Project Report

Lecture Capture Pilot Project

Multi-Media Programme

APS019

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1. Overview

Lecture capturing provides the facility to automatically record lectures delivered in equipped theatres for lecturers who wish to participate. The pilot ran through semester 1 of the 2008/9 academic year with a system used (supplied by echo360) which automatically recorded audio, screen capture and a video of the lecturer speaking at the scheduled time. Beyond using the microphone no special action was required by the lecturer during the course of the lecture. Material on blackboards could not be captured, although anything going to the projector could be recorded, including the visualiser. Control of the material, including when/if to release it to students, was decided by the participating lecturer. The geographic scope was limited to two lecture theatres in Appleton Tower, one at JCMB in King's Buildings and a mobile device used by Informatics that required manual set-up for each lecture.

The project aimed primarily to establish whether lecture capture software generally could be fully implemented at The University of Edinburgh and to clarify the scale and requirements of any further implementation. The pilot project, following initial consultation, progressed on the premise that the resulting service would provide a valuable supplement to our existing teaching. It was anticipated that it would be particularly valuable for:

- Those for whom English is not their first language.
- Students who are generally struggling
- Subject revision

It was fully acknowledged that a Lecture capture service is not an appropriate primary vehicle for lecture delivery to students.

A demand for lecture, and in particular seminar, capture facilities is apparent from students and some academic staff. Consideration should be given to the most cost-effective way to make facilities available for interested lecturers and seminar providers with a wider geographic scope in the 2009/10 academic year.

Consideration will need to be made as to the funding for these facilities. This could be made via a broad approach with a combination of a central funding application, allocation of existing resources and contributions from 'champions' of the technology from within the academic community. Due to the annual licensing model used by the supplier for the pilot no continuing service will be possible without some level of funding.

1.1. The experience of the pilot

The pilot captured 198 events (primarily lectures, but including some seminars and general interest talks). 18 staff from 9 Schools in 2 Colleges delivering 11 courses were involved in the pilot. The pilot did not compare automated lecture recording against other mechanisms for creating audio-visual content from lecture material or separately to lecture delivery.

The experience of those participating in the pilot was predominately positive with 73% of staff involved stating they would record lectures again and 90% of students[1] supporting the concept. An analysis of the access to captures shows that the majority of access took place during the end of semester 1 exam revision period.

[1] Sample size 124 students

Following the initial setup and debugging period, the technical support overheads proved to be quite low, with equipment functioning well and few problems reported. Participating lecturers expressed a wish for additional administrative support to handle publishing and editing of recordings.

1.2. Issues for consideration with any subsequent service

2009/10 academic year

Due to the effort required for a procurement process and the time available prior to the start of the 2009/10 academic year it is likely that the supplier used for the pilot, echo360, will need to be used for at least one more year if a continuing service is to be offered. If this occurs it should not be taken as an ongoing commitment to using this supplier and a review of alternative systems and a full procurement process should be undertaken for any ongoing service.

Usefulness of video recording

There is some debate as to the degree of usefulness of recording video of the lecturer (as opposed to only audio + presentation), especially given the additional cost and effort required to capture video and presentation simultaneously. Consideration should be given to developing an audio + presentation recording service that has a clear upgrade path to recording video. Further consideration should be given to delivering this option alongside a service that captures video if such a service is to be developed.

Accessibility issues

In order to ensure that accessibility issues are considered (see section *4.3 Accessibility Issues*) the IS Disability Information Officer recommends:

- Liaison with the Disability Office to ensure the technology is trialled by disabled students before being its use is expanded any more widely;
- Compare alternative lecture capture technology to assess whether Echo 360 is the most appropriate in terms of accessibility on the market at present;
- That lecturers be reminded not to use the blackboards wherever possible to ensure the lecture capture is as complete as possible.

Business Plan

A detailed business plan for providing a lecture capture service in future years, including a procurement phase for choosing the most cost-effective supplier will be needed. Funding for delivering this service will be needed and consideration should be given as to where this funding will come from.

Reputational/competitive issues

The growth of lecture capturing in other institutions and delivery of academic content to the general public via delivery mechanisms such as iTunesU means that there could be reputational or competitive drivers for delivery of a lecture capture service.

It would be useful to conduct some research into the degree to which potential students are influenced in their choice of an institution by the provision of such a service. This may be particularly relevant to international students given the usefulness of such a service to those for whom English is not their first language.

