LEARNING IN HIGHER EDUCATION: MACHINIMA VS TRADITIONAL VIDEO

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Abstract

Two academics at a regional university in Australia explore the differences between creating machinima and traditional video for their Higher Education students. The media is used for their undergraduate first-year online Education and Accounting students. Outlined is an overview of the two medium and their conclusions as to the machinima/video they prefer to use as a resource for their student and why. Machinima and traditional videos have been used with the author's students over the past ten years. In Education, the use of machinima/video has been an added resource and was not compulsory to use. With the Accounting students, the machinima/video were used to complement a compulsory component of the student's study resources. Due to this, there were many more views of the machinima/video of the Accounting students due to the videos being used as a resource for assessable tasks. This paper explores the academic's perceptions of the benefits of using the two medium.

Keywords: Innovation, technology, virtual worlds, Second Life, higher education, machinima, video, online learning.

1 INTRODUCTION

Presented are the perceptions of two academics in diverse disciplines in the professions: one in Education and the other in business, more specifically, Accounting. Both academics have used machinima in-world (in a virtual world) and video with their undergraduate students. Machinima is presented through avatars acting out scenarios using movement and audio, as you would if using actors. Therefore, interactions between people (avatars) and other people and/or objects are the main focus of machinima. Videos, on the other hand, through the capture of screen movements and still shots, have the capacity to show step-by-step procedures on how to undertake certain tasks. Both are extremely useful resources for Accounting students. They can also be useful for pre-service teachers when required to understand how a task may be undertaken using computer software. An example could be demonstrating how to create a video that could be used in the classroom.

Machinima can be used to demonstrate tasks that are difficult, if not impossible, to undertake in the real world. In Education, students can view machinima to see demonstrations of a lesson being conducted (see, for example: http://virtualprex.com/machinima.html). Pre-service teachers can view machinima recorded to demonstrate how to conduct a less, how not to conduct a lesson, or what to do in different scenarios in a real classroom. They assist the pre-service teacher in learning without having to go through the process themselves in a real classroom through trial and error with school students.

Using machinima has been successful in demonstrating how a transaction could take place in a retail business such as demonstrating how to undertake a stock take (see, for example “Computers@Armidale First Transaction” YouTube video: http://www.youtube.com/watch?v=PDY9KiTzcP). In Accounting, machinima can explain concepts that are difficult to understand without being in a real office environment. Machinima can explain tasks through authentic learning experiences. The use of all types of video are an excellent tool to demonstrate transactions that require screen capture.

Both machinima and video have a role to play in the right circumstances in Higher Education through authentic learning experiences in the professions. Whilst machinima provides for deep learning and enables the student to fully understand a process, it does have a comparatively high cost. This cost is not in physical dollars but in time. A 20-minute screen capture video can be created in 20 minutes. Investing a further 30 or 40 minutes for editing can significantly improve both its visual appeal and effectiveness. From within one hour of starting, a useful learning tool could be recorded and made available for viewing. Machinima, on the other hand, could take two full days, multiple people with
diverse skills to produce a video that covers far less than screen capture. It is not as time-consuming as scripted, acted, and edited video production, but close.

2 BACKGROUND AND CONTEXT

The University of New England (UNE), a regional university in northern NSW, Australia, has approximately 22,000 enrolled students. Eighty percent of students opt to study online (i.e., off-campus, by distance) [1]. Students utilize a Learning Management System (LMS) to access their teaching and learning materials. The authors have extensive experience in providing a variety of online resources as teaching and learning tools for their students; video, both machinima and traditional, are just one of these tools. Therefore, it is important for their online students to be provided with engaging learning materials, not just downloadable PDF documents. The authors have been exploring a variety of online tools over the past ten years and the use of videos (traditional and machinima) have proven engaging for students.

2.1 Objectives and Learning Outcomes

All units/subjects at the University of New England have unit objectives (i.e., what students should get out of the unit if they choose to study it) and learning outcomes (i.e., what they should achieve if they study the unit). For the Education pre-service teaching unit, one objective for students is to develop their abilities to use Information Communication Technologies critically and effectively. A learning outcome pertinent to machinima/video is to demonstrate knowledge and understanding in order to be able to “analyse, plan, design, implement and evaluate teaching strategies for using ICT to expand curriculum learning opportunities for students”, [18, online]. For the Accounting unit, the objective is for students to receive a comprehensive introduction to the theory and practice of Financial Accounting. A learning outcome relevant to machinima/video is to evaluate and interpret accounting literature from a range of sources” [17, online]. The authors used machinima and video to assist their students to achieve these unit objectives and learning outcomes.

