

USING VIDEOS IN THE TEACHING AND LEARNING OF ACCOUNTING

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“I hear and I forget. I see and I remember. I do and I understand”.
Confucius (551 BC–479 BC)

Abstract

The purpose of this paper is to report on the evolution of an accounting classroom through the production of videos using the screen capture software Camtasia StudioTM. The videos were designed with an understanding of learning styles in mind as they assist university accounting students learn new skills and difficult concepts.

Definitions:

M-learning: Mobile learning, e-learning on the move.

Podcast: an audiovisual file on a generic mp4 device.

VLE: Virtual learning environment.

Vodcast: a video podcast, a video clip designed to be used in a portable device, also known as vcast, videocast, vidcast.

Introduction

Over a decade and a half ago, Martin et al. (1995, p. 78) talked about an innovation in the teaching and learning of accounting in higher education via the use of “a series of video cassettes in conjunction with a workbook, a spreadsheet package and tutorial consultations . . .” to teach an introductory accounting subject in an undergraduate degree program. Their primary motivation, apart from stimulating student learning or engaging them in critical thinking or reflection, was “. . . the need to modernize the teaching of accountancy” through focusing on “. . . teaching excellence and improvement in accountancy teaching methods” (1995, p. 77). The learning of these students was important, but not as important as the potential to improve teaching through the use of a contemporary piece of technology.

In *Teachers and Machines* Cuban (1986) claimed that in the previous 66 years, innovations such as radio, television and the overhead projector were held up as

beacons of change in the classroom, yet none of those technologies had any lasting impact on learning or teaching. Why would the use of videos in the teaching and learning of accounting in 1995 be any different to any of the innovations mentioned by Cuban?

Fast forward to the 21st century, where the use of the word “videos” in educational research has been largely replaced by the Web 2.0 technological term “vodcast.” Although videos (these days, largely DVDs) still play a role in the physical and virtual learning spaces of higher education, the vodcast is the latest incarnation of the humble video, where students can engage in “m-learning,” when in 1995 they would have been simply engaged in ‘learning.’ However, for the purposes of this paper, I will continue to use the term “videos” and not “vodcast” as the videos I will discuss later were designed not for portable devices such as MP3 players, smart phones or tablets, but for a computer.

Literature Review

This literature review does not differentiate between research into podcasts and vodcasts as it has been common for researchers, educators and scholars to define vodcasts as a video podcast. There have been a number of studies on the use of podcasts in education (Jarvis & Dickie, 2010; Kamel Boulos et al., 2006; Milman & Walker, 2010; Pearce & Scutter, 2010; Robson & Greensmith, 2009; Scutter et al. 2010). Although these studies have been undertaken into the use of podcasts in education, McKinney et al. say “Given the relative newness of podcast technology, it is not surprising that there is limited research available on this topic” (2009, p. 618). They further contend that

The current generation of college student has never known a time before cell phones and personal computers. They are eager to use technology to enhance their learning. More research is needed to discover best practices of integrating the new technology into the classroom . . . (p. 623).

It is important now to think about how new technology can be used to enhance and to support teaching and learning (Taylor & Clark, 2010). It is also important to think about how educational applications can be applied to these new technologies. Popova and Edirisingha stated “There is a growing body of research on the educational applications of the podcasting technology. But research linking podcasts to learning outcomes is still scarce” (2010, p. 5034).

Kamel Bouros et al. believe that future studies should focus on the co-relationship and positioning of Web 2.0 applications within a student-centred learning environment by establishing “. . . key activities that can be evidenced to enhance student learning experiences and deepen levels of student engagement within digital learning environments” (2006, p. 6).

Robson and Greensmith (2009) investigated the use of audio podcasts for an accounting module in an undergraduate degree program. Even though the podcasts were created with the intention of enhancing m-learning characteristics amongst their students, they found that only 12% listened on an MP3 player while 97% of the students used the podcasts on their computer. However, they also found that 40% of the students accessed the podcasts outside the normal 9 a.m. to 5 p.m. time slot which suggested that students did benefit from accessing the information in a time of their choosing.

Scutter et al. say that "Podcasting may also accommodate a wide variety of learning styles" (2010, p. 180). They claimed that information received through more than sensory channel is processed better than receiving information through only one channel.

