

## Learning, engagement and virtual worlds

### Virtual worlds pedagogy and learning design

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**Abstract**—This paper aims to explore the research status of task design used in virtual worlds and the student's long-term engagement in the use of virtual worlds. Content analysis is conducted to investigate the common designed language activities in the research area. The results show that role-playing are the most common designed activities and Vygotsky's sociocultural theory was significantly used as the theoretical frameworks among the selected studies. However, only one of the studies examined students' further use of the virtual worlds beyond the experiment assigned time. This short paper might shed light on future exploration about the student's long term engagement in the virtual reality environments.

**Keywords**—task design, virtual worlds, sociocultural theory, content analysis

#### I. INTRODUCTION

As foreign language teachers trying to use Second Life in the classrooms we found some difficulties engaging students in the use of virtual worlds after the assigned activities [1]. This led us to investigate activities that were successfully designed with engagement beyond the in-lab assigned time for it. Therefore, the purpose of this paper is to investigate the research status of activities used in virtual worlds where students find themselves engaged to continue after the initial learning process. For this paper we reviewed the four high quality English language journals in the field of Computer Assisted Language Learning (CALL) for analysis, including *CALICO*, *Language Learning & Technology*, *ReCALL*, and *Computer Assisted Language Learning* [6]. Two research questions addressed by this paper include:

- 1) What kind of language learning activities have been successfully designed for virtual worlds?
- 2) What are the purposes of these designed activities?

#### II. METHOD

Content Analysis was conducted to find activities used in virtual worlds that engage students, possibly beyond the in-class assigned time. A total of 56 articles were reviewed from 2009 to 2013, which met the original search criteria by using keywords, such as task design, virtual worlds-reality, pedagogy, activity design, and instruction. A total of 20 articles were selected after a second cut, based on the results

given by the authors, with a total of 22 activities, since one of the articles included three activities for their research.

#### III. RESULTS

As it can be seen in table 1, there has been several studies that successfully engaged students in the use of virtual worlds. Most of the research studies used the Vygotsky's [7] sociocultural theory as their theoretical framework to promote effective communicative skills. The most common employed activity was role-playing, used in 11 different empirical studies aiming to promote meaningful collaboration, purposeful interaction, and authentic learning. The activity such as cultural understanding has been used four times, where students can explore exotic locations and cultures, reflect upon intercultural similarities and differences and possibly interact with native speakers [3] [5] or on the other hand were used following Kolb's [2] experiential learning theory, to promote critical thinking and meaning-making.

Information gap, opinion-exchange and architecture learning were used twice each. It is important to note here that these activities were closely related to Prabhu's [4] task-based language learning (TBLL) instruction emphasizing on the use of authentic and meaningful tasks using the target language, such as visiting an airport and buying food in a market. Jigsaw activities were also conducted in one study, with the exception of architecture learning, which used negotiation of meaning and correct feedback, all other five activities used the sociocultural theory as their theoretical foundation, either to facilitate the development of communicative competence or to elicit meaningful collaboration and purposeful interaction. Although all the studies reported positive motivation and engagement in student's learning, only one of the research mentioned the student continuity in the use of the virtual worlds after the in-time class.

#### IV. DISCUSSION & CONCLUSIONS:

The analysis of the research conducted on virtual worlds did reveal that a number of different activities were successfully designed to engage the students in the use of

TABLE I. DESIGNED ACTIVITIES IN EMPIRICAL STUDIES

<i>Activity Name</i>	<i>Articles</i>	<i>Purpose of the activity</i>	<i>Theoretical foundation</i>	<i>Authors</i>
<b>Role-playing</b>	11	To promote problem-solving, critical thinking, meaningful collaboration, authentic learning, and learner autonomy	Sociocultural theory; ecological perspectives	Collentine (2011); Cornillie, Clarebout & Desmet (2011); Deutschmann, Panichi & Molka-Danielsen (2009); Ho, Rappa & Chee (2009); Liang (2011); O'Brien, Levy, & Orich (2009); Peterson (2012); Rama, Black, Es & Warschauer (2012); Ryu (2013); Thome, Fischer & Lu (2012); Zheng, Newgarden & Young (2012)
<b>Cultural-awareness/intelligence</b>	4	To explore exotic locations and cultures; reflect upon intercultural similarities and differences; promote immersive learning; interact with native speakers	Constructivist theory; Experiential learning theory	Canto et al. (2013); Jauregi, Canto, Graaff, Koenraad & Moonen (2011); Shih (2013); Wehner, Gump & Downey (2011)
<b>Information gap</b>	2	To elicit meaningful collaboration and purposeful interaction	Sociocultural theory	Peterson (2009); Wigham & Chanierb (2013b)
<b>Opinion-exchange</b>	2	To elicit meaningful collaboration and purposeful interaction	Sociocultural theory	Peterson (2009); Peterson (2010)
<b>Architecture learning</b>	2	To promote interaction and collaboration	Negotiation of meaning; Correct Feedback	Wigham & Chanierb (2013a); Wigham & Chanierb (2013b)
<b>Jigsaw</b>	1	To facilitate the development of communicative competence	Sociocultural theory	Peterson (2009)

virtual worlds, showing how important these platforms (e.g., Second Life, World of Warcraft, and Active Worlds) can be for activities such as role-playing, opinion exchange, and cultural understanding. This also points out that most of the language learning activities used in virtual worlds use some sort of the communicative approach. However, we would like to point out of the 20 studies that met this criteria, only one specifically mentions the students' further use of the virtual worlds beyond the in-class research time. Engagement and self-directed learning in these environments could happen, as it can be seen, but the ultimate goal in education is to promote among these students to continue learning with the provided tools outside of the class and after the time of the research observation. As an example, role-playing could happen with or without the use of virtual worlds. If we take into account that all users were placed in one room, which might be ideal for research purposes, we need to notice that it is not a "real" virtual world experience. In this example the activity designed could promote, for example, how to find native speakers to interact with, not limiting the interactions to their own classmates, which is what communication is for; this might help them engage in the use of these tools. To do so, we invite researchers, curriculum designers and educators to design activities that promote and support the use of these tools during and after class. To complete the circle, researchers should include longitudinal research to find out any relevant data that could support the idea of engagement during and after the research is done. From the experience in the classroom, this idea cannot happen if only the researchers and educators understand this ultimate goal of education, but also the students need to participate and embrace the idea, seeing in

these activities beyond the very idea that learning is about the materials presented, and continue past this point.

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