

Blended Delivery: Multimedia in the Mix

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Abstract

This paper provides a background to blended delivery methods and discusses the relevance of alternative delivery options to the future of higher education. The paper also uses a case study to illustrate the design and development of a multimedia presentation as part of a blended delivery initiative for an ICT degree. The results of a survey conducted with students are reported on, with responses indicating that multimedia presentations have the ability to enhance learning and increase interest in computing topics.

Keywords: blended delivery, on-line learning, e-learning, resource-based learning, higher education, multimedia.

1 Introduction

Blended delivery is a term used to describe a variety of different delivery and learning methods. These delivery methods can be employed in classroom-based and resource-based models of on-campus, off-campus, and online modes. Over the past 12 months, lecturing staff in the Bachelor of Information and Communications Technology degree at UCOL have been investigating and developing a variety of resources to support blended delivery. As part of this initiative, multimedia presentations were developed and used to support the delivery of the theory component of a first year eCommerce paper. This paper outlines reflections of the lecturer involved in the development of the applications and the learning experiences of the students.

2 Background

“The population of today’s learners can be described as being more than 25 years old, with a job and/or family responsibilities. The vast student body requires a flexible program that can accommodate job-related travel, need for a more mobile learning environment and a learning method which may be more entertaining and interactive than the traditional ‘stand and lecture’ method” (Krishnamurthi, 2004).

To meet the needs of this ‘student body’, there is a requirement for significant change in how courses are presented and the course materials selected. There are a number of different terms given to course delivery and new ways of learning. Nicols (2001) believes that the present education environment is a minefield of terminology, particularly when the convergence of open/distance education and conventional modes of education is considered. According to Nicols and Suda (2001) ‘resource-based learning’ is the overarching term given to describe the emerging education paradigm. Ryan, Scott, Freeman, and Patel (2000) advocate the National Council for Open and Distance Education of Australia definition of resource-based learning, which describes it as “an integrated set of strategies to promote student-centred learning in a mass education context, through a combination of specially designed learning resources and interactive media and technologies”. The term ‘e-learning’ is a subset of resource-based learning in that e-learning presents the designers of courses with additional resource options that can complement the overall course design (Nicols and Suda, 2001).

“The concept of ‘blending’ grew out of the successes and failures of e-learning. Although some instruction is appropriate for online delivery, there are still many contexts in which it appears that learning is best served by some combination of classroom, web-based training, synchronous online delivery, or other electronic sources” (Douglas, n.d.).

Blended delivery is a continuous process, rather than just a ‘learning event’ (Davidson, n.d.). Blended delivery provides students with a mixture of lecture and online work as well as group-oriented work, depending on the educational objectives. As well as class-room based material, learning resources can include computer-assisted instruction, print based workbooks for independent study, multimedia packages, streaming video, streaming audio and SafariU books. These resource-based materials support students who may wish to study off campus and provide students with all of the formal material provided in face-to-face sessions in web-based format. Additionally, learners can benefit from multiple delivery methods that accomplish the same learning objective.

Inglis, Ling and Joosten (1999, cited in Inglis 2003) pointed out that distance education programs, including distance education programs delivered online, differ according to whether they adopt a classroom-based or a resource-based mode of delivery. “Classroom-based learning is learning that takes place through dialogic

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interaction between student and tutor and student and student. Resource-based learning is learning that takes place through interaction between the student and self-paced instructional materials” (Inglis 2003)

There are many elements of traditional tertiary instruction that are not as effective online Hirschheim (2005). Some of the elements identified by Hirschheim as being affected in some way by online delivery were: loss of lectures; loss of information delivered in visual and verbal formats; and loss of the facilitator’s views and perspectives.

Multimedia presentations can be seen as one possible solution to overcome the potential losses described above. Multimedia presentations refer to computer-aided graphics that use colour or sound to involve an audience. This also includes charts, videos and animations. They can be used both as presentation tools for lecturers in the process of teaching, and also as aids for students to work with independently. However, care needs to be taken when designing such presentations.

Wenzel, Laycock, Michalayluk and Nowlan (1999) believe that designing a multimedia presentation is complex and interwoven. They suggest that the design needs to consist of three main processes: Information Design, Interaction Design and Presentation Design.

Information Design is a guide to organising the information and presentation medium and includes such considerations as clarifying the communication goals and arranging content into a design that serves those goals.

Interaction Design organises the navigation and look of the presentation and considers how users will control where they go and what they want to do, how to create an interesting journey, and make the experience as easy and intuitive as possible.

The Presentation Design aspect is a guide on how to put the presentation together. Considerations include defining the style and composition of elements and developing the big picture strategy for putting pieces together (Wenzel, Laycock, Michalayluk and Nowlan, 1999).

3 Case Study: The development of a multimedia presentation for Year One eCommerce Principles paper

In 2005, the lecturing staff from the Bachelor of Information and Communications Technology (Applied) degree received a grant from the UCOL Innovation Fund to investigate and develop blended delivery options. A project team was established consisting of the degree lecturing staff. The project goal was to investigate, design, and develop resources to support a range of delivery options which included both classroom-based and resource-based material. These resources were to cater for both distance and face-to-face learning.