In a study on the use of podcasts to support the teaching and learning of physical geography, Jarvis and Dickie identified that students with a visual approach to learning believed that podcasts were a valuable learning resource: "The use of multi-modal representation appears to foster more effective learning and preparation with the literature regarding the benefits of dual processing" (2010, p. 183).

Although Milman and Walker focused their attention to the empirical research in higher education on podcasts, they suggested that teacher educators and teachers use podcasts with the purposes of creating supplementary, substitutional and creative materials in order ". . . to meet diverse learner needs and learning styles, and to differentiate instruction" (2010, p. 3316).

Background

I have been teaching for over 30 years. In that time, there have been many technological innovations that have helped me in my daily role as a teacher, and to a greater extent, helped with the learning of my students. In 1981, I had access to an Apple 2E (I shared it with 15 other teachers), where today I am logged on to the Internet with a personal laptop using wireless technology. In 1981, I sometimes showed my students a 16mm film in the school gymnasium or asked them to watch a particularly relevant television show or documentary at home, but in 2011 they watch YouTube on their mobile phones/tablets/MP4 players/computers and can download videos and music anytime they want. In 1981, I used the chalkboard. In 2011, I have not only the whiteboard, but access to a data projector linked to my laptop computer via the Internet. In 1981, cutting and pasting was a potentially dangerous activity in the classroom with scissors, glue and paper, whereas in 2011, cutting and pasting has been digitalised!

In one particular post-graduate subject I teach (Accounting Information Systems) in the Masters of Accounting a learning objective is that all students are required

to “record a set of transactions using double entry accounting software.” The external professional accounting bodies in Australia that accredit our accounting degree deem that this must be a commercially available software package and not one used only for the purposes of education. In 2011, I will be using Quickbooks Premier (Student Version 19), which is a student/education version of the commercially available software.

Learning Approach 2002–2008

Between 2002 and 2008, the learning objective was achieved by having students attend one 90-minute session per week for 6 weeks. Over this 7-year time period where these computer labs were used, I was the teacher/facilitator for at least six of them in any year. As the convener of the subject, I was also responsible for training and advising the other laboratory facilitators who were current students who had achieved a very good result in the subject previously. These students had no prior teaching experience, and many of them were taught by me, and then employed by me as computer laboratory facilitators. In the years between 2002 and 2008, there were about 15 of these computer labs operating in any given calendar year, so we had anecdotal evidence from nearly 100 laboratory classes to determine what worked and what didn't in the students' learning of the accounting software. Assessment for this learning objective was the completion of a set of transactions for a typical Australian small retail business which accounted for 20% of the total assessment for the subject.

For the first two lab sessions, facilitators would adopt a teacher-centred pedagogy and demonstrate all the types of transactions necessary to complete the assessment by showing students how to do them. This was done with the computer and data projector. However, students would soon begin to work on their own or in small groups, ignore the facilitator and only seek assistance when and if they needed to. Between the 3rd and 5th session, the facilitator moved to a student-centred approach and would only go to students who wanted and needed assistance. In the 6th lab, students were encouraged to have their work finished so they could compare their answers with other students. Where they disagreed on their final figures, they had to determine who was correct and who was not through auditing their own work. For many students, this proved to be a worthwhile task as they both had to work systematically through their assignment and compare what was recorded and the figures generated. Many mistakes were found and corrected in this way. However, this rarely happened because students typically left the bulk of the work to the last possible minute and did not avail themselves of the chance to compare their work with others. The nature of the task was that all students should have finished with same result — as there was only one solution possible. Even though the computer labs were run for 6 weeks, a number of students did not attend some or all of the sessions. This resulted in many questions coming to me from students as the convener, via e-mails or office visits. These were the students who had left the work until the last moment.

Reason for the Technological Innovation

In late 2008, the university decided to abandon all scheduled classes that operated for 90 minutes. Due to timetabling issues, the only classes from the start of 2009 that could be timetabled were to be ones that were of an hour or multiples of an hour. We had to make a decision to decrease the labs to one hour spread over a 9-week period or find an alternative for students to complete the learning objective. There was no chance of being able to go to a 2-hour computer laboratory due to the lack of computer rooms available. A decision was then made to stop the computer labs and start using videos. When I told the administrators of the business school, they were pleased with my decision — because they would be able to save money by not employing any student facilitators!

