Educating an iPod generation: undergraduate attitudes, experiences and understanding of vodcast and podcast use

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There is an increasing pressure on university staff to provide ever more information and resources to students. This study investigated student opinions on (audio) podcasts and (video) vodcasts and how well they met requirements and aided learning processes. Two experiments within the Aston University looked at student opinion on, and usage of, podcasts and vodcasts for a selection of their psychology lectures. Recordings were produced first using a hand-held camcorder, and then using the in-house media department. WebCT was used to distribute the podcasts and vodcasts, attitude questionnaires were then circulated at two time points. Overall students indicated that podcasts and vodcasts were a beneficial addition resource for learning, particularly when used in conjunction with lecturers’ slides and as a tool for revision/assessment. The online material translated into students having increased understanding of the material, which supplemented and enhanced their learning without being a substitute for traditional lectures. There is scope for the provision of portable media files to become standard practice within higher education; integrating distance and online learning with traditional approaches to improve teaching and learning.

Keywords: podcasting; video; learning; technology; education; students

Introduction

Laurillard (2007) argues that digital technology has had a huge impact in commerce and youth culture but has yet to transform higher education (HE). She suggests that the key benefits of information and communication technology (ICT) should come in engaging uncommitted students and supporting flexible learning. Certainly the UK Higher Education landscape has changed. There are more students, programmes are bigger and more commute from home. Almost all work part-time to cover fees and living expenses, and most have round-the-clock access to ICT, on campus if not in their rooms. Traditional distinctions between part-time and full-time study, campus-based and distance learning, and work, play and study are breaking down, presence and absence are becoming blurred.

Land (2007) points out not only that convenience and speed are of the essence, there is a shift from literacy to multiple visual and technical literacies, and from knowledge as product to ‘knowing how’ as process. This change in epistemology can be welcomed with its attendant requirements to search, sift, evaluate and select;
requirements which may be built on to achieve scholarship and graduate competencies, and which should not be condemned as merely making plagiarism easier.

Laurillard (2007) points out that cycles of change in education are long and slow, while those in commerce, youth culture, the media and e-technology are very fast indeed. The potential of digital technology is transforming many of these areas and this needs to be extended to education to achieve the breadth of change required. HE needs to engage with a broader range of students and this sets two major challenges:

1. Educators need to be better at engaging students whose interest and persistence have not been developed before, at least not by education.
2. Education environments need to be better at allowing and supporting flexibility in teaching and learning.

Technologies such as podcasting offer a greatly enhanced virtual social context for learning. Both podcasting and vodcasting have seen a dramatic rise in usage over the last few years (Bullis 2005) and many researchers have investigated their use within an educational setting (Allison 2007; Golberg and McKhann 2000). Vodcasting and podcasting are the subscription to and subsequent automatic downloading of either an audio or video file to be played on a computer or iPod/MP3 player. There has recently been a surge in studies examining how this technology can benefit undergraduates (Belanger 2005; Earp, Belanger, and O’Brien 2006; Frydenberg 2006; Goldberg and McKhann 2000; Goldberg et al. 2006; Schultze-Mosgau, Zielinski, and Lochner 2004). While these studies have started to examine the role that podcasts can play in the development of flexible learning, none have compared undergraduate attitudes, experiences and knowledge of both podcasts and vodcasts. Given the increased rise in technology use and the concomitant fall in costs, it is prudent to examine undergraduate perceptions and choices, and to consider whether this technology will be disruptive to more traditional methods of delivering material, as Godwin-Jones (2005) suggests, or can sit easily alongside them.

Much of the early research in this area was stimulated by a study at Duke University (Belanger 2005; Earp, Belanger, and O’Brien 2006). They carried out a study spanning several years, giving iPods to students on various courses at their institution for them to download and listen to lectures online (Belanger 2005; Earp, Belanger, and O’Brien 2006). They found that although students did agree that the provision of entire lectures through online media might lead to a drop in attendance, they were beneficial for revision, understanding, and they enhanced the course experience.