2. Feedback from the pilot project

This section reviews the evaluation report that is attached as Appendix A to this paper. The evaluation methodology used a mix of surveys, focus groups, invitations to respond (via email) and one-to-one interviews. See Appendix A for full details and in-depth analysis of the feedback gathered and the report from Sarah Gormley. For the purposes of reviewing the pilot project it is useful to highlight some key figures and commentary from each of the categories of people included in the survey.

2.1. Background

The feedback process was conducted by Sarah Gormley (College Office, CSE) on behalf of the pilot project. Sarah surveyed and interviewed students and staff (academic and technical) about their experience of and attitudes to lecture capture within the University of Edinburgh. The following groups were included in this process:

- Students: from courses which made captures available or not. 124 students answered a survey and 12 were involved in focus group discussions;
- 16 academic staff whose lectures were captured were interviewed, whether they chose to make those captures available or not;
- 142 academic staff who were not involved in the pilot project responded on an individual basis to an email survey;
- 10 Schools provided a central response;
- Technical staff involved in delivering the pilot project were interviewed.

2.2. Students whose courses made captures available

Key figures are:

- 66% of students made some use of captured material
- 60% of students making use of recordings found them useful
- 65% of students who made use of captured material used only 'a few' recordings
- 90% of students thought lecture capture was a good idea

There are several themes that emerge from this data and the wider feedback process with students. First is the strong support for the principle of lecture capture and that although the majority of students made some use of recordings, most made use of only a limited number.

Another strong theme is that students did not regard access to captured material as a substitute for attendance, as is supported by evidence from other institutions see section *7.2 Research evidence about lecture capture*. This not only came across as an explicit statement in focus group sessions but is reflected in the quantitative data with most students making only occasional use of captured material to reiterate, reinforce or revise material. Although this could lead to questions of cost-effectiveness, it is worth noting that lecture capture has always been seen as a supplement to existing teaching.

2.3. Academic staff whose lectures were captured

Key figures are:

- 16 staff from 8 Schools in 2 Colleges involved in the pilot gave feedback
- 69% would definitely want to record lectures again
- 13% would not want to record lectures again

Overall the staff who participated in the pilot were pleased with the experience and over two thirds said that they would record lectures in the future. The majority of the remainder were unsure about recording again until they had received feedback from students or evaluated the effectiveness of lecture recording. It is worth noting that these staff are a self-selecting sample and likely to be more representative of academic staff with an interest in innovative use of technology for teaching and learning than the norm.

In reflecting on the comments of staff who were not keen to record lectures again, it is apparent that this technology is not appropriate to some lecturing styles and/or subjects.

Two academic staff involved commented that the recordings enabled them to review their lecturing styles and this is noteworthy given that the technology's capacity to enhance CPD was cited as a reason in the manifesto commitment for Evan Beswick, the newly elected Vice President of Academic Affairs in EUSA.

Although staff were appreciative of the support offered during the pilot, the need for comprehensive central support and clerical support for editing and publishing material was frequently highlighted.

2.4. Academic staff who were not involved in the pilot project

For staff and schools who did not participate results are split between schools where individual staff answered survey questions and those where there was a collective school response.

Key figures are:

- Overall 21 % of non-participating academic staff thought there are benefits to lecture recording
- Overall 27 % of non-participating academic staff were unsure or did not have an opinion
- Overall 51 % of non-participating academic staff did not think there were benefits to lecture recording

Due to variable response rates (40% of all survey respondents are from one School) it is worth looking at these figures when using a weighting to assign equal value at School level. Weighted key figures are given in the table below and also divided between CSE & CHSS as there is a clear difference in the response between the Colleges.

Are there benefits to having your lecture recorded?

Weighted[2](raw)%	**Yes**	**No**	**Maybe/Don't Know**
Overall	26% (21%)	43% (51%)	31% (27%)
CSE	35%	26%	39%
CHSS	16%	61%	23%

It is apparent from these figures that there is a significant minority of academic staff who would be interested in lecture recording facilities. From looking at the responses

[2] Weighting was performed so that each school had an equal contribution to the overall weighted figure

in the evaluation report it is clear that a sizeable number of those who do not see a benefit are actively opposed to the principle of lecture recording.

There was also considerable concern that lecture recording could be imposed on staff or be used to reduce contact time with students. It is worth re-iterating that the pilot was expressly set up to examine the use of this technology as a supplement to existing teaching.

