

# Integrating culture in the second language curriculum through a three-dimensional virtual reality environment

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Networked computer technologies have a strong potential for enhancing second language (L2) learning in the modern classroom. Three-Dimensional Virtual Reality Environments (3D VREs), in particular, provide features to support student motivation, socialization and interaction. These include, for example, the ability for L2 learners to present as avatars, build virtual structures and interact with others in conversational modes. In this preliminary qualitative case study, we examine the perception of culture through online exchanges between both Japanese and English learners within the Virtual Babel project. Critical reflections and an agenda for further research conclude our paper.

Keywords: culture and technology, teaching and learning strategies, learning communities

## Introduction

Despite a historical emphasis on grammar and accuracy in second language (L2) curriculum, communicative language teaching approaches in the late 1970s fuelled a strong interest in the dialectical relationship between L2 teaching and target culture teaching (e.g., Byram, 1997; Byram & Risager, 1999; Kramsch, 1998; Pulverness, 2003). Nowadays, without the study of culture, L2 teaching is seen as inaccurate and incomplete (Genc & Bada, 2005).

National Standards for Foreign Language Learning (1999) developed in the United States revamped L2 teaching through the establishment of a series of '5C' targets: Communication, Culture, Connections and Comparison, and Communities. Importantly, the 5C targets have been widely adopted and are used to form the basis of integrating culture into a computer-based L2 curriculum (Champion & Sekiguchi, 2005). In this study, we explore student perceptions of culture amongst 5C targets during a Japanese-English exchange project within a three-dimensional virtual reality environment (3D VRE).

## The international collaborative project

We built the web-based 3D Virtual Reality Environment (VRE) using *Adobe® Atmosphere®* so that student avatars could communicate through text-based chat. Language learners from Australian and Japanese universities participated. In Australia, 16 upper-intermediate students learning Japanese joined the project; from Japan, 36 students learning English participated.

## Project task

In effective L2 environments, task design is paramount (Bygate, Skehan & Swain, 2001; Farmer & Gruba, 2006). In this project, students worked in cross-institutional teams to construct virtual environments regarding entertainment, travel, contemporary society or education. For those interested in Japanese movie directors, for example, they built a cinema that was able to show visual images. Others interested in discussing relationships, for example, a furnished lounge that featured music equipment, pictures, posters and lighting. Student groups met in class once a week for one hour for three months. They were also encouraged to spend time working on their 3D VRE outside of class. To motivate efforts, staff and students voted on an award for the best venue at regular intervals.

## Data collection

From November 2005 to January 2006, data was collected from two introductory technical sessions and ten 60-minute interactive sessions through 80 chat log sessions. Participants also submitted approximately 170 reflective journal entries that described activities and task progress. In addition, screenshots of VRE progress was kept. Sekiguchi maintained an instructor's reflective journal after each session.

## Data analysis

In line with qualitative data methodologists (e.g., Miles & Huberman, 1994; Richards, 2005), we coded data based on the 5C framework. After several review cycles, we chose to focus on three Australian student reflective diary entries to provide a preliminary view of how students perceived the 3D VRE intercultural learning activities. We selected Cliff, Ken and Lilly to represent the overall Australian participant group because these three varied widely in L2 proficiency, gender and motivation.

## Results

How do students perceive various aspects of the 5C framework? In Table 1, we calculated percentages of coded representative student journal entries to show the relative perceptions in areas of the framework.

**Table 1: Representative student perceptions of 5C curriculum areas**

	<b>C5 standards sub categories</b>	<b>Cliff</b>	<b>Ken</b>	<b>Lilly</b>
<b>1.</b>	<b>Communication:</b> Communicate in the language			
<b>1.1</b>	Engage in conversations, provide and obtain information, express feelings and emotions, and exchange opinions	20%	29%	21%
<b>1.2</b>	Understand and interpret written and spoken language on a variety of topics	16%	15%	11%
<b>1.3</b>	Present information, concepts, and ideas to an audience of listeners or readers on a variety of topics	16%	17%	13%
<b>2.</b>	<b>Cultures:</b> Gain knowledge and understanding of the culture			
<b>2.1</b>	Demonstrate an understanding of the relationship between the practices and perspectives of the culture	2%	13%	6%
<b>2.2</b>	Demonstrate an understanding of the relationship between the products and the perspectives of the culture	2%	10%	6%
<b>3.</b>	<b>Connections:</b> Connect with other disciplines and acquire information			
<b>3.1</b>	Reinforce and further their knowledge of other disciplines through the language	0%	0%	7%
<b>3.2</b>	Acquire information and recognize the distinctive viewpoints that are only available through Japanese language and culture	0%	2%	3%
<b>4.</b>	<b>Comparisons:</b> Develop insight into the nature of language and culture			
<b>4.1</b>	Demonstrate understanding of the nature of language through comparison of the language and their own	0%	0%	0%
<b>4.2</b>	Demonstrate understanding of the concept of culture through comparisons of the culture and their own	0%	4%	6%
<b>5.</b>	<b>Communities:</b> Participate in multilingual communities at home and around the world			
<b>5.1</b>	Use the language both within and beyond the school setting	25%	6%	14%
<b>5.2</b>	Show evidence of becoming life-long learners by using the language for personal enjoyment and enrichment	20%	4%	13%

Surprisingly, we found that few student comments related specifically to the notion of 'cultures' (Category 2). Both 'communication' (51%) and 'communities' (28%) figured more prominently. To make sense of this, we speculate that strong references to literature, traditions, and art work make the concept less dynamic and less interactive (known as 'Big C' cultural instruction). Students likely experienced 'culture' through weekly exchanges and interactions between members of differing nationalities (known as 'Little C' cultural instruction) and thus see it as part of effective communication.

