

## **Teaching Languages in a Virtual World**

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### **Abstract**

This article explores the development of a course for teaching a language in a virtual world. In particular we evaluate the course entitled, "Social English for Doctoral Students" that is in progress in the fall semester of 2007. This course will activate learners and educators using a variety of support media including Marratech conferencing system and Second Life virtual world platform. The pilot course part of a one year project sponsored by The Norwegian University program (NUV) is entitled, "A Virtual Platform for Life Long Learning". In addition to the development of this course, we contribute with the development of an evaluation framework that may be applied to other courses taught in Second Life as well.

### **Keywords**

Virtual worlds, E-learning, multimedia instruction, language studies

### **Introduction**

Virtual worlds such as the environment offered in Second Life (SL) may offer revolutionary and innovative modes of learning. Virtual worlds have been acknowledged as virtual learning environments (VLE) by Gredler (2001) and Jenkins (2005). The VLE focuses on new types of interactions between educators and learners and between learners. This article does not propose to explore the broad scope of opportunities of virtual worlds. Rather, we will present our method for the development of a course on "Social English for Doctoral Students" as a case of the development of a language course in Second Life. In addition we will present our evaluation framework, which is planned to be applied to other types of courses that will be developed under our NUV project.

The one year project sponsored by The Norwegian University program (Norgesuniversitetet, NUV website: <http://norgesuniversitetet.no> ), is entitled, “A Virtual Platform for Life Long Learning” will be a learning environment that is co-developed by Molde University College (Norway), Kalmar University College (Sweden) and the Central Missouri State University (USA) using the virtual technology environment of Second Life (SL). The project coordination is lead by Bjørn Jæger and project evaluation is lead by Judith Molka-Danielsen, both at Molde University College. Second Life is a 3D world and virtual community where the constructs of the world are built by its members. We think this evaluation will contribute to others proposing multimedia instruction.

## Literature Review

With greater occurrence, academic institutions are engaging in online education (Allen, Seaman, 2006). There has been a 25% increase in online learning in the USA. The Sloan Consortium published its 4th annual report on online learning with universities and colleges in the USA that claimed in the fall, 3.2 million students took at least one network course from an accredited institution of higher education in the USA. This was a doubling since the first survey in 2002 and 800,000 more than in 2004. (Allen, Seaman, 2006) Yet many students report that in distance education courses and programs they “often feel isolated and they report feelings of apprehension. They attribute this to lack of student to student and student to faculty contact.” (Muilenburg & Berge, 2001)

Virtual worlds such as Linden Labs “Second Life” can be seen as an opportunistic platform for future online leaning. Over 160 institutions of higher education as members of the New Media Consortium (NMC)<sup>1</sup> forum have already created courses or held meetings in the virtual world of “Second Life” developed by Linden Labs. Many such institutions have done so for the motivation of effective use of time, or to reach students with mobile lifestyles. Still more recent ventures into Second Life education have goals of increasing collaboration between educators while enhancing student learning.<sup>2</sup> From the teaching perspective, traditionally resources of personnel competency and knowledge bases have been localized. Being able to access distributed teaching resources through virtual worlds such as Second Life could offers benefits similar to other online solutions, but in addition SL offers a richly immersive environment. That is SL allows open access (unlike many learning management systems) and is supportive of rich social interactions. We wish to explore this advantage in the educator and learner environment through our project.

We base our concept of learning on the social constructivist theory of learning. That is, learning is considered a social and active process (Vygotsky, 1978) (Brown, Collins & Duguid, 1989). The social constructivist conception is that learning occurs as self-governed, problem-based and

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<sup>1</sup> The New Media Consortium is located at: <http://www.nmc.org/> and their online newsletter, NMC Campus Observer is located at: <http://sl.nmc.org/>

<sup>2</sup> Nelson Marlborough Institute of Technology in New Zealand has in 2007 established the island “Koru” in Second Life for educators in New Zealand. The program is lead by Dr. Clare Atkins, she states, “NMIT is not committed to offering any courses or programmes in Second Life at the moment. Instead our primary objective is to explore and discover ways in which it could enhance our students learning.” Accessed from the NMIT Moodle Server (11.June.07): <http://ecampus.nmit.ac.nz/moodle/course/view.php?id=517>

collaborative processes. Well-designed social learning environments foster increased opportunities for collaborative activities. Research supports that games and simulations capitalizes on the motivational factors necessary to engage the learner. Embedding learning activities in open online environments will offer students socially acceptable and personally gratifying opportunities to learn. (Thompson & Rodriguez, 2004)

## Research Method

This study uses a design approach to develop an instructional framework that can be used in further development of other courses for the delivery of learning within the selected environment of Second Life. Our design framework will be based on “kernel theory” where needs are transformed into principles for the design of our course. That is the “learner needs” describe a domain (learner profile and context) in which a tool will function and then provide a basis for the in-development design propositions that should ultimately lead to desired outcomes. In our case study we apply the model suggested by (Vaishnavi and Kuecher, 2007) as outlined in Figure 1.

