

Designing Teacher Training for the Use of Virtual Worlds in K-12 Education

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Summary

In our presentation, we will talk about the teacher training workshops that we have offered in the past four years. Our goal is to enable teachers to make informed decisions about the **usefulness** and classroom applicability of virtual worlds with a view to their own (future) classes. Based on the participating teachers (both general and special education pre- and in-service teachers), we have developed recommendations for the design of virtual worlds teacher training. We will talk about the **challenges** that the participating teachers have identified during their in-world experiences and fieldtrips to various educational regions in Second Life.

Overview of the Intervention

**Virtual
Worlds
Teacher
Training
Intervention**

Step 1: Preliminary Survey

Step 2: Unique Affordances & Resources

Step 3: Virtual Exploration

Step 4: Lesson Plan Presentation

Step 5: Written Reflection

Step 6: Lesson Plan Analysis

Step 7: Post-Survey

Figure 1. Overview of the intervention.

Challenges

Three key areas of concern were a **(1) lack of appropriateness, (2) distraction from learning, and (3) technical issues**. A strong trend was that the participants were very concerned about **inappropriate content** in Second Life. The participants' conclusion was that virtual destinations must be **appropriate for specific ages and grade levels**.

(1) LACK OF APPROPRIATENESS

- Unpleasant personal encounters with “strangers”
- Should an educational destination offer “private access”?
- Inappropriate content: ex. *Paris 1900*

(2) DISTRACTION FROM LEARNING

(2a) Visual Stimuli: Distracting or Enriching?

While some participants found the virtual environment motivating and appealing because of the **rich visual stimuli**, others found it distracting for exactly the same reason.

Quotation

“As a teacher of elementary students, I feel strongly that all or most of my students would be so distracted by the visuals and more fun elements (running around, swimming, flying, etc.) that any academic or social benefits would be slight.”

Question: How can we address such concerns?

(2) DISTRACTION FROM LEARNING

(2b) Authentic or Streamlined?

The benefits and challenges of authentic (i.e., realistic) environments versus streamlined environments must be carefully considered. Authentic environments may be **too complex**, whereas streamlined environments may be **too simplistic**.

TECHNICAL ISSUES

The fear of technical issues emerged as a key factor why the participants reported being hesitant to incorporate virtual worlds into their own teaching.

The main technological problems identified were **bandwidth, firewalls and other IT policy issues, hardware requirements, and audio problems.**

How to prevent technical issues

- Use a hard-wired internet connection
- Use Skype for voice communication
- Ensure the support of a technical facilitator
- Very frequent updates of Second Life viewer (including doing a 'clean install')

Talk about Risks

- It seems that most of the previous research has focused on identifying benefits rather than risks. >> Identify the **potential risks** of using virtual worlds for students. These risks should be addressed in teacher training in order to have a balanced discussion of the usefulness of virtual worlds and to enable teachers to make informed decisions.

Teachers' Control over Students' Virtual Worlds Experiences

Discuss how much control on the part of the educator is necessary to ensure an effective learning experience in a virtual environment without excessively restricting the users' freedom of exploration and sense of active participation, which might lead to demotivation.

SUPPORT

If possible, we recommend that the first few sessions be done with peers, the instructor, and a technical facilitator **together in a computer lab** to avoid frustrations over technical issues.

Ease of Access

Many of our participating teachers had concerns about the ease of access to virtual worlds. Would mobile access (e.g., “SECOND LIFE GO” for the iPad) to virtual worlds reduce issues related to hardware and software requirements, thereby increasing teachers’ willingness to use virtual worlds?

Troubleshooting

Many participating teachers had doubts that they would be able to troubleshoot if they were teaching in-world. They recommend specific training in learning how to troubleshoot.

Recommendation 1

Extensive virtual worlds training with an initial focus on navigation and communication. Then move on to more advanced features, such as *being able to access a video in the middle of a virtual world activity/game, downloading information from notecards, accessing equipment necessary for task fulfillment in their inventory (such as scuba equipment), having a private chat conversation, learning about sound parcels, and how to use camera controls.*

Recommendation 2

Share resources specifically tailored to the teachers' students, for example, lesson plans for students with social skills challenges or for students with emotional behavioral disorders (in special education).

Recommendation 3

Teachers learn how to locate age-appropriate and subject-related destinations by doing a practical task. In our experience, it has been **ineffective** to share resources with the participants **without incorporating a follow-up task.**

Recommendation 4

Use either a private region in Second Life that can be locked off to other users or a virtual world other than Second Life to avoid the risk of being exposed to inappropriate content even in regions with a rating of “general maturity.”

Recommendation 5

Striking a balance between authentic and streamlined environments is essential. The visual stimuli in 3D virtual worlds are very appealing to many users but can be confusing to others. Teachers may want to start with simplified regions and then move on to more ambiguous regions to practice the same set of social skills (specifically for special education).

Recommendation 6

The training includes interactive experiences with hands-on objects to observe visual outcomes of one's actions, for example, injecting bacteria into mice in a virtual biology laboratory (*Genome Island*).

Recommendation 7

The training includes a discussion of learning effects (*when is instruction in virtual worlds superior to other modes of instruction?*)

Recommendation 8

Striking a balance between teacher control and letting students explore seems essential in order to take full advantage of the potential of virtual worlds to enhance students' motivation.

Recommendation 9

Start an online repository of lesson plans specifically designed for their student population, for example, for students with social skills challenges so that other educators will not have to start from scratch.

Special Education

Increased use of chatbots (robot avatars), in a safe, confined virtual space. Chatbots can provide 24/7 communication and interaction, thereby offering repeated practice opportunities for social skills training without the stress associated with face-to-face communication.

Step 1

Introduction

- Pre-survey to measure attitude toward usability of virtual worlds (VWs) for special education
- Brainstorm on questions about VWs
- Watch educational VW videos
- Hands-on training (including special features)
- Special affordances for students with social skills challenges
- Teacher resources specifically designed for special education, incl. access to pretested destinations categorized according to age groups and subject matter
- How to locate age-appropriate and subject-related destinations (tied to a specific task)



Step 2

Exploration

- Fieldtrips to educational destinations (small, confined areas with built-in scaffolding)
- Explore areas offering chatbots (robot avatars) for repeated practice
- Explore visually and contextually authentic vs. streamlined regions
- Interactive experiences with hands-on objects to observe visual outcomes of one's actions
- Collaborative development of activities for students with social skills challenges
- Present learning activities in class for feedback



Step 3

Evaluation

- Reflect on usability of VWs for students with social skills challenges, incl. analysis of benefits and challenges
- Analysis of model lesson plans specifically designed for students with social skills challenges
- Read empirical articles describing practical implementation and learning effects, for example a history lesson taught in Second Life



Step 4

Assessment

- Teach virtual mini-lesson, including peer and instructor feedback
- Discussion of learning effects (when is instruction in VWs superior to other modes of instruction?)
- Post-survey to measure attitude toward usability of VWs for special education
- Final debriefing and feedback on effectiveness of workshop

How to contact us

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Publications in the Field of Virtual Worlds

Nussli, N. (2014). *An investigation of special education teachers' perceptions of the effectiveness of a systematic 7-Step virtual worlds teacher training workshop for increasing social skills*. Doctoral Dissertations. Paper 113.
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