Goldberg and McKhann (2000) delivered a series of undergraduate modules within a virtual learning environment (VLE) alongside traditional lectures. They found that subsequent test scores were higher, by approximately 14%, for those students who participated in the VLE course. Students in this study rated the VLE as more effective and as a more desirable method of learning than traditional lectures. The authors concluded that this was due to the extra control over the delivery of the lecture afforded by the VLE. In this environment, students can learn at their own pace and in a variety of modalities, accessing extra resources during the lecture.

Following on from this, Goldberg et al. (2006) delivered the foundation content of a physiology module over the internet in podcast format to enable formal lecture time to be spent applying and discussing content. Students were required to listen to the podcast lecture prior to attending the class. Students reported that they valued the emphasis on application over fact acquisition and that their understanding of this
particular module was greater than the other modules they had taken that year. Goldberg et al. (2006) also found that web-based lectures gave students a better understanding of the content of the overall course, and that this additional media gave students more time to think about the content and also the application of that content, compared with traditional didactic methods only. Student surveys (Goldberg et al. 2006) indicated that the educational value of delivering foundation material electronically and then using the lecture for discussion was of greater value than simply having the lecture alone. Faculty staff also reported students asking questions that were more superior than was historically the case. They concluded by saying that the richness of students’ learning experiences adopting this approach translates into a deeper understanding of the material, leading to increased retention. Schultze-Mosgau, Zielinski and Lochner (2004) found that medical students considered that the accessibility of material outside the specified times and locations of traditional lectures was of great benefit and that podcasts were as important to them as more traditional aspects of teaching.

Frydenberg (2006) included students in the production and development of podcasting materials. He found that students did not want to listen to the entire lecture again, rather they wished for ‘bite-sized’ podcasts to clarify the main points of the lectures. These and other studies show that podcasts and vodcasts may have educational value but it is not clear under what circumstances students would prefer to have an access to video and audio material, a vodcast, or an audio material, a podcast. Our study was designed to investigate this issue: whether podcasts and vodcasts would add to the educational experience.

This study was carried out in two phases. Part 1 examined undergraduates’ attitudes, experience and knowledge of using vodcasts and podcasts. Part 2 arose from a naturally occurring research opportunity, a national sandwich placement recruitment fair occurred at short notice for one day only at a venue nearby. This was of great interest to many undergraduate students at our institute. However, it clashed with a number of lectures which could not be moved or re-scheduled. A decision to record the lectures and release them on the same day as podcasts and vodcasts was popular with students and enabled response to and use of different formats to be compared. This study investigated how important students felt attendance at a lecture to be, how much recorded lectures could be useful as a substitute for attendance and how useful as a supplement for attendance, as well as which forms of online media students preferred and how, if at all, the uses differed.

We hypothesised that both the vodcast and the podcast media would be favoured by students; that students would feel more in control of their studies if they had access to online material, and that this would result in greater confidence in their ability to manage their workload.

Method

Participants

Participants were recruited from Aston University Psychology Department via passive opportunity sampling, making use of a first year research participation credit scheme. This is a scheme whereby students earn four credits for every hour of participation in studies, and are required to collect 96 credits are part of their first year course. Ninety three undergraduate psychology students took part in Phase 1 (53% of the target population), 87% were 18–21 years of age and over 80% were female. In Phase 2, 74
single honours second year students were recruited from Aston University Psychology Department via passive opportunity sampling. Students were primarily aged 18–21 years of age (89% of target population), 80% were female.

Materials
In Phase 1, three sets of broadcast material were used. A PowerPoint slide show of the lecturers’ slides (podcasts of the audio stream of the lecturers’ delivery of the actual sessions) and vodcasts of the actual lecturer delivering the session. The podcasts were recorded live via a tie-clip condenser microphone and a minidisc recorder attached to the lecturer. This audio stream was transferred to a PC and edited to remove ‘fluffs’ and dead spaces, then converted to the widely used MP3 format using the open source software Audacity. The edited files, together with updated RSS (really simple syndication) feeds were uploaded to a university-controlled RSS feed later the same day as podcasts. Two miniDV camcorders (one long shot and one movable close up) were used in order to acquire acceptable footage during each session. Windows Movie Maker was used for the video production and iSquint (Mac software) was used to optimise the MP4 file for iPod viewing (320 × 240 resolution) and internet download. All of the broadcasts were produced by an experienced production technician.

