Teaching through Multi-User Virtual Environments:

Applying Dynamic Elements to the Modern Classroom

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Chapter 15
Task Design for Language Learning in an Embodied Environment

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ABSTRACT

3D voice-enabled MUVEs are increasingly being used in education and in the area of language learning, and teaching is no exception. In this chapter, the authors will examine the affordances that MUVEs offer in this field, starting with a brief overview of the various theoretical frameworks underpinning successful teaching and learning of languages in general and how they apply to MUVEs. The authors then highlight a range of issues arising from a team's extensive practical experience in material design in the embodied environment of Second Life. These considerations include many possible avenues for follow up by researchers. Finally, they provide some examples of task design to bring these issues into focus.

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INTRODUCTION: CONTEXTUALISATION, OBJECTIVES AND OVERVIEW

Achieving a degree of proficiency in at least one of English, Mandarin or Spanish as a second language is a prerequisite for most educational policy systems in the 21st century. Indeed, competence in English is considered by many governments around the world to rank alongside ICT proficiency as a universal life skill at the heart of primary and secondary education (Graddol, 2006). It is equally widely accepted that the most advantageous way of learning a language is immersion–to do so living and practicing with native speakers in the target language community. Clearly, this option is only open to a minority of people who find themselves at a suitable life stage and with the means to do so. Virtual worlds however, especially if voice enabled, are particularly suited to language learning and offer the potential for second language study without the need for world travel.

MUVEs provide a radically new context for the language classroom, creating opportunities to adapt and customize the educational environment as never before–and creating a number of methodological questions as well. The pedagogy of second language acquisition in formal education depends heavily on the role of the participants, the flexibility of the environment and the overall resources available. Task-based learning, in combination with competency guidelines, has proven to be an effective approach for teaching in virtual worlds, particularly in *Second Life* (www.secondlife.com). Practice, though, indicates a need for re-evaluation of existing assumptions of classroom management, skills development, participation and the use of materials, to name a few.

In this chapter, we will discuss these concerns as impacted by embodiment on task design and contrast this to real life learning situations. Languagelab.com, a private company operating within Second Life, built a virtual city to support language learning in 2005 and, over several years, a community of educators worked on a variety of projects exploring the potential of teaching English and Spanish formally and informally in a MUVE. The teaching and learning experiences which form the basis of this chapter can thus be considered a reflection on praxis, referring to a series of ongoing case studies within the Languagelab.com environment.

The objectives set in this chapter are two-fold:

- To provide an overview of the various theoretical frameworks underpinning successful teaching and learning of languages in a MUVE highlighting avenues for possible follow up by researchers
- To provide the basis of good practice in the field of language learning for practitioners to implement and build on.

BACKGROUND: BRIEF OVERVIEW OF SECOND LANGUAGE ACQUISITION AND ITS RELATION TO PEDAGOGY

Second Language Acquisition (SLA) refers to the study of how second and foreign languages are acquired. SLA is closely related to language pedagogy and its findings are relevant to the field of foreign language teaching. In order to better understand the relevance of SLA to the field of foreign language education, an overview of the main concerns of SLA is provided.

What Constitutes Knowledge of Language?

The aim of language study is to achieve communicative competence (Canale & Swaine, 1980), which refers to the ability to use language appropriately for the communication context. According to Canale & Swaine (1980), in order for a speaker to be communicatively competent they have to master four components: grammatical,

sociolinguistic, strategic and discourse competence–across receptive and productive skill areas. The concept of communicative competence has led to communicative approaches in language teaching whose primary focus is not on language structures but on language functions, that is, how to communicate in specific, real communicative situations.

How is Knowledge of Language Acquired?

From the socio-cognitive perspective, the focus on language learning is on having students engage in authentic social discourse and on knowing how to interact appropriately in specific discourse situations. Thus, interaction appears to have an important role for language learning. Many researchers have demonstrated that oral interaction with authentic audiences, which generates negotiation of meaning, is beneficial for language learning and language acquisition (Vygotsky, 1978; Cazden, 1988; Long, 1983). Negotiation of meaning, in combination with a series of purposeful activities scaffolding the learner from basic communicative utterances to understanding and active use of linguistically and pragmatically complex language (Long, 1985) will lead the learner to achieving communicative competence. This process occurs first at a social level through social interaction and co-construction of knowledge and then takes place at an individual level (Vygotsky, 1978).

How is Knowledge of Language Put to Use?

How language is acquired affects how it should be taught or learned. MUVEs have to be seen as social spaces which foster interaction and the most effective MUVEs for learning are those which support different kinds of communication. This social interaction should take place within the context of meaningful activities which foster the co-construction of knowledge and which call for the student to take an active role.

One of the problems in language learning is the separation that many people make between *learning* and *using* a foreign language (our italics) (Little, 1996). The communicative approach, however, is based on the assumption that successful language learning depends in part on language use and not only on knowledge of linguistic structures. Thus, language use should be integrated with language learning.

Language is most commonly put to use for social, informative and transactional purposes, where the user is able to recognize, produce and innovate structures in appropriate situations to achieve the desired result. Therefore, for a successful language learning experience, students should be exposed to varied input from their interaction with real audiences while engaging in authentic tasks which will promote negotiation of meaning.

The essence of these beliefs is captured the following frameworks:

- The Common European Framework of Reference for Languages: Learning, Teaching, Assessment -CEFR–which sets clear standards to be attained at successive stages of learning and for evaluating outcomes in an internationally comparable manner.
- The Standards for Foreign Language Learning in the 21st Century (1999)–"The Five Cs."–which describe the "what" (content) of world languages learning and form the core of standards-based instruction in the world languages classroom.
- The Canadian Language Benchmarks (2009)

MUVES AND LEARNING

This section discusses how MUVEs have developed in their application to language learning

and how their latest stage of development–highly flexible, interactive, voice-enabled immersive spaces–provides enormous potential for this field. It considers the affordances of MUVEs relating this to how the learner is *embodied* in a MUVE and specific benefits of this for language learning.