The objectives of the project were to:

- Reduce barriers to participation in tertiary study
- Increase enrolments

- Improve the use and management of the learning management system (Blackboard and Moodle)
- Provide flexibility in learning both on and off campus.
- Develop resource based materials
- Lay the foundations for a blended delivery model to extend to all years of the degree

A decision was made to trial the use of a multimedia application to provide a more stimulating delivery and learning experience for a first year paper - eCommerce Principles. A model of online and face-to-face delivery was to be trialled as it was acknowledged that by just placing material on-line, there would be no assurance that it would be viewed, enjoyed or fully understood. As PowerPoint presentations had been the normal way of delivering most lectures for this paper in the past, it was decided to enhance this delivery method by making it as entertaining as possible.

It was determined that the presentations needed to contain the following:

- Sound (voice and music)
- Concise notes to back up the narration
- Automated slide transitions
- Humour
- Be small enough to download on a dial-up connection.
- And finally, the material should be stored in a format that could be easily updated.

The development of the presentation first considered the following:

- Length of the presentation: this was purely subjective. It needed to be long enough so as not to be boring, and short enough to get the main points across. Initially the duration for the presentation was to be around 20 – 30 minutes.
- Learning material to provide the narration part of the presentation. This was obtained by books and the Internet.
- Music (type, length and number of tracks) for the presentation. The idea was to provide just enough music to break the monotony of continual narration. A range of music types were selected (fast and slow) on the condition that they were ‘catchy’ and no more than 15-20 seconds in length. There also needed to be around 10 to 15 different tracks. Some could be used more than once.
- Obtain images to enhance the presentation.
- Determine the software required to record the voice narration. The software chosen was “Audacity®” which is a free and open source software for recording and editing sounds. The reason this software was chosen because of its ability to record in multi-track format, which allows different sounds

to be placed into the narration, wherever you require it.

- Determine the software to compile the soundtrack, PowerPoint slides and any media necessary to enhance the presentation. Essentially this software needed to be similar to a movie editing program. Camtasia Studio was selected for this process as it allows easy recording of your screen, PowerPoint presentations, voice, and Web camera video.

Once the resources were available, the first step was to record the soundtrack. Doing this for the first time was challenging and very much trial and error.

The recording was completed in small chunks each about 1 – 2 minutes in length, with each subject having its own separate track. This was done deliberately, so if changes needed to be made for future presentations, that track could be changed without affecting the rest of the recording. The sound track was made up of a combination of narration and music. Figure one shows the ability of Audacity software to record in multi-track mode.

Figure 1: Audacity sound recorder.



3.1 Creating the PowerPoint presentation

The next step in the presentation development was to create the PowerPoint. This proved to be a very long process. The ideal presentation would require a slide to change each time a key word or sentence was said in the narration or if an image needed to be displayed on cue. There were a number of ways to do this but it was decided to create a new slide for each state change. For example; to create a single slide which eventually contained 5 bulleted points required 5 separate slides, with each slide adding a new bullet point. A presentation lasting around 20 minutes could require around 100 slides. This became necessary if you wanted to keep the presentation interesting.

Each individual slide was saved as a Portable Network Graphic (PNG) image. PowerPoint makes this easy as it saves each individual slide as a batch process.

3.2 Putting it all together

Once the soundtrack and PowerPoint slides were created, Camtasia was used to combine them into a single movie like presentation.

This involved inserting the soundtrack onto a time-line, importing the PowerPoint images, and inserting each

image above the time-line. Each image was stretched along the time-line appropriate to the narration. As the narration continued, new images were added. Additions are not limited to images, as movies or flash animation can be added to the time-line as well. Figure two shows Camtasia in an open format ready to receive media files for insertion onto the timeline.

Figure 2: Camtasia



The presentation was finally saved into a macromedia flash format, viewable from a webpage which was also created automatically.

The first presentation had an eventual duration of 23 minutes with a file size of 12 megabytes.

4 Results

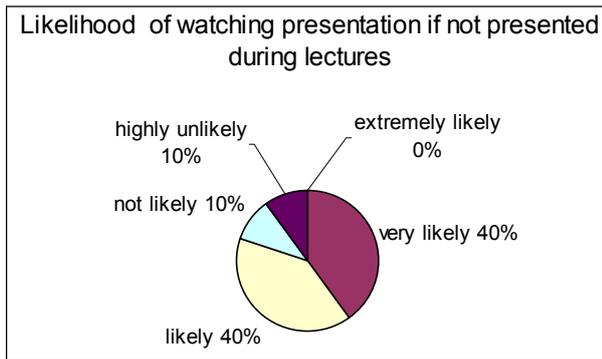
The time taken for the first design and development of the completed presentation was approximately 40 hours. Subsequent iterations were completed in a much shorter timeframe, due to familiarisation with the tools and techniques needed.