In Phase 2, three second year undergraduate lectures were videoed (Cognitive Psychology, Social Psychology and Advanced Statistics). The in-house media company was contracted to make professional live recordings of the lectures. Vodcasts and podcasts were made available to students through the VLE within 24 hours.

Procedure
At the start of the first year psychology practicals course, all students were randomly assigned to one of three groups, each of which would use only one type of online material: PowerPoint slides, vodcasts or podcasts. Students were instructed to stay with their specific broadcast group and not to use any of the other broadcasts over the duration of the course, one semester. Students assigned to the vodcast group accessed the broadcast in the same fashion as the podcasts by either subscribing to the RSS feed and having the latest lecture download automatically or by accessing the intranet and manually downloading the latest episode. At the end of the six-week period, a 25-item questionnaire was uploaded onto the VLE (WebCT). The questionnaire consisted of eight semantic differential items, seven Likert scale items and two free response items (see Table 1 for examples of the items used in this questionnaire).

For the second year students, the lectures clashing with the national sandwich placement recruitment fair were videoed and the podcasts and vodcasts resulting from this were uploaded onto the VLE within 24 hours of being recorded so students could access them and keep up to date with their course. A questionnaire seeking student views was placed on the VLE the week following the uploading of the material onto the VLE. The questionnaire consisted of 11 semantic differential items, 28 Likert scale items and four free response items (see Table 2 for examples of the items used in this questionnaire). The questionnaires were left online for a period of three months along with the relevant study information and consent forms. The students were under no time constraint to complete the questionnaire and could return to it any number of times until they submitted and were awarded research participation credits for submitting it.
Non-parametric analysis was used on the questions involving Likert scales. Kruskall–Wallace non-parametric test (Howell 1997) for multiple independent samples was used to directly compare podcasts with vodcasts. In addition, in Phase 2, Friedman’s non-parametric test (Howell 1997) for multiple ratings was used to compare ratings within lectures.

Results

The questionnaire items for both phases were each separated into four thematic clusters relevant to the aims of the experiment (see Tables 1 and 2).

Phase 1

*PowerPoint* slides had the most positive response, with most medians being around 3. Vodcasts and podcasts had a less overall positive response, with more scores falling in the lower half of the scoring system than for *PowerPoint* slides (see Table 3). However, further analysis revealed that vodcasts were actually considered more useful
overall (χ² = 8.176; df = 2; p < 0.02) when compared with slides and podcasts. But slides were still considered to be the media type which supplemented the students’ studies best (χ² = 6.325; df = 2; p < 0.05). The least popular media format were podcasts; however, there was only a trend towards significance both in terms of ease of use [χ² = 5.002; df = 2; p = 0.082] and ease of understanding [χ² = 4.726; df = 2; p = 0.094]. But it must be noted that the scale only went from 1–7, so all median scores were in the middle of the range of possible responses, indicating that students were neither overly enthusiastic nor overly dismissive of the media provided.

While students were assigned a particular media format at the start of the study, they were asked which media they would like to see feature on future courses (Figure 1). Students liked PowerPoint slides (63.4%), 21.5% of students wanted to see vodcasts on future courses, and 12.9% wanted to see podcasts (2.2% did not specify). Over half (60.2%) of respondents thought that all media should be available for all lectures, with just 19.4% of students stating that they would only wish to use PowerPoint slides.

In regards to the question of whether students would stay away from lectures should this material be online for all courses; the responses showed that if vodcasts and podcasts were available this would not necessarily encourage some students to avoid attending lectures (median responses 3 for each), but might consider doing so if they had access to PowerPoint slides (median response 4.5). This indicates that this media addition to courses could possibly prompt a fall in student numbers at lectures.