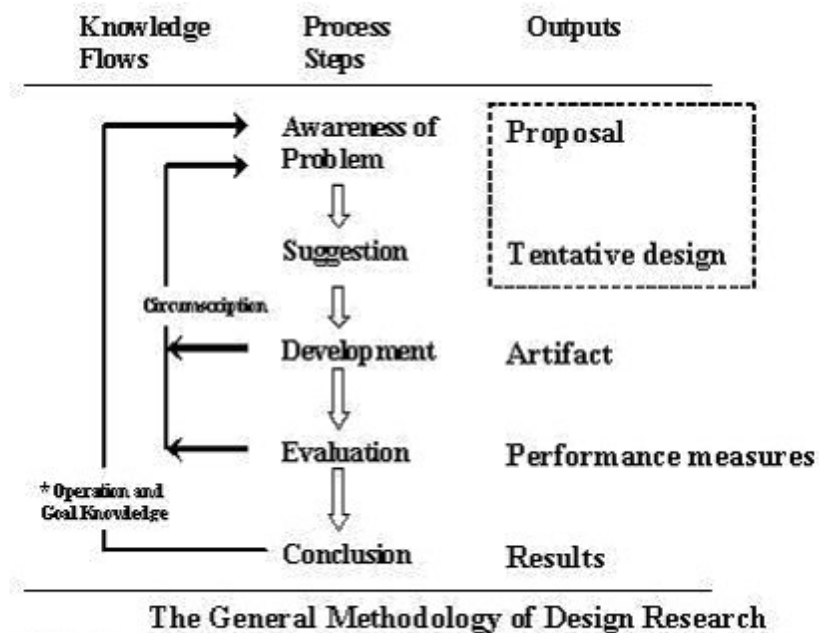


Figure 1. General methodology of design research (Vaishnavi and Kuechler, 2004/07)

The first stage of the design research method proposed by Vaishnavi and Kuechler is formulation of the problem. We are proposing to address a design problem in distance education applied to the context of teaching languages. We propose that closed systems, such as remotely accessed proprietary Learning Management Systems (LMS), create a gap of knowledge when they are used to teach languages. While LMS may offer access to large databases on subject matter, the closed environments create a problem as reported by Dalsgaard (2006). The problem of combining personal learning tools and networked tools in a closed controlled environment is a

dilemma for the social constructivist theory of learning. So we apply the social constructivist theory to influence our initial selection of Second Life as a learning platform, but also to influence our approach to teaching and evaluation within that environment. For example does influence selection of class work and group formats and seating arrangements.

The theoretical contribution of our paper is to explore the claim that the 3D virtual world of Second Life supports the social constructivist view of learning and will be associated with outcome on greater use of the learning environment and greater learner activity in learning languages. It will remain to be seen if such activity can be related to positive cognitive outcomes. We reiterate that virtual worlds may be selected as learning environments with the goal to motivate and engage learners, to teach skills in rehearsal for the real world, through roll-play and to empower learners to decide on their own direction of learning. (de Freitas, 2007, p.15) The method for the development of a course on “Social English for Doctoral Students” as a case of the development of a language course in Second Life can be contextualized in a form of action research described in the next paragraphs.

Learning in virtual worlds is difficult to isolate as an independent event. That is, learning is embedded as part of the total experience. “It is embedded into a set of activities according the pedagogic approach adopted.” (de Freitas, 2007, p.24) In this pilot course we use an experiential pedagogic approach to learning. Experiential learning (Kolb, 1984) is a model of learning consisting of cycles of learning with 4 stages. The stages are [1] concrete experience, [2] observation and reflection, [3] forming abstract concepts and [4] testing in new situations. In this type of learning for adults, the role of debriefing after meetings, reflection, and post-exercise discussions are important tasks of stage 2 to separate the embedded learning experience. This task will be done by peers and course leaders to form assessments by triangulation.