First Videos — Camtasia Studio 3

I wanted to know if I could improve the learning of my accounting students in their completion of a learning objective by using the latest digital technology available to me. The screen capture software Camtasia Studio 3 was suggested to me as a possible tool in the production of videos, and with the help of the university television studio and IT support staff, I recorded 15 instructional accounting videos over the summer of 2008/09 for use in classes for the start of the 2009 calendar academic year. Each of these videos was between 1 and 10 minutes, with about 4 minutes being the average length. The quality of the vision and sound were exceptional as they were made in a fully functioning television studio on campus with expert video, editing and sound technicians available for advice. I played no part in the final editing or post production, or even the uploading of them onto the Blackboard VLE.

These videos were not scripted as I relied on the experience gained over many years teaching in a traditional classroom environment where the prevailing pedagogy floated between teacher centred (in the initial labs) to student centred (from about lab 3 onwards). Because Camtasia records what appears on screen, together with a professionally recorded voice over, during the recordings I imagined I was in the classroom with the class sitting at their computers. In this traditional classroom environment, students learned more easily if they saw how to complete a task, heard a facilitator talk about it, and had the chance to then practice for themselves. If they missed something, they could interact with the facilitator and seek assistance with another verbal explanation, ask them to see a visual display again, or just more time to try it again. The videos were designed with a learning style methodology in mind for students to replicate a one-on-one learning situation with an expert by using a simple visual-auditory-tactile learning style approach (Dunn & Dunn, 1993).

Learning Styles and Student Centred

A feature of the videos was that students could listen to the explanation of the transaction and how it is recorded (and why), and at the same time, they could observe the transaction completed visually. They were then encouraged to attempt

the transaction for themselves in the completion of their assessment task. If they made a mistake, they had the chance to replay the video as many times as deemed necessary. The Dunn and Dunn (1993) learning styles model also assumes that students have many other preferences for learning other than the visual/auditory/tactile norm. These other learning preferences include being able to drink and eat while learning, choosing the time of day they wish to learn, working on their own or in groups, self motivation to complete the tasks, room temperature (some prefer warm or cold rooms), learning with sound (mp3 players/television/radio in the background), persistence and applying their own structure to the learning task.

The pedagogical approach to this kind of self motivated learning is entirely student centred. Students are encouraged to think for themselves, interact with the videos and other resources available to them to work alone or in groups. Even in this student centred/constructivist approach, from time to time students will need to seek advice and assistance when they can't progress or make obvious mistakes. What makes this a totally student centred learning approach is that the student decides when to ask for help.

Learning Approach 2009–2010

For the next two years, students did not attend any computer labs to learn the accounting software. Instead, all the necessary videos were uploaded onto the Blackboard VLE and students had the same amount of time available to complete the assessment as before (six weeks). Without keeping any records of the number of student e-mails or office visits by students, the number of last-minute questions reduced considerably. There was also a slightly improved assessment average, but no research has yet been done to determine why this might have occurred. Anecdotally, students said that they liked the videos and liked being able to learn in their own time. Also, there were still students who did not watch the videos until the 6th week, and, as a consequence, were less than successful in their assessment results.

The videos were not designed to be viewed on anything other than a normal size computer screen. This was because of the interactive nature of the tasks and learning styles methodology that required students to watch, listen and then do. Viewing the videos on a small screen was not considered an option, so the videos were not produced to be downloaded onto mp3 players, tablets or smart phones. Also, the nature of the content was that the computer accounting software is not designed to be viewed on a smaller screen than a normal sized laptop computer.

2011 — New Videos with Camtasia Studio 7

In November 2010, I began learning how to use the latest version of Camtasia Studio. In the current version (Camtasia Studio 7), there are many more tools available to the user. In the older version, the videos were simply a screen capture with voice over and no changes to the on screen appearance. These include (but are not limited to) the ability to zoom in and out, adding callouts and captions, adding title pages with captions and music backing, adding in a table of contents,

various visual and auditory cursor effects, transitions between sections of the video (much like the transitions in PPT), the ability to add in quizzes, and additional sound capabilities such as adding a musical backing, fading up or down and cutting out background noise.