3 LITERATURE REVIEW

Machinima has been defined as computer animated video combing animation and cinema that is filmed in a virtual world and distributed online, such as through YouTube, and is influenced by the virtual world it is created in [2]. “Machinima production has widened to incorporate elements of virtual performance, where human operators manipulate the game characters – like virtual puppets with in-role performance” [3]. It is often thought of as the “convergence occurring between computer games, films and the Web” [4, p. 65]. Machinima first emerged in 2001 in the gaming community and evolved to be used in film festivals and public presentations [5]. Machinima is cost-effective, time-efficient and offers a large amount of creative control when compared to real-world filmmaking [5]. However, it can be time-intensive for students who are not so accustomed and proficient at creating machinima, although it is rewarding and enables them to tap into their creative mindsets [6]. Educators are drawn to machinima as there are sometimes limitations of traditional delivery modes because of this cost of production, or, the harm it could cause people in real life if they were to act out the scenarios for real, or it is actually impossible to replicate in real life [7]. It can provide an authentic learning environment where there are increased levels of active learning and engagement [7], [8]). “Machinima has matured technically and artistically, attention to it has focused on its significance as a low-cost, efficient way to produce animated films that compete with hand-drawn or digital frame-based techniques” [9, pp. 26–27]. As noted [10, p. 7], “machinima can be created and reformatted for the web, television, DVDs and large display screens…. It provides us with an economical way to create visual media that can be used for instruction, outreach and marketing purposes”.

The use of machinima in Higher Education has been due to real-life video production requiring high budgets for crews and locations. Often, academics will collaborate to create machinima, but also, so do students. Students make machinima by allocating roles, writing scripts and allocating directors/producers, as you would in a real film. They realise that not one person can create the machinima by themselves but they work in teams to create a final product [11]. These students will often get recognition for their creations if posted to YouTube. When students create the machinima, they have to fully research the topic before they begin, providing them with searching skills [11]. The creation of machinima brings students together academically and within their school/department [12].
Machinima has been used for pre-service teaching training for English language arts, history and mathematics [6], to name a few. Live virtual world sessions are often made into machinima for later use by pre-service teachers and other academics [13], [14]. Machinima can also be used for reflection and self, peer, formative and summative assessment, which can supplement pre-service teacher training [15]. Machinima can also be created of school student’s work for viewing by a wider audience outside of the classroom [16]. The author has also used machinima for pre-service teachers demonstrating various aspects of teacher training, including classroom management (see, for example, http://virtualprex.com/dissemination.html).

In relation to the fundamental basic Accounting principles, students have often found them difficult to understand and in turn, this makes it difficult to progress with their studies and apply their knowledge in the real world, if they do not understand these basic principles [17]. Machinima can provide students with the opportunity to adapt to new situations by engaging students in Accounting practice and developing skills required for the profession [7]. Students can pool their skills to create the best output.

There are limited Accounting educators using machinima as a teaching and learning tool [8]. There has been a “long-standing Educational problem in Accounting Education of failing to help students to achieve higher order outcomes” [8, p. 419]. The limiting factor is that traditional delivery mode and the use of machinima could lessen this problem [8]. This led the authors to explore the differences between the two medium with their students.

4 METHODOLOGY AND DATA COLLECTION

The data presented in this article was gathered by visiting each author’s YouTube accounts and accessing the viewed data and discussing the choice of medium. The Education author has uploaded 120 machinima/videos to YouTube. The Accounting author has uploaded 79 machinima/videos. Most of the machinima/videos are open to the public for viewing, however, as some of these medium were used for teaching in a Higher Education setting, they have been made private and can only be viewed by the students. These videos views are not presented here.

The Education VirtualPREX project (Virtual Professional Experience, utilizing the virtual world of Second Life) provided approximately 75 machinima examples of how to teach various aspects of classroom management through the use of a virtual world classroom. The Education academic also provided several traditional videos created through screen capturing software. The pre-service teacher online project provided an overview of resources for teachers including eight traditional talking-head videos [20].

The Accounting videos provide 74 traditional screen recording videos and one machinima for use by the Accounting students. Many of these are in relation to using an Accounting Practice Set which is an effective learning aid for the students. Its objective was to replicate what happens in practice from the perspective of recording, categorizing, summarizing and reporting financial transactions. Fig. 1 provides a visual example of machinima and traditional video that a higher education degree student may expect as a resource in a variety of educational scenarios.

![Figure 1. Example of machinima and traditional video](image-url)
5 RESULTS AND DISCUSSIONS

The authors found that there were three types of traditional video/machinima created for use by their students. Presented in Table 1 is an analysis of the various types of video requirements of each of the three medium and what skills were required to create them. These are: machinima; videos created through computer screen capture of still images and on screen video; and videos using actors. Table 1 outlines what is required by an academic if they were to create video/machinima in any one of these formats, including the scripting of the video/machinima, the software/computer requirements, any editing requirements, the requirements of actors, the costs involved and how efficient they were to create time-wise.

Table 1. The requirements for using machinima and traditional video.