Our steps for assessment of learners’ outcome will involve examining the use of in world-settings (voice and group tasks and space arrangements) and given user demographics (course participants) will be as follows:

- Define desired cognitive outcomes and define desired affective outcomes (motivation, expectations to use further the technology, comfort with use of the technology).
- Select activities (as outlined in the syllabus for the course).
- Undertake sessions where activities can include outlining the sessions, and post session reflections.
- Evaluate the effectiveness of the sessions using feedback from multiple sources (teachers and learners, other participants).
- Use knowledge gained for transfer of pedagogic approach to other context (other courses).

## **Case Analysis of the Language Course in a Virtual World**

Through collective discussions between the educators, a proposal for the course and tentative design was developed. Artifacts to be used in evaluation of the effectiveness of the sessions are being collected for the course in progress. Interviews and course surveys and reflection on the in course sessions will serve as artifacts that will contribute to feedback of the general methodology. The course surveys and interviews will evaluate affective and cognitive

performance measures. At the time of submission of this article we have feedback from several of the course meetings. The findings of this paper are therefore up to the development of the performance measures. This study may also be classified as a longitudinal study using the feedback from the present case as applicable to further development of the course design. The “affective learner outcomes” and “cognitive learner outcomes” are collectable and comparable data across periods (Ruspini, 1999) (Järvinen, 2004). The methodological approach is to build on a descriptive theory to extend the concept of giving a course in Second Life, so that it can be applied in other courses.

### AWARENESS AND COURSE PROPOSAL

The case in study, the initial course proposal arose out of discussions of learner needs. David Richardson of Kalmar University College, spoke with a former colleague Janet Harling, then at Mitthögskolan in Härnösand. Janet asked several professors in science subjects what training they thought their doctoral students needed in English. The responses were clear:

- a) training in the ability to describe their research so that an academic, non-expert could easily grasp its main points;
- b) in the ability to socialize in English in informal settings (at dinner or around the coffee table); and
- c) in the ability to make a clear impression in the interactive sessions at conferences (e.g. in round-table discussions and in handling question-and-answer sessions after presentations).

These became the cognitive goals of the proposed course.

### SUGGESTION AND TENTATIVE DESIGN

#### **The Learner's Profile**

We examined and considered the factors that would lead us to believe that Second Life would be an acceptable platform for learning. A former study by The Pew Internet & American Life Project (2003) said that 70% of college students reported playing video, computer or online games at least once in a while, 65% reported being regular or occasional players (Jones, 2003). Another study by Fetscherin (2007), “User Acceptance of Virtual Worlds: An Explorative Study about Second Life” indicated the user acceptance of Second Life in particular. Some of their findings were – 70% perceive Second Life improves collaboration and communication. Greater than 60% perceive that it improves cooperation between people. 56% perceive Second life as easy to use. Their survey of approximately 250 respondents provides empirical results of the user acceptance of Second Life. Data was gathered during spring 2007. Further results show 90% of respondents had less than a year experience, 70% accessed Second Life from home, 67% were not afraid of giving personal information. 60% were very likely to buy virtual goods from Second Life, and 42% were willing to use their credit card to purchase on Second Life. Finally, results indicate “that people are using Second Life not to change their identity, but rather to explore and visit new places and meet people.” This study gave us a prediction of what we could expect to encounter from our student base.

For the present project, a call for volunteers was sent out. The lead teacher of English at the Human Knowledge Institute, (Humanvetenskapliga institutionen, HV) issued a call for 3 doctoral students. Similarly the call was announced to doctoral students at the other partner institutions.

The requirements in the call were as follows. The course would not give the student any academic credits towards doctoral studies. It is possible that an expanded version would be made available to doctoral students in the future.

Three PhD students from Sweden answered the call; two are in the field of Pedagogic and one in History. Two PhD students also volunteered from the Norwegian partner college, these are students of the field of Logistics. One student is from Tallinn University in Estonia. Two PhD students from the University of Pisa in Italy. These students are from the discipline of Computer Science Engineering.

Finally, we have a participant of the course in the role of both student-participant and observer. This participant is employed as a Student Advisor with the University of Bergen and is a contributor to another project in multimedia education. That other project is for the development and use of a web portal called "Porta Italia" for teaching Norwegian students the Italian language. Their project is called "Nettitaliensk" and is operated under the Institute for Foreign Languages at the University of Bergen. They wish to use our Second Life virtual land or "island" also in the future, in combination with their multimedia education system. The participation from the University of Bergen benefits both them and us. It offers us a 3<sup>rd</sup> party feedback and validation, and at the same time gives them insight into how to teach language studies within Second Life.