Students were also given the following open-ended questions:

(1) By placing lecture broadcasts on the internet the lectures on the psychology practicals had a global and international audience – do you think that this is a good thing?
(2) Are internet broadcasts of lectures a good idea? If so, why?

Student responses fell into four themes, each of which will be covered individually: (1) Sense of community, (2) Pride in their course, (3) Educational benefit and finally (4) Pedagogic convenience.

The online material was considered to be a resource that others could tap into (1) giving other people the chance to learn something from anywhere in the world. This

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Table 3. Median responses for media type: first year questionnaire (1 = maximum; 7 = minimum).

<table>
<thead>
<tr>
<th></th>
<th>PowerPoint slides</th>
<th>Vodcasts</th>
<th>Podcasts</th>
</tr>
</thead>
<tbody>
<tr>
<td>How useful?</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>How enjoyable?</td>
<td>5</td>
<td>4</td>
<td>4.5</td>
</tr>
<tr>
<td>Easy to understand?</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Easy to use?</td>
<td>5</td>
<td>5</td>
<td>4.5</td>
</tr>
<tr>
<td>Did it supplement your studies well?</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Did it add to your understanding?</td>
<td>5</td>
<td>4</td>
<td>5.5</td>
</tr>
<tr>
<td>How likely would you stay away from lectures if it were available on the internet?</td>
<td>3.5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: a ‘It’ indicates the podcast/vodcast/PowerPoint slides.
was a very positive and altruistic viewpoint, and something that the department should take pride in:

We should all share and share alike … If someone in another country can broaden their knowledge by watching our lectures and we can broaden our knowledge by watching theirs than we can all share our knowledge and experiences. This benefits all.

Students also felt that having lecture material online was good for the university as a whole (2) as it showed the rest of the world and prospective students how innovative and technologically advanced the course was, an important aspect for future students in an increasingly technological world. Students were proud to be involved in a degree programme that offered such a learning resource:

It is beneficial … because it would give prospective students a real insight into how the course is run. In general terms it may inspire more people to choose to study psychology.

Educational benefit (3) was acknowledged by students, with all responses indicating the benefit that additional learning material might make:

If you have missed something in the lecture or you need visual revision for certain procedures then having this facility would really help.

Students also felt that online material was a convenient way to learn and revise (4) if students had to miss a lecture the material was a useful learning and revision aid:

If we do end up missing a lecture, this is a VERY helpful way to catch up. Also, it is a much better way to revise. If we don’t remember a certain part, or if we did go to the
lecture but didn’t feel too well, therefore couldn’t concentrate, we can go back to it later … I wish I could watch all my lectures again.

**Phase 2**

General findings were that students were in favour of extra online teaching resources. The majority of students (77%) felt that podcasts and vodcasts should be available on a more regular basis, while only 5.5% of students felt the slides were sufficient. When asked which mode of presentation they would use if it were available, students stated that they would use all three options (see Figure 2), podcasts, vodcasts and *PowerPoint* slides, for additional information (44%).

Table 4 shows the median responses to these questions. As can be seen, average responses were between 1 and 3, which means that they were at a high point on the Likert scale, much higher than for Phase 1. Vodcasts had the most positive response, with students indicating they were the most useful and the most helpful to their studies, and that they transferred the best from the lecture.

![Figure 2](image-url)  
Figure 2. Students’ reports of prospective usage of online media: Phase 2.

<table>
<thead>
<tr>
<th>Table 4. Combined median responses for media type: second year questionnaire (1 = maximum; 7 = minimum).</th>
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</thead>
<tbody>
<tr>
<td>Vodcasts</td>
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<tr>
<td>How useful?</td>
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<tr>
<td>How helpful?</td>
</tr>
<tr>
<td>Did the lecture transfer well to podcast/vodcast?</td>
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<tr>
<td>How suitable?</td>
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However, only one of the Kruskall–Wallace comparisons in this section was significant, that of usefulness. Students found the vodcasts to be significantly more useful ($\chi^2(2) = 8.55; p < 0.02$) than podcasts. All forms of media were highly rated as equally helpful to their studies and equally transferable to personal notes.