Over the summer of 2010/2011, I re-recorded all of the old videos using the new version of Camtasia and also, using a newer version of the Quickbooks accounting software. Because of the new tools available in Camtasia, I recorded some more videos utilising these tools instead of providing screen dumps of the accounting software on a Word document which I had done in the past. Throughout this year, we will be experimenting with a variety of production alternatives such as the videos being able to be viewed on iPads (tablets) and iPods (mp3players). Only then can they be labelled as 'podcasts.' (See Appendix 2.)

Potential Research Questions

These videos are being used in a number of sites of my university, both internationally and on shore in Australia. Up until this year, we have not formally conducted any research into how students are learning with these videos and what they think of using them. Again, feedback from our off-shore partners is that students seem to like learning with them. The added bonus of the videos being used in Vietnam and Malaysia is that almost all of these students speak English as a second or even third language and they appreciate hearing a native English speaking lecturer explaining things to them. They say that it helps with their English listening skills.

After the complete overhaul of the video series, and the production of new ones, it is now time to ask some important questions:

- Did the videos assist students in learning the accounting software better than the more traditional method of learning in a classroom?
- Does the production of the videos facilitate the use of individual students learning styles?
- Was the improvement in average assessment results a perceived one or a real one? (It should be noted here that the assessment tasks have not significantly changed in the past 8 years. I use six similarly written case studies on a rotational basis. Each of the cases has a similar degree of difficulty and similar transaction numbers and types.)

- How do these videos change the architecture of learning and the evolution of the classroom?
- Can Camtasia, or any other screen capture software, be used in other areas of the subject and if so, what impact might that have on learning and pedagogy?
- Does when a student downloads or watches the videos make any difference to their level of engagement?
- Can the videos be equally as effective on the different user platforms (computer, iPad, iPod) or is one better than the others?

We also teach similar accounting subjects in two different countries — Vietnam and Malaysia — and they have been using the accounting videos for the past few years. This raises two other important questions.

- Are there any cultural differences or similarities in how students from other countries learn with this technology?
- Does the use of the videos affect the level of student engagement differently in each of these countries?

Where to Now?

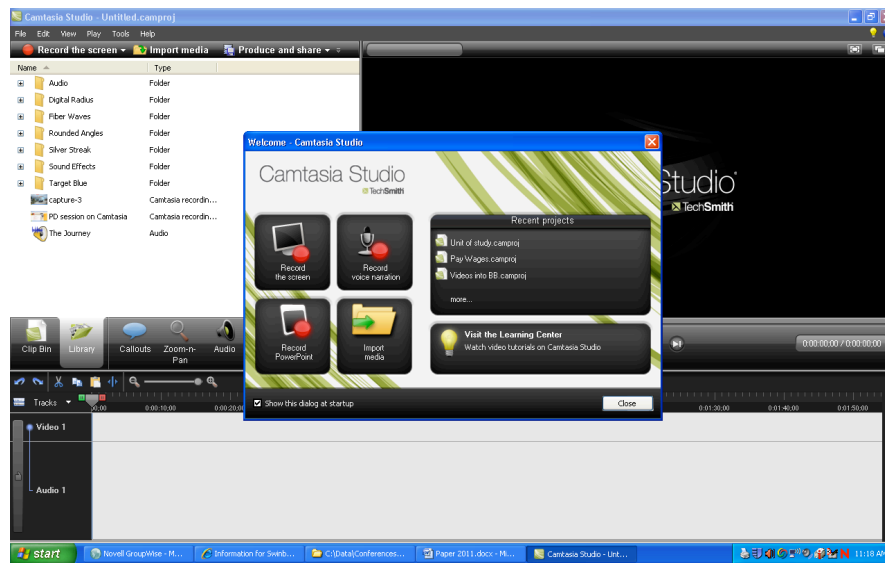
The primary purpose of this paper is to be interactive between my university and the wider educational community. I am seeking feedback from international educators and researchers on how best to design a research study and proceed to gather data to respond to some, all, none, or new research questions that may not be mentioned above. I believe that the videos have made a difference, but at this stage, I don't know how I know. Students have told me they liked them, and the number of last-minute questions has slowed considerably, but are there other factors at play? Only time will tell!

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Appendix 1



Appendix 2