From CALL to MUVEs

CALL to MOOs and MUDs

Within the field of Computer Assisted Language Learning (CALL), first coined in the 1960's, the most relevant precedent for MUVEs are the uses of asynchronous, text-based computer-mediated communications (CMC) within what Warschauer (1996) called Integrative CALL (Multimedia and Internet).

There are many studies on the successful use of this type of technology for language learning from mid 90's onwards. Shield, Weininger, and Davies (1999) report examples of email tandem exchanges, bulletin boards and discussion lists as *tools to promote reflective aspects of language learning.*

Text MOOs & MUDS

From mid 90's onwards teachers began to make use of Multiple-User Domain, Object Oriented (MOO). MOOs were text-based virtual reality environment where users interacted in real time using only text. They offered advantages over other text-based synchronous chat programs as they allowed participants to describe themselves. This, as Donaldson and Kötter (1999) point out, formed the basis of the personality which participants assume in any discussion and, therefore, enabled relationships. Interactions could take place within personal spaces created by users. 'Entering' a text-based room could nonetheless have a visual impact through the available description of the room. CALL research acknowledges the strengths of the medium: pair work, focus on form, negotiation of meaning, task-based learning (Beauvois, 1992; Blake, 2005).

Chun (1994) found that language learners who used synchronous text-chat between scheduled face-to-face sessions became more confident about speaking the target language.

They further outlined the learning benefits under three headings–metacognitive, cognitive and socialisation / empowerment, which are still relevant today within the synchronous text chat capabilities of MUVEs.

Metacognitive Learning Strategies

- Activity may be recorded or "logged" to be accessed later and encouraging reflection
- Users can finish a comment/post without being interrupted.
- Scrolling back through text on the screen allows learners are able to consider their responses, even in a synchronous environment.
- Engaging in multi-threaded discussions also lends itself to using metacognitive strategies in real-time: this would be impossible in a face-to-face encounter.
- Learners can use research tools to find information pertinent to a discussion without interrupting the discourse.

Cognitive Strategies

Text-based discussions tend to be slower than in face-to-face but can be more reflective even though they require responses in real time. Real time exchanges provide learners with immediate feedback on their performance in L2: if the effect of the communication is not what was intended, then the communication was unsuccessful, and the learner will have the opportunity to rephrase that communication. Further, keeping a log of the exchange allows the learner to return to that exchange later and to reflect on why it was/was not a successful communicative event.

Socialisation and Empowerment

Warschauer, Turbee & Roberts (1996) found that much of the appeal of MOO lies in its social nature and the "endless variety of human response". Among important factors are:

- Its relative anonymity.
- Learners with disabilities are empowered by virtue of the anonymous environment including visually impaired learners (using screen readers), aurally impaired learners. Pronunciation issues and reluctance to speak are greatly eased in a text-based environment.
- The environment is persistent so 'always on' and users have a reasonable chance of happening on other users to interact with depending on the popularity of the environment.
- Socialisation and empowerment of learners

Graphic Based Virtual Worlds

Active Worlds, first made available to the public in 1996, is an internet-based desktop 3D virtual reality platform designed for synchronous communication (Wikipedia, 2009). Users are 'present' represented by an 'avatar'. Communication is via various forms of synchronous text-based chat and some visual gestures. Users can walk, run, fly and teleport and are able to create content. *Active Worlds* can link to virtual learning environments such as Blackboard. Campbell (2003) described a course for Japanese learners of English using *Active Worlds*. The differentiation between the text-based environments outlined in the previous section and the potential of virtual worlds can be seen in some of the course objectives:

- Foster collaboration through positive interdependence and cooperative goal structures
- Encourage co-construction of knowledge through an interactive virtual environment
- Raise cultural awareness by working with foreign partners

There is a much greater sense of presence through increased socialisation, increased personalisation of appearance and immediately visible co-creation.

Graphic Based Virtual Worlds with Voice

From a language learning perspective, the virtual world of Second Life added two key elements to what has already been said about Active Worlds: a much more sophisticated and flexible design capability and synchronous voice.

The ability to design and build accurately and to scale makes it possible to construct an environment similar in scope to a real small town and, therefore, allows for the recreation of realistic real life language usage scenarios.

However, it should be very clear that this is not a case of digital ciphers i.e. avatars, exploring a virtual landscape in a neutral and frictionless manner. Even in the MOOs and MUDs there was a sense of identity which increased with the first major virtual world, *Active Worlds*.

In fact Yee et al. (2007) conducted a study in Second Life that confirmed that social norms of gender, interpersonal distance (IPD), and eye gaze all transfer into virtual environments even though the modality of movement is entirely different from Real Life. Friedman, Steed and Slater (2007) studied spatial social behaviour in SL and found that SL users display distinct spatial behaviour when interacting with other users and, when approached by an automated avatar, tended to respond by moving their avatar, further indicating the significance of proxemics in SL.

Cassell et al. (2001) describe the concept of *embodiment* and avatars as *embodied agents*. *Embodiment* is a key feature in MUVEs from the point of view of supporting educational objectives. The addition of voice brings two important

benefits. It further strengthens the investment of self in a digital representation but, crucially, also provides the key element missing from 'e-learning' for language learning.