<table>
<thead>
<tr>
<th>Machinima</th>
<th>Traditional Video (screen captures)</th>
<th>Traditional Video (with actors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Script required</td>
<td>Script an advantage</td>
<td>Script required</td>
</tr>
<tr>
<td>Specialist computer screen capture software required</td>
<td>Specialist computer screen capture software required</td>
<td>Specialist video equipment required</td>
</tr>
<tr>
<td>Specialist editing software required</td>
<td>Specialist editing software required</td>
<td>Specialist editing software required</td>
</tr>
<tr>
<td>Actors/others minimal requirement</td>
<td>Actors/others not required</td>
<td>Actors/others required</td>
</tr>
<tr>
<td>= $ - limited</td>
<td>= $0 - inexpensive</td>
<td>= $$$s - expensive</td>
</tr>
<tr>
<td>= time – reasonably time consuming</td>
<td>= time – can become very quick</td>
<td>= time – enormous</td>
</tr>
</tbody>
</table>

Overall, traditional video through screen capture is the most efficient in relation to expense and time. It is also a preferred option of both of the authors when they wish to put together a resource very quickly. The traditional video, which neither of the authors have created, would be the most professional as a student resource, however, it is very time consuming to create and expensive. Machinima, on the other hand, was a preferred option for the Education author as it was found that teaching scenarios were easier to create. There was no need for a classroom of students that would have been extremely difficult to create due to having children as actors. Therefore, for the Education author, this was the preferred medium for creating some of the resources, where screen capture was not an option. The Accounting author found that screen captures were the preferred resource to create because most of the video that was created were relating to screen captures with voice-overs.

5.1 Education Context

In the Education context, to view the full suite of machinima and videos the author created, please see: https://www.youtube.com/user/JassEasterman/videos. An overview of a selection of YouTube videos views is presented.

5.1.1 Machinima

Four examples of machinima are presented, including the number of views, the name of the machinima and the URL to view the machinima.

- Example 1 - 561 views: Introduction to the project - http://tinyurl.com/hxrw77t
- Example 2 - 256 views: An example lesson of teaching story writing - http://tinyurl.com/juo8jwj
- Example 3 - 161 views: An example lesson demonstrating how the machinima could be used for assessment purposes (lesson on shapes) - http://tinyurl.com/zmbdkzh
- Example 4 - 44 views: Exemplar lesson - http://tinyurl.com/zmku9h3
5.1.2 Traditional video through screen capture

One example of a traditional video through screen capture is presented, including the number of views, the name of the machinima and the URL to view the machinima.

- Example 5 – 31,796 views: How to invite people to view a private YouTube video - http://tinyurl.com/z3vdql7

5.2 Accounting Context

The Accounting academic has mostly created traditional screen capture videos. They have been viewed by a large audience as outlined. To view the full suite of Accounting videos, please see: https://www.youtube.com/user/Accountingintro.

5.2.1 Machinima

One example of machinima is presented, including the number of views, the name of the machinima and the URL to view the machinima.

- Example 1 - 852 views: Computers@Armidale First Transaction - https://tinyurl.com/jw2wnzy

5.2.2 Traditional video through screen capture

Six examples of a traditional video through screen capture are presented, including the number of views, the name of the machinima and the URL to view the machinima.

- Example 3 – 21,766 views: Accounting Worksheet - http://tinyurl.com/z52pja8
- Example 4 – 2,701 views: Practice Set Getting Started - http://tinyurl.com/jf8f8l
- Example 5 – 12,693 views: Contra Accounts - https://tinyurl.com/lwugxk8
- Example 6 - 8,228 views: Depreciation – What it is - http://tinyurl.com/zvf8gcj
- Example 7 – 6,090 views: Role of Accounting - http://tinyurl.com/hw8q9yq

Feedback from students was gathered from direct emails, discussions on the Learning Management System and end of unit official Student Evaluation Feedback. Overall, the feedback from students was positive in relation to all media they accessed during the studies in the Education and Accounting units outlined here.

The authors have spent a considerable amount of time creating these resources for their students. They found that students did not have a preference for machinima or video so long as the correct medium was used to create the resource. The authors found that the easiest, quickest, less time consuming and cost effective medium was through the creation of traditional screen capture video, then the creation of machinima and finally, traditional video using actors the least favoured.

6 CONCLUSIONS

The authors conclude that there is no preferred way for creating video resources for students except that one should take into account ideas presented in Table 1, where there are cost and time considerations. Both authors have created comprehensive video resources for their students, but neither have gone down the traditional way of using actors (mostly due to the cost constraints, but also the time constraints of creating the video and editing). Editing the videos, both the screen captures and machinima, is the most time consuming factor to consider when creating videos. Both require a title page, editing video with text and images (i.e., arrows), and end credits. Machinima, however, does take a lot longer to stitch together the in-world video, ensure voice overs line up (or lip sync works) and therefore is a lot more time consuming to create than screen capture videos. The authors recommend that anyone wanting to create their own video resources should use the tools at their disposal and the skillset that they have to create these.
REFERENCES


