The effectiveness of the SL affordance of teleporting, clearly demonstrated in this study, could be optimised without the need for advanced scripting skills. More choices of destinations that could also have specific ICC development briefs, would provide greater opportunities for participants at different stages of ICC development to apply their knowledge and practice skills. Thirdly, the use of tools such as blogs, which ICC research indicates are important tools for the reflection and sharing of experiences needed to develop critical self-awareness, should be considered carefully. In blended learning contexts, they are usually integrated into a course, and peers or teachers can provide feedback. The issue of feedback might be resolved in a self-study design by using advanced tools such as AI. However, sufficient time would be needed to enable individuals to engage with them.

Despite some challenges in the recommendations, the findings from this study support research that indicates the affordances of virtual environments are effective for developing ICC. The most important outcome for this study, and an endorsement for using the SL virtual environment, was that eight of the nine participants thought that the design would be effective for preparing and supporting students before and during their SA. In addition, while this study focused on self-study, it is likely that it would be even more effective in blended learning contexts.

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Appendix A: Questionnaire

Evaluation of activity designs in the virtual platform of Second Life for the development of international students' intercultural competence

Thank you for your participation in this study. Now that you have experienced the activity designs in Second Life, I would like to ask you to complete the questionnaire below. It will include questions relating to your personal background, Second Life experiences and the intercultural activity designs. The data will help me with analysing the design and your intercultural development.

Please write your avatar's name here:

A. Background information

1. What is your nationality?

2. How old are you?

    A. 18-28   B. 29-38   C. 39-50   D. 50-65   E. Over 66

3. Are you: A. Male   B. Female   C. Other

B. Study abroad experiences

4. What is your study abroad experience? (name the country/countries)

5. For how long were you on study abroad?

6. Why did you decide to go on study abroad?

7. What sort of preparation did you have for study abroad?

8. How did you feel during the first few weeks of study abroad? Please provide a brief description.

9. Please list some reasons for this.

10. During your study abroad, who do/did you mainly socialize with?

    A. People from the same country as you

    B. Your classmates

    C. People from the same interest groups as you

    D. Others

11. What type of accommodation do/did you have during your study abroad?

    A. Homestay   B. Flatting   C. Renting

12. What is/was the ethnicity of the people living there?

13. How would you describe yourself now compared with yourself before your study abroad (have you noticed any changes?)

14. Why do you think this is?

C. Second Life experiences

15. Had you ever heard about Second Life before taking part in this study?

    A, Yes   B. No

    If yes, please briefly describe your previous experience in Second Life.

16. What do you think about studying in such a virtual platform?

D. The intercultural activity designs

17. There were different types of activities. Rank the activities according to how you think they contributed to your intercultural understanding and development.

18. Why did you rank them this way? Please explain briefly.

19. How would you rate your experience of using the blog in terms of your intercultural development? (Please include a brief explanation)

20. What changes would you make to the activities?

21. What do you think about having access to Second Life and these activities before going on study abroad?

22. What do you think about having access to Second Life and these activities during study abroad?

23. Please make any other comments you think might be useful for this study.

Appendix B: Indicative interview questions

Project title: Evaluation of activity designs in the virtual platform of Second Life for the development of international students' intercultural competence

Project Supervisor: Deborah Corder

Researcher: Mingjing Ma

Experience using Second Life as a platform

• How would you rate your experience in Second Life (1 not good---- 5 very good)?

• Would you be able to expand on reasons for your rating?

• What influenced your choice of avatar?

Experience of the intercultural learning campus and the activity designs

• What was your impression of the intercultural learning campus in Second Life?

• How did you find the activities?

• How did you find the instructions?

• In what ways could these activities be enhanced?

Intercultural development

• How would you describe your level of intercultural competence/awareness now?

• In terms of your avatar, how much of a part was it in any intercultural learning?

• What do you think about having access to Second Life and these activities before going on study abroad?

• What do you think about having access to Second Life and these activities during study abroad?

General discussion

• Is there anything else you would like to comment on or suggest?

Appendix C: Ethics approval

12 February 2019

Debbie Corder

Faculty of Culture and Society

Dear Debbie

Re Ethics Application: **19/19 Evaluation of activity designs in the virtual platform of Second Life for the development of international students' intercultural competence**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Sub Committee (AUTEC).

Your ethics application has been approved for three years until 11 February 2022.

Standard Conditions of Approval

1. A progress report is due annually on the anniversary of the approval date, using form EA2, which is available online through http://www.aut.ac.nz/research/researchethics.
2. A final report is due at the expiration of the approval period, or, upon completion of project, using form EA3, which is available online through http://www.aut.ac.nz/research/researchethics.
3. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form: http://www.aut.ac.nz/research/researchethics.
4. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
5. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.

Please quote the application number and title on all future correspondence related to this project.

AUTEC grants ethical approval only. If you require management approval for access for your research from another institution or organisation, then you are responsible for obtaining it. You are reminded that it is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard.

For any enquiries, please contact ethics@aut.ac.nz

Yours sincerely,

Kate O'Connor

Executive Manager

Auckland University of Technology Ethics Committee

Cc: sjy3870@autuni.ac.nz