### **Standard 1: Communication**

By far, diary entries of representative Australian students focused on how well they communicated with Japanese students. This strong awareness of communication, we think, is the result of both the novelty of the 3D VRE and a desire to test its capabilities. As Cliff notes, many students had lots of “curiosity about the virtual world and what you could do with it.” Students tested again and again their ability to ‘replace’ or even ‘create’ effective interpersonal communication styles in the new environment. Did strategies effective in the carbon world transfer to the digital one?

Lilly observed that dynamic cultural learning came through exchanges about things that “cannot be found in books” including new words, concepts and personal observations. Interpretive communication, or making sense of the language in use, became a hallmark of the project. Instructors often saw students push beyond traditional classroom boundaries as they became ‘cultural facilitators’ between groups.

Presentational communication, learning to speak to many at a time, came alive through negotiations about how to create and decorate the virtual rooms. Ken reflected on how the changes in a room would lead to surprises that in turn would motivate full participation. Presenters, of course, need audiences and must learn to accept and give praise and criticism after concepts are put forward.

### **Standard 2: Cultures**

Differences between the ‘practices’ and ‘products’ of culture were difficult for us to code. Throughout the data set, the specific term ‘culture’ did not appear often – for students, perhaps, the concept of culture rests primarily in ‘Big C’ areas such as literature, music and traditions. An entry from Ken pointed to a traditional view of Japanese arranged marriages. Lilly noted how direct communication with Japanese differed from what she had learned about their culture in textbooks.

### **Standard 3: Connections**

Prior to coding, we thought students using the 3D VRE would make a lot of ‘connections’ beyond those made in a traditional L2 classroom. However, we found few clear examples. Perhaps, as Lilly pointed, students stayed on task and only occasionally ‘drifted off the topic’ and thus did not initiate a great deal of sharing of new information. Though we thought task of constructing a theme-based room was relatively unstructured, perhaps the design itself constrained the students’ willingness to connect with each other.

### **Standard 4: Comparisons**

Comparisons between Australia and Japan did not dominate the student discourse. Differences in L2 abilities, however, came to the fore. Japanese students were better in English than Australian students were in Japanese, but both sides were limited in their L2 proficiency. Importantly, students modified their native language discourse to communicate. For some, this was a first meeting with non-native speaker.

### **Standard 5: Communities**

A sense of community pervaded the data set. Students often reflected about the collaborative efforts required to build a space in the 3D VRE. Unlike traditional L2 lessons, they were actively engaged in a self-directed activity with native speakers. Cliff notes that they ‘built something they could actually use’ through the use of language and technology. Here, language itself was instrumental in the creation of a special ‘reality’. Perhaps partially motivated by the novelty of working within the 3D VRE environment, the sense of co-constructing a theme-based room helped students feel part of a learning community.

## Discussion

Learners showed an awareness of their L2 development as well as an awareness of improved intercultural communication strategies. Students demonstrated efficacy in re-phrasing and adjusting for their counterparts. They were able to utilize multiple strategies to communicate; importantly, their messages were richer, more honest and multi-layered. Throughout the activities, they discussed with a sense of purpose and immediacy. The 3D VRE was novel and provided motivation to work outside set hours.

Task design was successful, and we were pleased to see that students made their own decisions in building virtual spaces. Notably, the purposely ill-defined task caused students to manage conflict, make group decisions and meet imposed deadlines. Here, intercultural training took place through working in small groups on a common project. Students indeed created community that sparked active participation. Nonetheless, despite being ill-defined, the task appeared to constrain the students – that is, ‘construction’ in the 3D VRE limited their freedom to explore new topics, make connections and know each other. Future work could examine how task design affects performances in this interactive environment.

## Suggestions for further research

Here, we have relied on only three Australian students’ perceptions of 5C curriculum. We are keen to analyse much more data from a larger variety of sources and participants. Comparisons across the Australian and Japanese learners may be fruitful, specifically in the areas of cooperation and negotiation.

Mostly, however, we are set now to examine how participation in the Virtual Babel project influences the way learners make use of the L2 in a social context, that is, how language socialization develops in a virtual environment. As Duff (2003) notes, there is little research on how L2 socialization occurs in computer-based learning environments. Further, we need more research regarding how learners work with authentic social discourse within a community of practice (Lave & Wagner, 1991). A longitudinal investigation may show how L2 learning in a 3D VRE can transfer to practices in everyday situations.

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