There were, however, some significant differences between the lectures (see Table 5). All vodcasts were considered to be helpful to understanding the material ($\chi^2 = 10.188; df = 2; p < 0.01$) and useful for learning the material ($\chi^2 = 9.42; df = 2; p < 0.01$). However, Social Psychology vodcasts were considered less useful than either Cognitive Psychology or Advanced Statistics ($\chi^2 = 9.333; df = 2; p < 0.01$), although the median response was only 3, indicating that the students were still happy to be provided with this media option for their studies. Podcasts were considered equally helpful, but found some more useful than others ($\chi^2 = 23.209; df = 2; p < 0.0001$). The Advanced Statistics podcasts were considered far less useful than the other lecturers' media ($\chi^2 = 6.615; df = 2; p < 0.05$).

It is possible to speculate that these differences may in part be due to content, statistics in particular is a numbers and figures based subject which may require considerably more visual input and explanation than other lectures. It is possible that the responses to the material are due to lecturer style and delivery; the particular lecturer on the statistics course may not have a manner of delivery which transfers effectively to multimedia presentations, whereas the lecturer on the social course may have an informative presentational style, such that it was this rather than the instructional medium itself which influenced students’ perceptions. It may simply be that some lecturers find technology contributes to their teaching success whereas others simply do not require it for effective delivery.

Students were asked to indicate whether they thought this additional online material should be provided as a matter of course (see Figure 2), and the response was overwhelmingly positive (77% were in favour). They were then asked which of the media they would be inclined to use should it be available. Predictably, PowerPoint slides were most likely to be used (83%), but interestingly vodcasts were next most likely to be used, with 78% stating they would use them. Just over half the students stated they would use podcasts (55%). The combinations of material usage can be seen in Figure 2.

Students were asked to rate the online material for usefulness, helpfulness and how beneficial it was in terms of revision/assessment usage. Students were this time given

Table 5. Median responses for media type split by subject: second year questionnaire (1 = maximum; 7 = minimum).

<table>
<thead>
<tr>
<th></th>
<th>Vodcasts</th>
<th>Podcasts</th>
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</thead>
<tbody>
<tr>
<td>How useful?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Psychology</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Social Psychology</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>Advanced Statistics</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>How helpful?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Psychology</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Social Psychology</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Advanced Statistics</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Did the lecture transfer well to podcast/vodcast?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Psychology</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Social Psychology</td>
<td>1</td>
<td>2.5</td>
</tr>
<tr>
<td>Advanced Statistics</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
the opportunity to comment on the online material and provide feedback in the form of open questions.

Overall 88% of students used the online material for revision and assessment. Podcasts were considered more beneficial than vodcasts (44.4% vs. 38.9%); with 38.9% of students finding that neither was beneficial for revision purposes. In terms of usefulness and helpfulness for revision/assessment purposes, all media forms were considered useful and helpful. However, there was just one significant difference in the analyses this time, for Social Psychology. Students here felt that vodcasts were least useful for revision/assessment purposes [$\chi^2 = 9.33; df = 2; p < 0.01$]. There were no other differences between media types for the individual lectures; all students felt that any media was useful for revision purposes.

Students were asked open questions on the following topics:

1. If you just had podcasts, would you feel you were missing out on the lecturing experience?
2. Does having more control over when you ‘attend’ lectures make you more willing to learn?
3. How important is the lecturer given the advances in technology and the portability of audiovisual aids?