Some of the concerns expressed by those opposed or concerned about lecture capture were based on misconceptions about the principles or scope of the pilot even where the details were dealt with in the documentation related to pilot project. As a consequence recommendations are made in section *6.3 Lessons learned: improved communications* below. A common concern expressed by academic staff is that use of lecture capture would lead to a drop in attendance at lectures see section *7.2 Research evidence about lecture capture* for a discussion of this.

2.5. Schools

Key figures are:

- 80% of Schools who provided a central response could see benefits to lecture (or seminar) recording.
- 70% of Schools were interested in lecture capturing specifically.

Considerable interest was expressed by Schools for the use of lecture and seminar capturing technology. It is apparent that the geographic location of the equipment in the pilot was mistakenly interpreted as a limit on the scope of the project. The capture location decisions for the pilot were taken as a result of the staff who expressed an interest in participating when a University wide request for volunteers was made.

3. Technical experience during the pilot

The experience of the pilot is that the technical input required from support staff is quite low, although systems for regular monitoring of capture devices should be included in any plans for an ongoing service. This should be balanced with the demand from participating academic staff for improved levels of support for activities such as editing material (see section *6.2 School support*).

Storage and processing capacity would be the main cost implications to expansion of the central server provision. Streaming of content from the IS Podcasting and Streaming Service was tested during the pilot, which would reduce storage requirements, however problems with file mounts meant this was not made live. These problems should be resolvable with a limited amount of effort.

See *Appendix B APS019 Lecture Capture Technical Evaluation* for a detailed discussion of the technical issues for the central service provision.

3.1. Experience of portable device used by Informatics

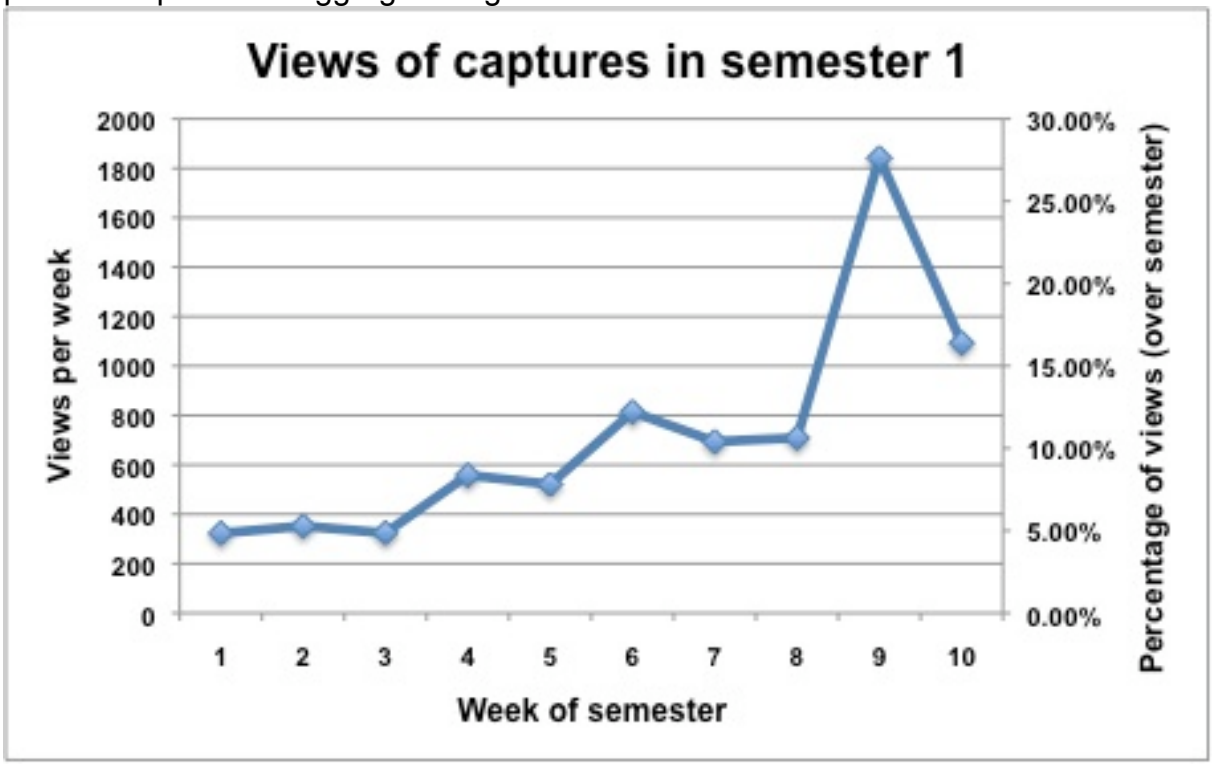
The School of Informatics funded a portable device for use as part of the pilot. This was co-ordinated by Professor Robert Fisher, who devoted considerable energies to making this system work successfully. Professor Fisher co-ordinated a team of 4 post-graduate students who were paid to transport the portable device in its case and a camera to lecture theatres and set up the equipment to record the lecture. The recording itself occurred automatically according to the schedule providing the capture device was powered on.