In contrast to traditional e-learning and VoIP (Voice over IP) interactions, where the user is generally focused on documents or text, or is limited to audio, MUVE users see their avatar talking with their own voice to other avatars within a particular setting. The input received by users is inextricably connected to their own projected identity, the interpretation of others' identities, the manipulation of relationships through paralanguage, described by Pennycook (1985) as proxemics–the role of spatial arrangements and variations in distances, kinesics–body movements, gestures, and facial expression, chronemics–the use of time in nonverbal communication, and paraverbal features–stress, intonation and purposeful silence.

Embodiment is especially useful in the context of language-teaching as communication is strongly social in nature (Gee, 2001; Atkinson, 2002). Interactions using an avatar offer a way of parsing incoming information, assigning different messages to the participants present. The mind attempts this with or without visual support. However, without avatars, the aural load is high, requiring the user to distinguish voices of potentially unknown participants in addition to attaining basic comprehension in their second language.

The use of an easily customizable avatar also provides an outlet for students who may not feel that their language skills adequately represent their social identity: a problem not commonly addressed in the real life classroom.

Summarising, we now have highly customisable and, potentially, very realistic virtual environment. Users engage with this environment through constructing a projected and personalised identity and many existing social norms apply in how they interact with others. This article does not attempt to define what is and is not included in Cassel's 'embodiment'. However, as practitioners, we note there is both a virtual platform and interpersonal voice-enabled space of sufficient tangibility to transfer many of our real life skills in facilitating teaching and learning. What is missing is a framework which maps language related competencies onto the real life situations which can be recreated in a virtual world. That framework for us is the *Common European Framework of Reference (CEFR)*. – See previous section Background: How is knowledge of language put to use?

Competencies and Their Relationship to Spaces / Situations

The CEFR can be brought to life in the *Second Life* environment. A careful analysis of the competencies which the CEFR outlines for the different skills- speaking, listening, writing, reading, and grammar- lends itself to the development of task-ready themes. For lower levels, themes revolve around basic transactional language such as making a purchase or making travel arrangements, or successfully navigating a restaurant order. By considering the linguistic skills and cultural knowledge required for these interactions, tasks can be staged to culminate in confidence-building simulations. For more advanced levels, planning in is less straightforward but nonetheless offers great potential. CEF competencies at this level, in particular, describe a more academically-prepared and/or business savvy learner, with significant emphasis on social language use.

The CEFR is not the only option for a competency-based framework. The Canadian Language Benchmarks also have potential to be mapped against a 3D environment. We would not, however, recommend the American Council on the Teaching of Foreign Languages (ACTFL, 2009) as an adequate guideline for producing SL tasks, due to the limited nature of its descriptors.

MAIN FOCUS OF THE CHAPTER

Language Learning and Teaching in MUVEs

Egbert, Chao & Hanson-Smith (1999) point out that educators do not need a punctual theory on CALL to understand the role of technology in the classroom; a clear theory on the acquisition of second languages and its implications for the learning atmosphere would complete this objective. In this way, the conditions that seem to optimize the learning of a language (Egbert, Chao & Hanson-Smith, 1999) according to the investigations carried out in the area of SLA and specifically those related with the social-cognitive perspective, are also adequate to create a framework for teaching languages in MUVEs.

In this section, concept of the language classroom from a face-to-face and a MUVE point of view will be looked at. Also, the features that MUVEs bring to the language classroom that maximize language learning will be presented. Finally, the advantages and disadvantages in remaining within a real world The Communicative Classroom in face-to-face and MUVE contexts

The 'classroom' is an important locus for standard language learning. In the context of a MUVE, there is a strong case for the classroom to lose its walls and, some would question any effort to recreate a classroom setting virtually. We acknowledge there is a very broad debate here regarding formal and informal learning and the potential for a completely learner-centred experience. Beetham & Sharpe acknowledge that "pedagogy needs to be re-done as well as rethought" (2007) and, while learning takes precedence over teaching, they also revindicate the importance of guiding others to learn. This section will look at some of the skill and creativity involved in harnessing the learning potential of a MUVE within the paradigm of a classroom.

Interaction with others in the target language is important for successful language acquisition (Vygotsky, 1978; Long, 1983) and, therefore, it should have a fundamental place in the language classroom. In modern language teaching, group work and pair work are the cornerstones of communicative activities. Often coming after a period of explanation or exploration of a language element (or as part of these), activities encourage students to practise what they have learned in an approach referred as Situational Language. Students might be asked to use what they learned in a role-play or discussion. Hopefully, this experience will be more meaningful and this will allow them to learn more language as learning occurs during interaction through negotiation of meaning (Long, 1983).

In MUVEs these activities are equally and in fact more easily possible. Students, who are represented by their avatars, can work as groups or pairs very simply and only need to move their avatars and not themselves, saving time as if they were in a video game. More importantly, however, is that in a MUVE, activities that use communication and interaction can be more believable and more interactive because of the MUVE's immersiveness.

In the language programmes examined in this chapter, most classes take place outside the classroom. However, they usually have a 'classroom element' because the concept of 'classroom' is still there: a group of students gather in the same place with a teacher. The participants have a common aim: to learn the target language. Additionally the teacher can pull out of their inventory a whiteboard or any other classroom resource to aid explanation and contextualisation. There is a shared concept of classroom in MUVEs and face-to-face contexts. MUVEs, however, offer something else: the teacher can take their students anywhere and take advantage of the immersive environment; the classroom is not confined to the four walls of a real life classroom.