### **The Student Commitment**

For volunteers that take part in the course, the commitment involved is as follows:

1. Participation in six, 90-minute sessions (provisionally timetabled between 3.00 pm and 4.30 pm, CET, on Wednesday afternoons between weeks 38 and 43, i.e. from 19th September to 24th October, inclusive)
2. Spending time outside these sessions a) preparing short presentations of your research; and b) familiarizing yourself with the Second Life virtual environment
3. Participating in the evaluation exercise on the course the Kamimo Islands Project.

The course will be delivered via Marratech and Second Life. If the student's office computer is sufficiently well-equipped for this, the student should be able to study from their office. If not, then a computer would be made available to the student somewhere on campus.

### **The Educator's Profiles**

This pilot course would involve several experts in English education. The lead teacher from HV (mentioned above) at Kalmar University College would facilitate activities in the course. He has taught English in numerous distance education courses, and is an expert user of the Marratech conferencing system. He would receive assistance from his colleague at Mid Sweden University (Mittuniversitet). He is also a teacher of English and has a doctoral dissertation in "Apologising in British English". A third associate with the Center of Interdepartmental Linguistics at the University of Pisa, would provide local support to the Italian students. Finally, in addition to academic expertise in English, one of the contributing educators to the course has experience in teaching within Second Life, as an assistant professor, English of University of Central Missouri, has taught several literature courses in-world, and would be providing SL expertise.

### **A Proposed Plan of Meetings**

A meeting plan was developed for course participants that would involve several multimedia systems. The course would consist of a 90-minute Marratech meeting to start the whole thing off, and then four 90-minute sessions in SL, with a day or two in between. It would then finish with another 90-minute Marratech meeting. The Marratech meetings are intended to put inexperienced students at ease, but also allow us to compare the two media, Marratech and SL, in the evaluation. The first SL session (at least) would probably be dedicated to orienting the students in the SL environment, but we will also provide SL orientation information and suggest that students may try to set up an avatar before the course meets. A general syllabus for the course meetings was planned:

1. Marratech Meeting 1 - Introductions, explanations, group-building and controlled practice with different types of presentational and social language in English.
2. SL Meeting 1 - Orientation in world, 'easy' social skills practice around a table, at a bar and in a discussion session led by teachers. Perhaps a mini-version of the round-table discussion from the teachers' experiences.
3. SL Meeting 2 - Dealing with difficult questioners. Students make mini-presentations from their own research areas, and have to deal with the teaching team playing the part of the awkward questioners. E.g. the guy who wants to take over your session to present his own research ("I see you've failed to deal with the "Hardcastle" principle. Let me explain what I mean ..."); the 'improper advance' ("I find your research fascinating, and we may have a place on our team for you. Could you just send me all your raw data for evaluation."); the insincere competitor ("What an interesting presentation. It fits in very well with our much more extensive/deeper/more scientifically accurate work" [looking over shoulder at important professor in audience]).
4. SL Meeting 3 - Social language around the coffee table and dinner table. Presenting yourself and your research to complete strangers. Each student has to make one total social gaffe - and then make a recovery ("What an interesting tie, Professor" "Yes, it was given to me by my dear father - he died last week").
5. SL Meeting 4 - Students organize and run a round-table discussion themselves, with teachers acting the roles of various difficult customers.
6. Marratech Meeting 2 - Discussion of learning outcomes, reactions to media, feedback from teachers, etc.

## COURSE DEVELOPMENT AND OUTCOMES

Some preliminary outcomes or artifacts of the course in progress are available as we write. These and later experiences will give valuable feedback into the design process. As an example, Figure 2 depicts the courses first all in-world session. That is the prior session had students meeting first in Marratech. This reported session was only in SL. Each session in SL takes preparation by all participants. The course leader must check for scheduled downtimes with Second Life. Also at the first in-world session, a quick tutorial on how to activate Voice Chat was given. And as mentioned above, it was also recommended that the students prior to course meeting should try to enter SL with an avatar and to have a headset and microphone ready and working. The teachers have pre-session discussions and post-session reflection. The students were given a pre-session task that was to: "be ready to describe yourself and your field of research in a way which will be interesting to someone who's not in your particular field. You'll be doing this purely orally (i.e. no PowerPoint presentations) because you need to come across to the professors as naturally and directly as you can."