As can be seen below students were in favour of retaining lectures, considering the audiovisual aids as additional revision material rather than their main source of learning:

Lectures are more useful overall, vodcasts and podcasts help to reinforce the lecture and clarify understanding

Even though the podcasts and vodcasts were good there is no better was of learning than sitting in the lecture and experiencing it personally

Students recognised, however, that some students may see this as an excuse to miss lectures:

Sometimes there are unavoidable reasons for missing lectures, and knowing the lecture was available as an audio or visual would be very reassuring

A positive response was found regarding the importance of lecturers, whom students felt could not be replaced:

The lecturer is just as important as before technology advanced. The experience of sitting in a lecture and having a one on one teaching experience for every person in the room is great.

Additionally they felt that the control aspect was a positive one, being given more control over their own learning experience, feeling that they were being treated more like adults in the process. Overall students were very much in favour of additional podcasts and vodcasts, one student simply commenting ‘brilliant … keep them coming!’

**Discussion**

Overall students indicated that podcasts and vodcasts were a beneficial additional resource for learning, but that they were most useful when used in conjunction with
lecturers’ slides. Vodcasts were considered significantly more useful than podcasts; it is logical to conclude that this was because vodcasts are closer to the actual lecture experience; a combination of visual and audio information will always elicit a greater understanding of the material. Students felt the material was easy to use and understand; an important source of information, which was particularly useful in terms of revision/assessment. However, there was no difference in terms of how useful to understanding or how helpful in their learning the students considered the material overall, indicating that all additional material is useful, no matter what the format. Our findings are supported by Brittain et al. (2006) who found that students prefer podcasts, but that all media provision had a positive impact on grades, and were especially utilised around exam times.

However, our responses were not overwhelmingly positive, in Phase 1 in particular, indicating that lectures are still seen as the main source of learning at university and should not be replaced with additional online material. The online media was considered to be a good substitute if the lecture is missed for whatever reason, but that the lecturer provided a valuable resource for answering questions, which the online media can rarely hope to achieve. However, students perceived that the online media was more beneficial in some lectures than in others. This may be due to individual lecturer style, but it may also be the case that some lectures may simply be more transferable. Advanced Statistics in particular was not a popular podcast, being considered significantly less useful than either the Cognitive or Social Psychology podcasts. It may be that the lecturer needs to be present for more taxing material, such as statistics, for the information to be retained effectively.

The results of this study show that students see a benefit in additional online material to their studies. Vodcasts are considered a useful addition for increased understanding of the material, while podcasts are considered to help understanding during the course and for revision purposes. However, quality of material provided appears to be an issue, one that has also been found by Brittain et al. (2006). They found that higher quality material is required before any real benefits to media provision are evident. The material provided in Phase 1 was edited by departmental technicians and the material in Phase 2 was provided by the University in-house professional media company. The quality of the second set of media was far higher than the first set, and received more positive responses as a result. The cost of delegating outside the department is, however, high; higher quality material involves higher quality equipment and time from staff external to the department. This becomes an issue when dealing with limited departmental resources, departmental staff salaries are already covered, and external departments require an additional cost.

There is always a risk with online material that there will be a decrease in lecture attendance (Belanger 2006). It is therefore encouraging to think that students in our study feel the lecturer is irreplaceable in terms of their course and learning experience. This was also found by Frydenberg (2006) in the USA and by Copley (2007) at a study in Southampton, UK. Students in both studies were very enthusiastic about the podcasting medium but considered it to be an additional resource rather than an alternative teaching medium. Students do require contact with lecturers to help them feel engaged on a course; even distance learning courses, such as those run by the Open University, involve some contact with tutors, albeit on a less frequent basis.

Students in our first experiment saw that there was a risk of increased absenteeism due to the additional material, but that they were an invaluable resource where absenteeism was unavoidable and the benefits would outweigh the risks therein. The
popularity of provision of media material when absenteeism is unavoidable is clearly a positive outcome for this study. This indicates that enthusiasm for learning is present within the student population, but that time is a valuable commodity. Having flexibility in study time is a very popular concept, students need to plan time more effectively with the busy lives they now live in order to fund their studies, a finding supported by several studies (Brittain et al. 2006; Chan and McCloughlin 2005; Donnelly and Berge 2006).