Use of Environment / Setting

The environment plays an important role in the language learning context. In the first place, the ability to move around and explore the space is very useful. A high level of correspondence between a virtual setting and a known real life reality will often remain superficial in our experience unless students participate actively according to rules of the setting. In other words, the setting itself must become embodied. This is very apparent in the activities of shopping for clothes at the clothes store, followed by a fashion show activity, for example, in the Spanish course. Likewise, the ability to enter into the car rental agency in the English task and perhaps test drive some vehicles reinforces the degree of engagement with the environment. An extension of the previous point is the ability to leave, circumnavigate and return to the space. Students reported that the relevance of hotel based learning task was reinforced by 'leaving' the hotel and then reentering through the reception and greeting the 'receptionist'. In the first sample lesson, students "going back" to the clothes shop to return an item was another example of reinforcing activity. Not only can students interact with the environment through exploration, some MUVEs are dynamic environments, which means that they can be altered by their participants. This alteration of the virtual world, is not necessarily carried out by the teacher, students can be given the power to create and modify the world.

When looking at the impact of an environment on task design there are several aspects we need to examine: the role of the environment as input, persistent vs. temporary environment, and customisable environment.

The Role of the Environment as Input

From the outset it should be clear that the design possibilities inherent in a MUVE do not guarantee that the MUVE will support the task efficiently even if imaginative and thematically linked to the task in question. In order for a MUVE setting to have task validity the following factors need to be kept in mind (Sweeney, 2009):

- The setting must have apparent relevance to task: i.e. have some face validity corresponding with the apparent activity to be undertaken.
- The setting must have persistent relevance to the task. It is not enough to situate an activity in a particular context as a backdrop and then make no further use of the surroundings: treating it, in effect, as a themed classroom.
- The task design must be clear and relevant so the rationale for situating the activity is this context remains consistent as the activity develops.
- The setting should either map on to general conceptual / cultural / social frameworks of the learners: e.g. a business context should resemble a meeting room they can relate to in order for them to approach the task with a mindset which will allow the real life empathy required to get benefit from an activity OR
- By agreement there is an element of fantasy and the unexpected–not deliberately disorientating–to stimulate creativity and free up students to react in ways they would not ordinarily.
- Persistent vs. temporary environment

All of the environments described above and for the purposes of this project were persistent. The programme activities took place within a virtual urban geography which remained there irrespective of whether it was being actively used. The alternative is use of a *Holodeck*[1] where a specific pre-built location is available on demand to support a task. The use of holodecks is relatively common with language educators in *Second Life* due to very real cost of land and therefore limited space available to them.

The projects described in this chapter were not subject to this constraint, taking place in a persistent virtual city (English) or small town (Spanish). (Figure 1)

This has several affordances. The immediate context for any task was itself contextualised (i.e. the hotel reception desk is located within an actual hotel, which, in turn, is on landscaped grounds with external facilities. Although *Second Life*'s teleport facility is available for group and individual navigation between locations, the potential of travelling from point A to point B is useful in tasks such as walking tours and bus rides which require an environment to be described or interpreted. At lower levels, as is the case with the Spanish course, it underpins course elements such as giving directions and learning the names of town features.

Additionally, students have the possibility of re-visiting the scenario where the last task took place and revising the lesson content. However, temporary environments i.e. *Holodecks* have other advantages such as the potential to have a greater variety of immersive situations on tap.

Customisable

Whether persistent or temporary, environments are nonetheless customisable. Any stage of day / night, seasons, weather conditions can all be varied to provide atmospheric and functional variants. A townscape may be decorated to reflect a national or cultural celebration such as St. Patrick's Day[2] or Halloween.

Communication and Interaction

The traditional classroom is subject to forced communication where a textbook or teacher provides structure and guidance. Interaction is also limited by the shared experiences of the participants in the classroom, who in many cases

Figure 1. Spanish town: Ciudad Bonita. (© 2009, Languagelab.com. Used with permission.)

come from the same country. There is currently no obvious correspondence between textbook approaches to programme design and the affordances of a virtual environment. In MUVEs, the input generally comes from the environment itself, the educational objects, the teacher and the other participants. In a MUVE context there is a lot more room for sharing experiences in an international, multicultural and multilingual classroom. Furthermore, the language experience is not confined to the teacher and classmates; the learner has the possibility of interacting with other users of the MUVE. Also, communication in MUVEs is multimodal: there is a wide range of communication tools with varying suitability for different types of tasks or communications needs (local chat, IMs- Instant Messages, voice call, both for pair and group activities), hypertext, visuals, audio. Students can interact with other avatars, with objects in the virtual environment and with the virtual environment itself.

When setting pair and group activities we need to choose the tool that best suits our purposes from the range available. Monitoring students when working in groups or pairs is in fact easier in SL than in real life because it is possible to individually adjust the volume of other participants. If the activity involves a written product, students can use private IM among their group (and the teacher) or notecards.

Varied Input

MUVEs, more so than the traditional classroom, can provide different sources of input: teachers, peers, native and non native speakers who are not learners, the environment itself, interactive educational objects and even web-based resources (videos, podcasts, etc.). This variety of input allows the students to be exposed to different kinds of accents and register which should stimulate them to use the language in creative ways in order to convey their meanings. That is, students will need to engage in negotiation of meaning, one of the crucial elements for language acquisition.

Language Learning as a Social Event

Any interaction where language is used to convey meaning can be considered a social event. Classroom language, however, is not always natural and, arguably, does not lead to real interaction. Classroom language may be restricted to predictable questions and answers (teacher-student), thus, there is no negotiation of meaning. MUVEs are especially suited to put into practice the concept that learning occurs through social interaction.

In a MUVE, social events are continuously being created and they are only limited by the creator's imagination. Thus, students can take part in real events such as quiz shows, treasure hunts, concerts, etc. These social events do not only occur in informal learning contexts as students can attend a language class at a restaurant to learn how to order food, or go shopping to learn how to buy clothes, etc. Students are learning through interacting with others in situations similar to the ones they will encounter in real life when visiting a country where the target language is spoken.