The course meeting place in SL was the informal setting of the campfire and an activity of roll play was used. Two researchers (the teachers) were having a conversation around the campfire, and the students were given the task, in groups of two, to join their conversations, tell them who they are and to explain what their areas of research are.



**Figure 2. Meeting of students and teachers in the Social English Course for Doctoral Students**

The course leader was not part of the conversations around the campfire. The two assisting teachers were holding a conversation, and the lead instructor gave feedback to students during the session, if he thought for example that someone was too silent. He also, indicated when student groups should discuss among themselves, and gave feedback to the students on their approaches afterwards.

The lead teacher's reflection on the session was as follows, "It was interesting to see that things that work in RL (real life) work in SL too. Things took about the length of time I thought they'd take, by the way! I'm beginning to get a feel for the level of explicitness you need for instructions, etc." One of the assisting teachers that were part of the conversation commented that it was sometimes difficult to know which avatar was speaking (despite that a speaker has green waves over the avatar's head that is speaking). It might have been confusing because the teachers had already been trying to remember who the real person was behind the avatar. Also, the teachers were new users of SL, and did not know how to adjust cameras and hear from camera positions that would make identification easier.

Finally, one of the students commented in post-session reflection, “I think the course might turn out to be very useful but we need to get more familiar with using our voices and also get to know each other a little bit more. I have never used my microphone until yesterday; it feels safer to write with strangers in SL. Maybe it would be an idea to meet at a SL café or club for an informal chat one evening. The students will not be so afraid to make mistakes and it might be easier for the teachers to be completely honest about our performances when they get to know us better. We all need this training to avoid difficult situations in RL.” This type of feedback is very useful to the evaluators of this project. First, it indicates that there is newness in the use of several technology tools being applied, and not just SL. It indicates that students are motivated to participate and may wish to spend even more time in-world. It shows the setting is believable enough, that the role play can be related to real life situations.

## EVALUATION AND PERFORMANCE MEASURES

The planned course would not give post-graduate 'points' in its pilot run. The students would however, gain some valuable experience, and it was on this note that we sent out the call for post-graduates to participate. We received the volunteers that are described in the section on Learner's profile. Without normative grades, we use a more qualitative assessment and next describe our evaluation goals and process.

### **Evaluation Goals**

Although our goals stated here may seem very general, we remind that the multimedia environment is new and that education in this domain is still at an exploratory stage of theory creation. Therefore, we state our evaluation goals as follows.

- Identify teaching methods used in Second Life that exhibit affective support for the engagement of learners.
- Identify the design elements used in Second Life that influence affective support for high engagement.
- Assess these elements support of engagement and their impact on positive cognitive outcomes in Learning.

Affective evaluation can be based on: strength in class participation levels, engagement in class work, interest in learning, participants' attitudes and motivations. We intend to examine affective measures using a longitudinal approach described in the next section.

How can we draw valid conclusions or and make reliable statements regarding the impact of the studied virtual society (SL) on learners' cognitive outcomes? How do we know if we have enhanced the learners' experience? This is a challenging task. Higher order cognitive processes are for example: critical thinking, problem solving, creativity, knowledge transfer, skills acquisition. (Singer et al., 2000) state, "Effective evaluation can be facilitated through the acquisition of learning artifacts and sample discourse that demonstrate learner performance in context." Additionally, these can be observed through interviews for self-perceptions, peer-reviews and course-leaders perceptions. We will use a triangulation process of evaluation described in the next section.

### **Evaluation Process**

The evaluation process will use two forms of survey. The first will be for an affective evaluation of user acceptance and usability of SL and the tools that we actually use (like in-world voice, white boards, and other shared communication tools). We will ask the students to self-evaluate themselves in the beginning of the first in-world session, and then at the end of the last session. The survey of the affective domain is listed in the Appendix, since this is in the public domain from the beginning of the course. Secondly, we will make available in-world during the last in-world course session, a cognitive-skills evaluation form that questions how well the students meet the goals (3 main goals) of the course. This form should be filled out by the student (self-evaluation), the course leader (a close-contact evaluation) and one peer (randomly assigned, peer evaluation) at the end of the course. This will allow for triangulation on evaluation of cognitive skills. The form will use a five-point Likert scale and ask questions on the impact of the course on attitudes and performance, impact on response while having used the virtual world, and several open questions about what contributed most to learning and what was most difficult.