A software update was required from echo360 to enable lectures to be automatically uploaded when network connectivity was restored. Although this was not in place until the end of semester 1, the upgrade has resolved the situation and the supplier was helpful and responsive in dealing with the problems.

4. Usage and impact during the pilot

4.1. Usage

The chart shown below gives the aggregated viewing figures for lectures captured as part of the pilot. The aggregated figures cover total views/downloads for all formats.



Compared to earlier in the term, views in the revision week prior to exams were up 150% to a total of 1842 lectures accessed during the week. Views also were up 50% on the previous level during the week of the exams itself. Over 40% of total viewings occurred during this two week period.

Looking at accesses during the highest traffic week 50% of total views were of the top 32 out of 192 lectures, with a 'long-tail' of 160 less accessed lectures. Reviewing the most popular lectures that week, 20 of the 32 were from early in the term (September or October). This evidence supports the stated opinion of students that revision is one of the primary uses of lecture capture.

4.2. Attendance

It is a common concern of staff that lecture recording would lead to a drop in attendance at lectures. There have been no reports of a drop in attendance during the pilot project, although no quantitative measures were made. The experience at other institutions does not support this, see section *7.2 Research evidence about lecture capture* for more information and references.

4.3. Accessibility issues

The issue of the accessibility of Echo 360 by disabled users is of significant importance to the project team not just in regard as to whether it would breach the Disability Discrimination Act but also to ensure it is an exemplar of good practice. It

also felt that the technology might be useful for some users with certain disabilities, thereby providing a positive advantage.

The advantages of the technology for disabled users is that it allows the student to revisit the lecture at a later date therefore potential assisting many students with learning disabilities as well as those with manual dexterity difficulties who find if difficult to take notes. As the lecture capture process encompasses nearly all the material of the original lecture as well as being a more accurate representation of the event, it is of much greater use than the traditional tape recording of lectures. The technology also has clear benefits for any students who are house-bound on either a temporary or permanent basis – allowing them to experience the lecture as fully as possible. For students with recurrent conditions and mental health disabilities the system will allow the user flexibility to enable them to view lectures when they are too unwell to attend. Because the lectures could be added automatically online, disabled students would be able to access the recordings without requesting them, saving student and staff time.

The disadvantages of the system are that it is as of yet sub-titles are not automatically added. However, there is the provision to request subtitling to be added on a lecture by lecture basis. The cost of this is significant but given the small proportion of students likely to request this, the university is likely to be able to bear this cost. This would ensure that students with hearing impairments were not disadvantaged. Another possible disadvantage is that the images in terms of the slides that are captured are not able to be adapted into different formats –such as increasing the font or colour contrast etc. Lecturers were reminded about their responsibility to make their slides as accessible as possible but there is of course no guarantee that this happens. It appears that screen reading technology may well not work with the slide images and further testing of the compatibility of assistive technology with Echo 360 is recommended.

5. Costs of the pilot project

5.1. Supplier charges

Costs charged by echo360 (the technology provider) for the pilot for capture hardware in lecture theatres, software licences and on-site consultancy for 4 capturing devices were:

Type of cost	Amount	Annual charge?
Software costs:	£9500	Yes
Hardware costs:	£4200	No
Consultancy:	£1250	No
TOTAL:	**£14,950**	**£9,500**

5.2. Infrastructure

For the pilot use of two Windows servers was donated by IS-Architecture. The second server was used only to evaluate the technical implications of adding processing nodes to the setup and one server proved to have sufficient capacity for the level of usage of the pilot. Normal costs associated with procuring these servers have been given in the table below:

Type of cost		1 Server	2 Servers
Server	Purchase	£3,500	£7,000
Server	Setup & 1st year support	£3,026	£4,552
SAN (1TB)	Setup & 1st year support	£2,560	£2,560
Server	Subsequent years support	£1,436	£2,298
SAN (1TB)	Subsequent years support	£256	£256
TOTAL YEAR ONE COST		**£9,086**	**£14,112**
RECURRING CHARGE		**£1,692**	**£2,554**

5.3. Staff time related costs

Time spent on the project by IS-Applications staff was as follows:

Task type	Days effort	Equivalent cost
Project management	64	£16,000
Planning & Analysis	14	£3,500
Build	20	£5,000
Deploying and running pilot service	39	£9,750
Other	28	£7,000
TOTAL	**165**	**£41,250**

These costs include a large one-off overhead involved in initiating, consulting and developing procedures for the delivery of a novel service. It is anticipated that for future years project management, planning and build overheads would therefore be significantly reduced. Costs for deployment and delivery are likely to scale with the scope of any ongoing service, although if an alternative supplier was selected planning and build time would be needed.

These figures do not include costs for Audio-Visual Technology, Helpdesks, eLearning Support or time spent by participating academic staff.

5.4. AVT hardware costs

Costs for equipping lecture theatres vary depending on the equipment already in place and the setup of the lecture theatre. For the pilot the lecture theatres selected were already equipped with the majority of the equipment, including cameras and a number of other lecture theatres have some or most of the required equipment already installed.

In the case where a lecture theatre needs to have the equipment installed, the approximate costs of the main components are given in the table below:

Item	**Cost per room**
Camera	£840
Interactive display (optional)	£1,500
Sundries (VGA splitter, cabling, etc)	£250-£400
TOTAL	**£1,090-£2,250**

5.5. Summary of notional cost

Below is a summary of the notional costs for the pilot and the theoretical equivalent for delivering the service for a second year using the same supplier/infrastructure:

Type	**Cost during pilot project**	**Estimated running costs**
Supplier	£14,950	£9,500
Servers	£8,052	£2,298
IS-Apps Staff	£41,250	£17,755
TOTAL	**£64,252**	**£29,553**

The costs given above do not include staff time for AVTS or user support other than that provided by Applications Division to centrally support the service.

6. Lessons learned as a result of the pilot

Any future lecture or event capturing service should be informed by the lessons learned during the pilot project. The main considerations for delivery of any future lecture capture service cover: elective involvement; improved communications; wider scope; and easy one-off/seminar capturing.

6.1. Elective involvement

It is strongly recommended that any lecture capture continues to be opt-in on a per-lecturer (rather than per-course) basis. This is for a number of reasons:

- The decision as to appropriateness of techniques employed in a lecture for recording should be taken by the lecturer involved who is best placed to make that assessment;
- Issues around IPR and performing rights are then clear and unambiguous;
- Any implication, even undeserved, of lecture recording being mandated to staff is unpopular and controversial.

6.2. School support

Lecturers should be clear about the administrative commitment required to edit and publish recordings. Schools and colleges should consider making additional administrative resources available to lecturers in order to support this.

6.3. Improved communications

Clearer and more widespread communications would be necessary for any lecture capture service. Staff not involved in the pilot expressed a number of misapprehensions about the purpose and policies relating to the pilot project.

Due to the potential for staff to misinterpret lecture capture as a mechanism for replacing student contact (see section *2.4 Academic Staff who were not involved in the pilot*) a University wide communications strategy should be put in place covering any lecture capture service. This should include:

- Established large-scale staff communication channels;
- Publicly available information for staff and students to be able to access accurate information about the scope and policies (see section *8.1 Policy issues*) relating to lecture capture;
- Communication with School and College offices and eLearning liaisons so that knowledge of the underlying principles are readily available;
- Information for staff supporting the use of lecture capture within a wider pedagogical context;
- Information about how this links with podcasting and streaming facilities and support already offered to ensure that technology is supported effectively.

6.4. Geographic scope

There is scope for wider involvement across the Colleges, in particular CMVM and School of Education have both expressed interest in lecture capture and have not been involved in the pilot.

Effort should be made to investigate equipping smaller rooms with capturing facilities, concentrating on audio and screen capture for cost reasons. This would not only allow wider involvement, but participation of more courses from later years of

undergraduate and post-graduate programmes of study. In these smaller groups pedagogical use might be more easily assessed.