Decentralized Role of Teachers

MUVEs are good arenas for task-based learning and other student-centred approaches because of what the environment has to offer (it is immersive and dynamic). Saying that the teacher has a decentralised role does not mean that the teacher has a passive role. However, it does mean that the students gain a central role in the learning process and the teacher is there to monitor the process. Students could be asked to write newspaper articles interviewing native speakers inside the MUVE or discuss the virtual environment. They could be asked to decorate and style a restaurant as a group or even take part in a soap opera. The teacher as a facilitator may steer learners in different directions

but the content would be generated by the students. However, the teacher will sometimes need to take on the role of technical helper and make sound checks with their students at the beginning of the class to ensure that nobody has sound problems. Some other issues related to teachers and their role in the learning/teaching contexts concern the concepts of team teaching and teacher training.

Team Teaching

Team-teaching (teacher plus helper) is a feature deployed uniquely for the beginner courses to aid the main teacher who can only speak in the target language. Team teaching is used to model pronunciation, and how activities are done, as well as to provide help - including technical help - to individual students. It is not strange for students to experience technical issues when coming to class and it is important that they find a supportive environment as well as some assistance.

Teacher Training

Teachers have two learning curves to overcome. The first curve consists in becoming familiar with the MUVE environment and learning how to move around it. The second curve relates to MUVE pedagogy. The latter largely consists of a process of realisation that much real life best practice has transfer value into the new context. A 'good teacher' in a MUVE is first and foremost a 'good teacher' in real life who adapts to the constraints and affordances of a MUVE. The adjustment time that instructors need to feel confident does need to be borne in mind. The learning curve is considerably easier through teacher training courses as, during the training course, trainees will be trained in those MUVE skills of benefit to teaching (such as learning how to build 3D-objects) as well as exploring insights on how to teach in this environment.

Classroom Management

In this environment, classroom management plays a vital role as it is a new environment both for teachers and for learners. Thus, the teacher should scaffold student work, giving them the overall purpose for each activity, with detailed instructions and examples and making sure that they have understood. Making comprehension checks can be challenge because of the lack of or limited range of facial gestures, haptics and body language so the teacher has to look for new techniques to check comprehension. Another important issue that teachers have to deal with are disruptions in class which can be of different nature. The first disruptive element is related to sound if students don't have their volume well adjusted or if they don't use the right headset. Sound problems may generate echoes (not only for the person who has the problem but also for the rest of the participants), background noises (barking dogs, crying babies, ringing telephones), or electronic static. Another disruptive element can be that of avatars using uncommon shapes or costumes (demon or monster avatars - use of weapons or inappropriate clothes). Finally, because of the anonymity of a MUVE, students may come in late, disappear in the middle of the class, or have 'phantom avatars' in class (the teacher may physically see the avatar but in fact the student is away from the keyboard). It is important that the teacher establishes criteria for dealing with these problems before they occur and sets rules for adequate behaviour to avoid class disruption.

Simulations and Role Play for Language Learning

Long held as a critical activity which gives students sociocultural practice in the target language that they may need to access in the real world, its (i.e. roleplays) drawback has always been the "unnatural situation of the classroom" (Livingstone 1983). The enormous amount of suspended

disbelief required by students to engage in and benefit from role play, combined with the inordinate amount of time and preparation it takes to run a successful role play in the traditional classroom (time which is becoming more and more precious as contact hours dwindle), have heretofore hindered its effectiveness as a tool. MUVEs, however, provide an adequate environment to have students perform and experience the sociocultural roles and simulations outside of the traditional classroom context while allowing for proper assessment and guidance.

Key in simulations is that students experience something within a MUVE using the target language. Exploring virtual environments (or simulations such as the travel agency), sharing these experiences through "show and tell" (think fashion show); participating in events, etc. MUVEs offer an infinite variety of potential scenarios and contexts which work to the benefit of both creativity and realism. Devising scenarios which engage learners through their realism and relevance may, ironically, be more possible in a virtual world than in real life. In fact, by entering a MUVE, students are already taking on a role. This affords the possibility of setting tasks which are more adventurous. For example, within a virtual hotel, students are not restricted to simulating the most likely scenarios. They could also be set the task of dealing with large infestation of rodents or a collapsing roof! Learners can change their appearance, their clothes or even their form and which can lead to greater levels of meaningful language transaction through role-play.

Against this it should be noted we found a tension between some of the affordances of SL and designing tasks grounded in reality. Firstly, in the hotel scenario, to maximise interaction opportunities it may seem very useful to have some students adopt the role of someone working in the hotel. Whatever proportion of students would actually require English as a hotel guest however it is far less likely that any of them would ever exercise a role in hotel management. Nonetheless we felt this was an acceptable role trade-off for a minority within an overall probable scenario for guests.

Secondly, the potential for creating exaggerated or fantastical situations - very feasible in SL - needed to be offset against the difficulty in setting these up or the degree of removal from reality. Though on one level less imaginative, students often appreciated very straightforward situations such as checking into a hotel. Many reported feeling that in this type of scenario, they were having a genuine, life-like 'experience' which made them nervous and raised a real prospect of failure - an important characteristic of real life immersive learning. Real immersion is rarely comfortable after all. Finally, however well constructed the situation in terms of environment and task, it could be too far removed from either students' real life experience or their expectations. An example of this was a carefully constructed "business meeting" lesson (set in a conference room) which didn't work well initially as students failed to adopt the "roles" and hence didn't use language typical of a RL business meeting. They still saw themselves as students and treated one another thus accordingly. This enabled us to see that surroundings, physical or virtual, don't make "reality" without the right development, including social identity.