In addition our evaluation process as our evaluation process is qualitative, we will use unstructured reflective interview. The reason is as follows. The educators are excited about the cross-cultural context that is being created through the instantiation of this pilot course. More deeply, they hope to explore concepts such as how does Second Life affect the ways in that participants perceive each other as compared to the real life interactions. Does the focus become more of what one says, rather than how the avatar looks? As it becomes more obvious with greater in-world experience that the avatars are not direct extensions of the physical self but perhaps reach further. We may examine, does the virtual world allow educators and learners to focus on the core competencies of our real selves? The understanding of how identify affects learning are issues that cannot be understood through survey alone. These subtle interpretations of an enhanced learning experience must be obtained through reflection and interviews with the educators and learners.

## **Conclusion**

More research is needed to provide empirical evidence for how learning based in open access virtual worlds can take place more effectively to support learning languages. There is a need for case studies of group dynamics in these immersive spaces. This means conducting pilot courses with users of different user specifications (demographic profiles) and examining different world settings to explore what contexts support more flexible forms of lifelong learning and to discover contexts that are problematic or not suited to some learners. This educational project involves students and educators from Norway, Sweden, Italy, Estonia, and USA. Cultural differences, time differences and differences in the learners' background all contribute to the challenges of this course. The social networking technology of Second Life makes it possible to bring together these unlike students. We contribute by addressing a design problem of teaching languages through closed systems to culturally different and geographically dispersed students. We do this by design and test of a course, Social English within the virtual world of Second Life. We build on the social constructivist approach to learning, and create a descriptive theory for how these diverse elements can be brought together. Secondly we suggest an evaluation framework for this environment based on affective and cognitive measures and through semi-structures and unstructured collection of artifacts. While cognitive outcomes of this particular

Social English pilot-course cannot be evaluated at this stage, and assessment of affective outcomes must also wait until course completion, such an evaluation framework may be repeated in other courses. For example, the project participants are preparing to teach other courses in Second Life, include courses in Software Design and 3D Modeling. Each new course will have different cognitive goals. However they will share many of the affective measures that contribute to student immersion and activeness in learning while taking a course in Second Life. We therefore suggest that the experiences gained here have transferable value to other educators in virtual worlds.

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## Appendix

**Survey Goal:** This is a self evaluation of user acceptance and usability of Second Life (SL) as a virtual world for learning.

1. Please provide your avatar name and if you are a student the address of the school you are from.

- Name
- Address
- City
- Country
- Age
- Gender (female or male)

2. In the Essay box: please state your roll(s) on the Kamimo sim. For example: Teacher, Student, Observer, etc. And if you are a student, state your educational program. (For example: Doctoral student in Logistics.)

3. Is English your First language? (Please state: Yes/No)

If not, how many years of formal education have you in English? (Please state: number of years.)

Do you use English in work? (Please state: Often/Sometimes/AlmostNever/Never.)

4. When did you begin using Second Life (give a Date) and approximate how many hours you have been in Second Life since you started (give number of hours).

5. How often do you go in-world in Second Life?

- Everyday
- Visits on several days in a week
- 1 visit/week
- 1 visit/month
- Almost never
- Never

6. How much time do you spend in SL (include in this average only the days you enter)? (Choose one)

- <1 hour/day
- 1 to 4 hours/day
- 5 to 8 hours/day
- 8 to 12 hours/day
- >12 hours/day

7. Self-efficacy skills in Second Life: Use the following 5-point scale below to describe your skills in using Second Life. (Select the rating that most applies to you by selecting the bullet for each activity.)

(1) "I do not know if I have done this," (2) "I have never done this," (3) "I can do this with some help," (4) "I can do this by myself," (5) "I can show someone how to do this." (Select the rating that most applies to you and put the rating in front of each bullet.)

Activities in Second Life (SL):

- Find and access the Second Life Login page
- Create an avatar
- Walk your avatar
- Fly your avatar
- Chat using text messages with your avatar
- Chat using voice with your avatar
- Private voice call with your avatar and one other avatar
- Find a vehicle and test drive it.
- Use Instant Messaging (IM)
- Save text-chats or IM that take place
- Change my avatar's hair
- Change my avatar's clothes
- Change my avatar's race or gender
- Join a Group
- Find virtual Rome
- Teleport to virtual Venice
- Take a photo of your avatar
- Find a library in Second Life; take a snapshot of yourself reading a book.
- Take a snapshot of yourself doing at least 3 different dance moves
- Get a snapshot of a non-human avatar.
- Purchase something
- Use a public white board or bulletin board to leave a message
- Build a chair

8. How do you like Second Life for learning so far?