6.5. Easy one-off/seminar capture

There is widespread interest in the capturing of one-off events and seminars across the University. This could be implemented using an 'on-demand' rather than scheduled service, which has a lower cost to implement. Rooms that are commonly used for these types of events should be identified and consideration given to including them in the service.

7. Background and research

7.1. Pedagogical use

This project is not able to analyse the pedagogical use in a quantitative manner. as the end of academic year exam period has not yet taken place. It will be possible to compare the performance of students to previous years in summer 2009, but this would be an extremely crude measure with only one year's data and is unlikely to be significant at that stage. The following section reviews evidence on usage of lecture capture in the public domain and the project team is indebted to Nora Mogey from the eLearning Team for performing this review.

7.2. Research evidence about lecture capture

Although there is clear merit in recording and archiving special events that one might not otherwise be able to attend, such as when an eminent and inspiring overseas guest addresses a conference, or when a university has a prestigious open lecture series, the reality of day to day classes in many higher education institutions is different. Few of our teachers will attract a worldwide audience and it is reasonable to question whether video recording a live lecture for replay later is an effective learning support strategy.

The UK Open University pioneered the use of the TV lecture and encouraged students to record these and view at their convenience. The advent of streaming technologies, combined with increased network bandwidth, reduction of cost of memory and the widespread ownership of personal computers and mobile video playback devices mean that there has recently been a surge of interest in recording lectures across higher education. A podcast differs from a standard audio file because it uses syndication feeds to allow it to be automatically downloaded to a user's playback device. Since podcasting has taken off, and with the availability of mp4 players (which play video not just audio), we are moving to the era of video podcasting and thus the possibility to provide illustrated recordings of lectures. When introducing any innovation into teaching, including a technological innovation, it is important to be clear about what the technology is adding.

Cited benefits of providing recorded lectures include

- Non native speakers of the language value the opportunity to re-hear the lecture when they can start, stop and rewind it to suit their own needs and pace (Lane, 2006)
- It allows students (especially overseas students) to recap sections of the lecture which they found hard to follow and thus improves their understanding of the subject. (Bennett & Maniar, 2007)
- Portability offers the students a facility for anytime, anyplace learning allowing them easily to catch up if they missed the class (Gosper et al, 2008)

But there are also concerns such as

- A widespread concern that provision of recordings will lead to a drop in attendance. In practice this either doesn't seem to be a problem (Lane 2006,

Windham 2007) or there are indications that students are making strategic choices about how to use their limited time (Gosper et al, 2008).
- Staff reluctance to spend time & effort editing or indexing recordings. This may be particularly problematic to older learners who feel a greater obligation to listen to a complete track rather than rewinding or fast forwarding (Gosper et al, 2007)
- The need to provide transcripts to meet accessibility legislation
- Concerns about IPR of lectures and copyright infringement

Before exploring the effectiveness of recording lectures it is both appropriate and important to note that there are some very real concerns about the merits of the face to face lecture as a pedagogical tool (for example Bligh 2000). The modern lecture has its roots in the medieval university, where the practice was for the instructor to read from an original source to a class of students who took notes or who simply listened to the lecture. Where there is only a single copy of a text there is a good reason for the tutor to read from this and thus enable the knowledge contained to be shared among a group of students. However we are no longer restricted to medieval technologies and there is a significant body of research which suggests that lectures are an ineffective way of helping students to learn.

"One study of student attentiveness (Pollio, 1984) suggests that students are not attending to the lecture 40% of the time. Another study on student acquisition of lecture content looked at students' note-taking behaviors. Students recorded 70% of the content during the first ten minutes of lecture and only 20% during the last ten minutes (Hartley & Davies, 1978). Interviewing an audience 24 hours after a lecture revealed that audience members recalled only insignificant details and that the details remembered were generally wrong (Verner & Dickinson, 1967). Finally, one particularly disconcerting study (Lloyd, 1967) charted the learning curve of a class hour. The investigator found that after an initial settling-in period of five minutes at the start of a lecture, students assimilated material well for only the next five minutes. Confusion and boredom began to set in during the next ten to twenty minutes. Assimilation of content fell off rapidly, picking up again only toward the end of the lecture when the students were revived by the knowledge that the lecture would soon be over! " All from (http://www.uky.edu/UGS/tlc/topic/teaching2.html)

Browsing comments posted on the EUSA review site suggest that the experience of University of Edinburgh students is probably not so different (see appendix). Whether traditional lectures themselves are a good and effective means to encourage student understanding and learning cannot pass unquestioned. Further it has been argued (Bennett & Maniar, 2007) that recording lectures promotes the notion that the lecturer is the number one source of knowledge, and that the role of a good student is to soak up the knowledge rather than learning to think for themselves. (Providing powerpoint slides tends to be much less of a complete package so web-mounting lecture slides alone isn't really open to the same criticism).