Current students have more challenges facing them than has been traditionally the case. Many are mature students; almost all students have part-time jobs. Accordingly, teaching facilities need to become more flexible in their approach to providing education to students in these situations. Podcasting and vodcasting is one way in which this is possible, their portability as a medium is a very important and popular factor (Chan and McCloughlin 2007; Frydenberg 2006). Digital coverage of lectures and course material provided online is one way this can happen. Students can have 24 hour access to course material and lecture content, increasing the likelihood they will access this material more often; enhancing learning among the student population. However, although students were enthusiastic about online media, their responses suggest that the resource is most useful in terms of revision and assignment preparation, rather than as a main teaching resource.

There are obvious fears about student attrition, disengagement and non-attendance in relation to providing podcasts and vodcasts. However, given that the student response in this study was positive and in favour of the material as an additional resource, it appears these fears are misplaced. But the response does open up the question of whether we could use this material to provide an online course in psychology, for those who are unable to physically attend the university. Online courses are increasing in popularity and this would provide additional revenue for the university, with a minimum of extra staff time, leading to better resources for all students.

The provision of podcasts and vodcasts can be seen as a positive addition to the course structure; viewed by students as a good additional resource regardless of quality or format. Students do prefer to have the slides alongside the vodcasts and podcasts. An option for the future is to combine slide shows with audio podcasts to create a blended and focused vodcast. This material is also of benefit in terms of the many different nationalities and accents we currently have in academia. There are many different accents spoken by both staff and students, so having extra time and resources spent aiding this barrier to learning will increase understanding for all students.

Overall students responded very positively to the online material provided during these sections of the course, and considered them to be such valuable resources that there were calls for this material to be provided as standard. The first experiment showed that students felt there was a risk of an attendance drop should vodcasts be provided; but this was not found in Experiment 2, where students acknowledged this could happen but felt that the lecturer was a valuable resource and the original lecture would always be better than a recording. The online material led to students perceiving an increased understanding of the material, which signals a positive outcome.

Notes on Contributors
Dr Vanessa Parson is a research fellow and sessional lecturer at Aston University. Currently researching the use of technology as a method of improving learning, teaching and collaboration
in students aged 16+. In 2007 Vanessa was part of the group at Aston short listed for the Times Higher Award for the Outstanding ICT Initiative of the Year. She is also head of A-level Psychology at St George’s School, Edgbaston, Birmingham.

Mr Peter Reddy is a teaching fellow at Aston University since 1999. He is interested in research to improve student learning, including assessment design, approach to study, e-learning, transition to university and onwards into graduate employment, and improving student learning and employability through work placements. He teaches on outcome research in psychotherapy and on a range of other topics in applied and social psychology. Before he joined Aston he was a social worker, a counsellor and an A-level psychology teacher. In 2007 he was awarded an Aston University Teaching Fellowship, nominated for a National Teaching Fellowship and short listed for the Times Higher Award for the Outstanding ICT Initiative of the Year.

Mr Jon Wood is technical team leader for psychology and audiology programmes and research associate at Aston University. Current research areas involve the potential use of Web 2.0 virtual learning environments and the effects of cyber personalisation on pedagogy. In 2007 Jon was part of the group at Aston short listed for the Times Higher Award for the Outstanding ICT Initiative of the Year.

Dr Carl Senior is a lecturer in cognitive neuroscience at Aston University. He has published extensively on a range of topics in the cognate disciplines in high impact journals such as Nature, Trends in Cognitive Sciences, Archives of General Psychiatry and Current Biology. He has edited two books, Neuroimaging in psychiatry (Dunitz Press, 2003) and Methods in mind (The MIT Press, 2006). He is the guest editor of a special issue of the International Journal of Psychophysiology and also for the Annals of the New York Academy of Sciences. He is the co-director of the newly formed Organisational Cognitive Neuroscience Centre at Aston University. In 2007 Carl was part of the group at Aston short listed for the Times Higher Award for the Outstanding ICT Initiative of the Year.

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