Overall though, the way that this multi-user virtual environment (MUVE) can deliver an authentic environment in which a role-play can take place at a distance is nothing short of transformative. Only being immersed directly in the target culture could surpass this virtual immersion into an environment in which a student actually performs the sociolinguistic functions they would be required to perform in the target culture / destination.

Assessment

Our approach to assessment and evaluation bears a strong correlation with our approach to teaching; just as we consider what is possible within a MUVE to have more in common with good prac-

tice face-to-face teaching than a traditional concept of either computer assisted language learning (CALL) or mainly asynchronous online-learning using a Virtual Learning Environment, so the type of student assessment is also derived from good face to face practice. It consisted of regular teacher monitoring of performance in-class, recording of work set for outside class with individual student interviews where necessary. It is perfectly feasible to set written tasks for completion within a time limit although we did not use this instrument. As products in development, clearly there was also systematically collated feedback from students (individual interview, focus group and web questionnaire) about their overall satisfaction which very often brought up valuable learning issues.

Thus, assessment here differs from what is normally referred to as computer based testing. Though some of the tools associated with this area such as web based multiple choice questionnaires were available, they were generally used in survey mode for gathering course evaluation information rather than student performance information in a testing mode. The MUVE aspect of assessment was more apparent in devising metrics to capture performance within the type of autonomous, simulation tasks made possible by the MUVE. Thus an assessment form would consist of:

- Key language skills & competencies displayed in a task
- Task specific information (marked on a scale of 1-4): task completion; grammar; vocabulary; fluency; appropriateness; pronunciation
- Open comments

In *Second Life* the camera can be detached from the avatar and thus observe activity the equivalent of several hundred metres away. This facility is very useful for classroom quality control as well as student observation. Note students are never 'spied on' anyone overhearing is visible in the 'active speakers' panel even if not proximate.

Independent of the programme any student was attending, they also had the opportunity to meet up with an advisor to assess their progress. It is certainly true that this was influenced by the amount of time they were spending in *Second Life* overall and, within this, the degree to which they were seeking out informal practice and learning opportunities. Through regular social as well as lesson attendance some intermediate students achieved the type of linguistic progress within 8 weeks or so which is normally associated with 140-170 hours of instruction (from CEFR level B1–CEFR level B2).

Disadvantages of a MUVE as Opposed to the Real Life Classroom

However engaging they may be, MUVEs are still pictures on a screen and therefore facial understanding, haptics, and much body language are not present, something which avatar movement or animation cannot compensate for. It's therefore difficult to know if students are engaged or understand the task set by the teacher. Students need to be encouraged to ask questions.

Learners must learn to use the virtual environment before/or at the same time they learn any language (although the MUVE could be totally in the target language). The struggle of 'newbies' (SL slang for new users) with the learning environment can lead to high anxiety levels which are counterproductive for language learning. However, tutorials and a few insights during lesson preparation can minimize this). There may be technical issues, days when the central servers run slowly which may make the class more difficult to deliver, learners may have problems with their voice or very bad sound which makes it difficult to understand them or which causes disruption in the classroom. However, technical issues can also happen in the real life classroom just as easily.

Extended texts like pieces of student writing or reading are more challenging to work with in SL, so a multifaceted approach may be required

by combining virtual world interaction with online documents, for example.

TASK EXPERIENCES AND TASK DESIGN

This section looks at specific samples of lesson as a focus to bring together the issues raised in previous sections of the chapter. A contextualised overview of two sets of sample materials, specifically designed for delivery within a MUVE, is provided within a framework which highlights their context, aims, components, sequencing and outcomes. They are intended to be illustrative of the issues raised earlier in the chapter.

The rationale behind this material selection is they act as a prism for two quite different students: beginner / false beginners learning Spanish and intermediate (B1 in CEFR) students of English. Having two different languages is of no significance in terms of the materials design issues that we raise–the points would apply generally to any modern foreign language teaching.

It should be noted that the sample materials have been chosen to represent types of situations which we think readers may find most useful rather than necessarily being ideal models. This is especially the case with the English sample material which should be seen as a snapshot of a development stage in a long iterative process. It is not necessarily representative of how we would approach such a task in retrospect nor how Languagelab.com plans or executes its current activities.

Spanish: Beginners & False Beginners

The Spanish course was designed to provide total beginners with some basic notions of Spanish they could use when travelling to a Spanish-speaking country. The course is devised as a trip to a Spanish city: from a first encounter with the students at the train station of the Spanish City and hotel check in, to all the different situations that a tourist is likely to encounter in a Spanish speaking country.

Figure 2 is a brief overview of the general learning goals phrased in "can do statements" that were adapted from the CEF to this course:

Sample Lesson 1

- Level: beginners
- Goal: Learn how to buy clothes and complain about a purchase
- Setting: Clothes store
- Objectives: By the end of this lesson, students will be able to
  - Identify vocabulary related to clothes items (clothes, colours, sizes, price)
  - Describe what they and others are wearing
  - Ask for the clothes they want to buy in a clothes store
  - Answer questions regarding the kind of clothes they want to buy (type of item, colour, size, price)
  - Complain about problems with items bought

When creating a lesson in SL there are some basic elements that need to be taken into account. The environment in SL plays a very important role as it helps the student understand the context and the nature of the topic of the class. It is also important to prepare activities in different locations to achieve a rhythm to the class. If not, classes may become static and tedious. Apart from the locations, it is important to design varied activities that cater for different learning styles and that add an element of surprise or play to the lesson. Bearing all this in mind, a number of activities were designed to fulfil the objectives of the lesson (Figure 3, Figure 4).