Nevertheless students worldwide do consider lectures to be a valuable contribution to their learning experience (Gosper et al, 2008). Many universities have recorded lectures, either full video or audio plus slides or other AV materials, or audio only, and some have conducted evaluations of their effectiveness. Online viewers tend to be much less forgiving of mistakes & audience disruptions than they would be in a

live lecture (Bennet & Maniar, 2007). Ellis & Childs (1999) reported that although the producers of video lectures were confident that material was covered clearly in a manner designed to engage the student, the student viewers did not agree, and found themselves loosing concentration and getting bored. Caspi, Gorsky & Privman (2005) found that almost all the students in their study did not enjoy the video recorded lectures provided, and Sadler-Smith & Riding (1999) demonstrated that students' established study methods (such as browsing a book) did not readily transfer to accessing filmed material.

Lecturers or other providers need to recognise that students only have a limited attention span, and they need to provide recorded material in digestible bites. Frydenberg (cited in Windham) first introduced the class to podcasting by offering downloads of his lectures online. When he asked the class how many students had been accessing the information, not many raised their hands. "They were just a recording of what he talked about in class," says Finnegan. "They lasted for a whole hour. They were not as enjoyable as our five-minute segments." Knowing that his one-hour recordings weren't fitting the bill, Frydenberg asked students how long they would listen to a podcast. The majority said six to ten minutes, so he switched the format to allow the students instead to become the instructors, for sessions lasting six to ten minutes.

One of the most comprehensive studies was conducted by Gosper et al in four universities in Australia, and the clear feeling was that web based lecture technologies (WBLT) were indeed useful :

	Do you think using WBLT has helped your students (you) to achieve better results?		Do you think using WBLT makes it easier for your students (you) to learn?	
Response	**Staff** (n=139)	**Student** (n=746)	**Staff** (n=139)	**Student** (n=746)
Yes – significantly	7.9%	35.1%	12.2%	47.1%
Yes – moderately	22.3%	31.6%	36.7%	32.8%
Not sure if any change	54.7%	23.3%	38.1%	13.4%
No – didn't help	9.4%	8.6%	7.2%	5.6%
No – detrimental	5.8%	1.3%	5.8%	1.1%

Table reproduced from Gosper 2008 (full report available at http://www.cpd.mq.edu.au/teaching/wblt/research/report.html)

However this study also highlighted that some adjustments to lecturing style are helpful such as repeating questions for the recording, scripting the lecture, and extending class communications into other technology mediated interactive opportunities. Recording lectures and responding to feedback from students may be a catalyst for changing lectures themselves.

Robinson et al (1997) demonstrated that although speed of delivery of a lecture was of great importance to student understanding, providing some students with an audio recording and others with a video of a lecture did not result in any evidence of a difference in understanding between the two formats. Hence consideration should also be given to technologies which capture the essence and core content of a lecture but without necessarily recording a comprehensive video. Examples might include systems which capture the output from a PC plus an audio track – thus

allowing the student to review a powerpoint presentation concurrent with the narrative, or to view a website or series of website with a synchronised audio recording. This may offer a solution which is more affordable and scaleable for the institution while still giving students the flexibility and additional support they value.

7.3. References

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8. The way forward

8.1. Policy issues: Performance rights, copyright and IPR

The situation as regards Copyright and IPR is legally straightforward: like other material produced during the course of employment these reside with the University. Staff can apply for (and normally expect) a non-exclusive, non-commercial perpetual licence (including the right to sub-license) to these teaching and learning works for the purposes of academic research and education.

The lecturer or speaker's performer's rights are legislatively more complicated. Some can be assigned (the property rights) and some cannot (the non-property rights). In addition, a performer has a right to equitable remuneration which cannot be waived when a commercially published recording of a performance is played in public and where the rental right is transferred to the producer. While there is no intention to exploit the recording commercially – the University should be aware that if remuneration is received, the lecturer (performer) may have a claim.