From the original 20 minute flash file created, the overall presentation time was between 35 - 40 minutes. The presentation was used in the scheduled lecture timeslot and was interrupted by the lecturer in a number of places to reinforce certain points. The students were able to easily recall key points when asked at the end of the presentation and responses to the presentation were enthusiastic.

After two similar presentations were conducted, a survey was conducted to gather feedback from students as to effectiveness and the potential for off campus learning. Ten students took part in the survey.

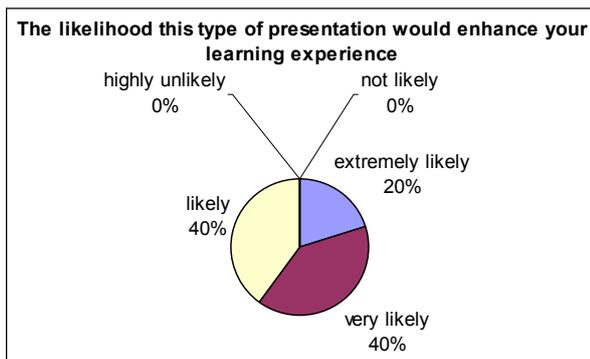
Students were asked what the likelihood was of them watching the presentation if it was not presented in the lecture, ie. taking the time to view the presentation from a student studio or from home. Figure three gives a graphical representation of the responses to this question. Eighty percent of respondents indicated that it was 'very likely' or 'likely' that they would.

Figure 3: Question One



Question two of the survey asked students what was the likelihood of this type of presentation enhancing their learning. Twenty percent of respondents said it was extremely likely, with the remaining 80 percent of respondents saying that it would be highly likely or likely to enhance their learning. Figure four shows that there were no students who responded with the ‘not likely’ or ‘highly unlikely’ categories.

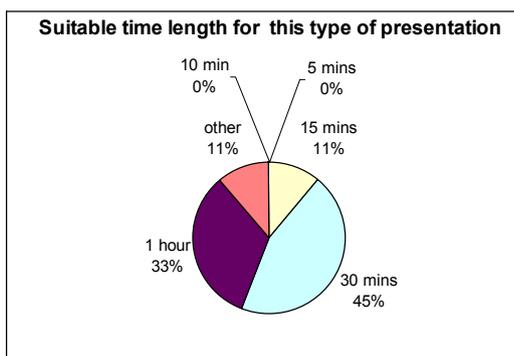
Figure 4: Question Two



Respondents were then asked if the presentations would compensate for anyone not be able to attend the lecture. Eighty percent of students believed that they would. This means that there are still 20 percent of students who would not find this a suitable replacement for face-to-face learning.

Figure 5 shows the responses when asked what would be the most suitable length of time for this type of presentation. Forty percent suggested 30 minutes would be suitable, whereas 30 percent would prefer 1 hour.

Figure 5: Question Four



Question five asked students if they had broadband at home. Eighty percent of students responded that they did. This has implications for future delivery as those students without broadband have indicated a request for a lower quality presentation that they can easily access with dial up.

Students were also asked to provide further comments about the presentations. These comments included:

- “the presentations would be great for revision”
- “animation enhances my learning”
- “very good as it provides an ordered set of thoughts”
- “using cutting edge technology in class is good”
- “the presentations are a great alternative to PowerPoint”
- “handouts to accompany presentation would be good too”

5 Discussion

A major challenge to any educator is the diversity of ways in which students learn. Some people learn better through association, others by experimentation, some respond to visual stimulation, others to sound. Multimedia applications generally cater to all of these learning needs in the one application. Additionally, students are able to proceed at their own pace and focus on those areas that are most interesting or helpful to them (Shuman, 2001). Students in this survey reinforce this by their comments such as “animation enhancing their learning” and “great for revision”.

The use of multimedia in a blended delivery course can be seen as invaluable because it enables different learning styles to be addressed by delivering content in different ways. Multimedia presentations can also help to overcome some of the challenges of on-line delivery identified by Hirschheim (2005). The presentations provide a structured platform for content, visual and verbal aids to be used, as well as allowing for the lecturer to provide their own views and perspectives.

There are significant considerations to be made when developing multimedia applications which are designed to be accessed via the web, such as file size and playback system configuration (hardware and software). While the uptake of broadband has increased dramatically in the past 12 months, a trade off may still need to be made between file size and the quality of the presentation ie. animation, video and sound. Copyright issues also need to be considered when using music clips outside the traditional classroom environment.

6 Conclusion

Blended delivery encompasses a wide range of delivery options. This paper has reported on the development of only one part of the ‘blend’. The experience of developing these multimedia presentations has given the creator an insight into the design considerations and the time commitment required. On reflection, the presentations could be improved by incorporating more animation and by including filmed interviews with industry professionals.

It must also be noted that while this type of presentation was concise, automated, humorous, and reasonably small in file size, not all students could see it being used as a full replacement for face to face learning. Some will still prefer this type of delivery to occur simultaneously alongside traditional face-to-face learning.

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