Figure 2. Overview of Spanish course (© 2009, Languagelab.com - Used with permission)

STAGE (most of these stages were about 3 hours of contact time plus self-study)	Overall- CEFR competencies used for planning
- Welcome to the Spanish city - At the hotel: Checking in a hotel and complaining about the room - Getting around the city: asking for and giving directions - Shopping for food - Ordering food at a restaurant - Clothes: buying clothes and returning them - Describing routines - At the bank: exchanging and withdrawing money - Meeting people socially and making plans - Consolidations and self-evaluation	- Can deal with situations likely to arise when traveling (e.g. asking for directions, ordering food at a restaurant). - Can exploit a range of simple language to deal with most situations likely to arise whilst travelling. - Can deal with most transactions likely to arise whilst travelling, such as arranging accommodation, exchanging money - Can ask and answer simple questions used when meeting someone for the first time in a social context. - Can reflect on his/her language learning process

Figure 3. Breakdown of a lesson in the Spanish course (© 2009, Languagelab.com. Used with permission)

Activities **	Input- varied?	Interaction	Resources	Authentic?	language skills
Learning vocabulary: clothes items, colors,sizes,prices, expensive-cheap	Images Text on images voice	T-S S-S Individual Whole group	2-D boards	no	Reading Listening speaking
Identifying what each is wearing	Voice avatars	T-S S-S Individual Whole group	3D	yes	Listening speaking
Asking for favourite colors	Notecards Text IM voice	S-S Group work Whole group	2D - 3D notecard giver notecard hover text	yes	Listening Speaking writing
Identifying image-text	Visual text	individual	3D interactive quiz	no	reading
Asking for clothes in store	Images objects avatars voice	Pair S-S	3D store clothes	yes	Listening speaking
Describing what others are wearing (extension activity)	avatars	Pair S-S S-Whole group	3D- catwalk	yes: the description no: the situation	Listening speaking
Complaining about item bought	Text voice	T-S individual	3D Store Clothes 2D Notecard boards	yes	Speaking Listening reading

KEY:

T-S = teacher student /
S-S = student–student etc

IM = Instant message–individual or group communication via text chat
Boards = large virtual slides or panels displaying visuals or extended text
Notecard = text file distributed inside the MUVE and viewed within it.

Figure 4. Scenes from the Spanish course in Ciudad Bonita. (© 2009, Languagelab.com. Used with permission)

English: Intermediate (B1)

The English courses had different programs with different objectives according to the students' needs and interests. The approach adopted for the English programme above foresaw two types of lesson within the programme, some with a strong situational-functional orientation and others related to discussion and cross-cultural exchange. Both types had language input. The programme comprised 18 hours of class divided over 12 separate sessions. (Figure 5, Figure 6).

Sample Lesson 2

- Level: Intermediate (CEF B1)
- Setting: travel agent
- Goal: book a holiday at a travel agent

Figure 5. Outline of B1 module, Travel and Tourism. (© 2009, Languagelab.com. Used with permission.)

Stage	Overall- CEFR competencies used for planning this section
- Introduction to holiday theme: talking about an ideal trip. - Planning and exploring holiday options: going to a travel agent . - Bookings: online and by phone - Packing a suitcase and catching the flight - Arriving: hiring a car at the airport - Checking into the hotel and making a complaint - Sightseeing, the city tour and visiting an art gallery. - Asking for directions & visiting an historical site - Sharing with friends: deciding how to spend a free day, sharing photos describing these - Consolidation & self evaluation	- Can exploit a wide range of simple language to deal with most situations likely to arise whilst travelling. - Can express personal opinions and exchange information on topics that are familiar, of personal interest or pertinent to everyday life (e.g. family, hobbies, work, travel and current events. - Can deal with most situations likely to arise when making travel arrangements through an agent or when actually travelling. - Can deal with most transactions likely to arise whilst travelling, arranging travel or accommodation, or dealing with authorities during a foreign visit.

Figure 6. Breakdown of section of B1 module, Travel and Tourism. (© 2009, Languagelab.com. Used with permission)

Activities **	Inputs & Interaction	Resources	Authentic?	Language skills
Sound check		N/A	A good opportunity to establish relationships and get to know people	Speaking Listening
1. Introduction to topic. Students meet near travel agents. Teacher asks about students' experiences with and opinions of travel agents	Voice T-S S-S	Open area. Comfortable seating if possible and display space for class props in subsequent stages	No	Speaking
2. Reading & discussion. Discuss a range of 2D visuals deployed by teacher to represent different types of holiday & match each one to a description within a reading	Voice Visual T-S S-S	2D boards with images acting as visual prompts for different types of holidays. Separate mini whiteboard for displaying activity instructions for reference. Teacher can also wear a 'chat hat' which performs the same function. Short texts contained within the 2D boards accessed by students clicking on the prompt	No	Speaking Reading
3.Vocabulary. Focus on key vocabulary for a holiday booking task	Voice Text T-S S-S	Vocabulary task on notecard distributed by teacher or made available within a notecard dispenser so students can access directly	No	Reading Speaking
4. Role play preparation & discussion. Students choose which holiday most appeals to them from the types suggested in part 2. Students are put in groups and must agree on one type of holiday per group and prepare a list of questions for the travel agent.	Voice Text T-S S-S	Further task and instructions on notecard (text format) distributed by teacher	No	Reading Speaking Listening
5 Role play (In the travel agent's office)Taking turns as some students are assigned the role of travel agent students meet with a different group to discuss their needs. Swap group when finished.	Voice Text T-S S-S	Travel agency or tourist information centre location sufficient furniture and facilities to support role play	Semi	Speaking Listening
6. Debriefing				

- Objectives: By the end of this lesson sequence, students will be able to
  - Give reasons and explanations for opinions related to holidays
  - Book a holiday at a travel agency

Syllabus Design and Task-Based Learning

In planning the English programme a "framework" on which to build a lesson curriculum CEF competencies ('can-do) statements and descriptors were used to develop themes and task areas and then interlinked using a narrative structure *going on holiday.* The outcome was then matched against a standard lexical-grammatical syllabus. The descriptors (e.g. *Can exploit a wide range of simple language to deal with most situations likely to arise whilst travelling)* were considered from different perspectives (language input, social knowledge, variation in experience) and then matched with the standard syllabus. Each lesson or task had a number of descriptors as a main focus but these were recycled and reviewed across the programme.

The approach to the Spanish beginners course was slightly different. It was also thought that the most appropriate approach for this course would be a functional-situational approach (based on CEF descriptors and can do statements) where the students would learn Spanish experimenting using authentic situations they would be likely to face when visiting a Spanish speaking location as tourists. Because of the goals mentioned in the sample lesson as well as the immersive nature of the course, a wide range of competencies (some of them complex for an A1 level) were worked on.

However, both programmes were very much influenced by a task based approach to design as

the nature of 3D MUVEs is especially suited to implementing task-based instruction.

Task-based instruction refers to an approach where tasks constitute the fundamental unit of planning and instruction. Some of its proposers (Nunan, 1989; Willis, 1996), present it as the logical development of the communicative language teaching movement since it is based on some of the principles that were part of this movement in the 1980´s. Some of these principles involve the use of activities that promote real communication, activities in which the language is used to carry out significant tasks since the language that is significant for the learner impels the learning process.

Nunan (1989) considers that a task can be constituted by a group of activities, and that a unit can be composed of a group of tasks. He defines a task as:

"*As a piece of classroom work which involves learners in comprehending, manipulating, producing or interacting in the target language while their attention is principally focused on meaning rather than form. "The task should also have a sense of completeness, being able to stand alone as a communicative act in its own right*" (p.10). In sum, we can say that tasks are justified if they help the student to develop the skills needed to carry out real-world communicative interactions.

Above we have illustrated the breakdown of different tasks that we have used in our language programs. Nunan (1989) suggests several components of a task which can be identified in our analyses:

- **A goal:** the goals of the tasks are authentic as they are goals that can be carried out in real life such as buying some clothes or booking a holiday
- **Some form of input which can be verbal or non-verbal:** The input in the lessons is provided through different resources: boards with images and text, notecards, interactive quizzes and boards, sound-enhanced objects, the avatars (teachers and students). The diversity of resources used caters to the students´ different learning styles.
- **Set of activities derived from the input which sets out what the students will do in relation to the input:** in many lessons there is an element of play and creativity which is specific to this gaming environment (e.g. when the students get dressed up and participate in a fashion show.)
- **Roles for students and teachers:** Students have an active role during the whole class; so, there is a lot of interaction carried out among the teachers and the students through the different groupings which provides plenty of opportunities for negotiation of meaning and output adjustments.
- **A setting:** The environment also played a crucial role in this lesson, especially at the last stages of the lesson when students had to role play shopping or returning clothes or booking a holiday at a travel agent.

Our MUVE-based praxis builds on these foundations and task design replicates good practice where appropriate from traditional learning while playing to MUVE affordances such as simulation, role play, functional and situational aspects.

CONCLUSION

Voice-enabled 3D MUVEs clearly have enormous potential to support foreign language learning– the ability to manipulate the environment and become an embodied part of that environment, as an avatar, enables language learners to invest their emotions and themselves into tasks where they can 'exchange meaning' and where language learning can really take place.

In addition to e-learning's more standard affordances of flexibility of time and place, MUVEs allow for the creation of immersive practice

environments which are genuinely engaging and involving. It is also clear that these are still early days in the exploitation of MUVEs for education in general. In fact, it is possibly not even accurate to suggest that their usage is the early adopter stage. Zemsky and Massy (2004), in their analysis of 'stages of technology adoption', point out that for a technology to move from 'innovator' to 'early adopter' status, a 'dominant paradigm' must emerge. This has arguably not yet occurred for the exploitation of MUVEs in the areas of overall implementation model and teacher training. If this is the case then, materials design, which depends on these, is still also in a state of flux.

What we can say though is that, just as many face-to-face teaching methodologies can be transferred and or adapted to MUVEs, so many of the elements of successful task design as it is currently understood, also apply to MUVEs. The extent to which we take advantage of the range of what MUVEs have to offer will depend on a range of factors:

- The fit between the MUVE element and an existing face to face or online component
- The expectations and skill levels of the teachers and students
- The course objectives
- The extent to which teachers and students are willing and prepared to learn autonomously
- Cultural appropriateness
- Monolingual vs. multilingual groups

There is an important proviso: not only does task design have to take account of language learning theory, it also has to accommodate issues involved in using MUVE technology. If this stringent set of conditions can be met, we are confident that MUVEs can meet the needs of real life learners in a real life learning environment in meaningful ways which we are only beginning to discover.

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KEY TERMS AND DEFINITIONS

MUVEs: three-dimensional environments simulating the real world.

Embodiment: strong relationship between self and the digital representation of self in the form of avatar.

Task-based Learning: teaching-learning approach based on the use of real-life tasks to teach/learn a second/foreign language.

CALL: Computer Assisted Language Learning–Using computer technologies to learn a language.

CMC: Computer Mediated Communication–Using computer applications to communicate online.

SLA: Second Language Acquisition.

Avatar: Graphic representation of the participant's virtual persona.

Second Life: 3D Multi-User Virtual Environment freely downloadable from www.secondlife.com.

Classroom: any space where teachers and students get together with the purpose of teaching & learning.

ENDNOTES

1 http://wiki.secondlife.com/wiki/Holodeck

2 St. Patrick's Day: national day of the Republic of Ireland which is also celebrated by the Irish diaspora worldwide.