Given also that some rights are assignable but others are not, it is recommended that the parties should enter into a non-exclusive licence - i.e. the University should take a non-exclusive licence from the lecturer (the opposite to what has been done in relation to copyright). These arrangements should be cleared with the University's legal representatives and consideration should be given to time-limiting the right to withdraw from the arrangement.

Clear guidance should continue to be provided to lecturers in terms of copyright restrictions for material used for lectures.

8.2. Policy issues: Appropriateness of use of lecture capture

A policy on the appropriateness of lecture capture technology as it compares to alternative mechanisms for delivering audio-visual content to learners should be drawn up. This should include guidance that states:

- Materials specifically designed for delivery via computer are likely to be of more benefit to learners than lecture capture although these will require additional effort from teaching staff which lecture recording does not;
- Capturing lectures and making them available to learners is adding value to the lecture by making a record of it available and is not a teaching mechanism in its own right.

8.3. Costs for upgrading learning spaces

Although some of the larger learning spaces used as part of the pilot are already equipped with appropriate hardware to enable the installation of lecture capture most learning spaces will require investment to enable a service to be used within them. Indicative costs for learning spaces with four different levels of existing equipment are given in Appendix C. Any service should be deployed initially in rooms that require as little expense to upgrade as possible, unless additional funding is provided for upgrading those rooms.

8.4. Service costs for 2009/10 academic year

Costs involved in providing a lecture capture service using the echo360 system used for the pilot for the next academic year are:

Central costs:

Item	Cost	Notes
Server provision	3450	Assuming that server used in the pilot can be retained
Server support	1436	
TOTAL	**4886**	

Per room:

Item	Cost	Notes
Annual licence	2500 + VAT	Assuming prices stay the same
Capture device	1200 + VAT	For each room beyond the 4th
TOTAL	**4255 (2875)**	**Does not include AVT costs: see note below. (4 capture devices available)**

Per course:

Item	Cost	Notes
SAN Storage	50	Assumes 25 courses participating – allows 20GB SAN storage each.
Support	265	1 day per course. Enables a reasonable level of support overall
TOTAL	**365**	

AVT costs will vary according to the existing specification of the room, details of these costs are given in *Appendix C Sample costs for upgrading learning spaces for lecture capture*. Cameras are currently installed in: Appleton Tower LT1-5; JCMB LTA & LTB; Chrystal Macmillan Building Seminar Room B; Informatics Forum.

8.5. Service costs for 2009/10

For the cost estimates below it has been assumed that:

- For up to 8 rooms no additional AVT spend will be required, or this spend will be separately funded;
- the University already have 4 capture devices;
- above 8 rooms an additional £2000 per room for AVT equipment will be required;
- costs do not include staff time for AVTS or user support other than that provided by Applications Division to centrally support the service.

Below is a table of costs based on an assumption that 8 courses per year per equipped room will participate in using a lecture capture service in the next academic year:

# Rooms	# Courses	Capital costs	Staff costs	Overall Cost	Cost per course
4	32	£6,550	£8,480	**£25,030**	£782
8	64	£15,170	£16,960	**£52,130**	£815
12	96	£31,790	£25,440	**£87,230**	£909

From these figures it is clear that priority should be given to concentrating courses for capture into equipped rooms. If 8 courses per room per semester were being recorded the costs would be as follows:

# Rooms	# Courses	Of which Capital	Staff costs	Overall Cost	Cost per course
4	64	£8,150	£16,960	**£35,110**	£549
8	128	£18,370	£33,920	**£72,290**	£565
12	192	£36,590	£50,880	**£117,470**	£612

The additional overall cost given in the table solely consist of costs for additional SAN storage and support. It is likely that a system architecture can be developed whereby content can be stored on the IS Podcasting and Streaming Service, substantially reducing the SAN storage requirements. See *Appendix B Technical Evaluation* for a discussion of this.

8.6. Timescales for implementation

A decision on whether to proceed with using the existing echo360 based service for 2009/10 academic year will need to be made by mid-June in order to reduce costs by retaining the existing server infrastructure.

A business plan for providing a lecture capture service in future years, including a procurement phase for choosing the most cost-effective supplier should be drawn up prior to the decision about 2009/10 academic year being made. Funding for developing this service into a self-sustaining service should be sought to inform the decision about whether to proceed with a limited service in 2009/10.

Appendix A: APS019 Lecture Capture Pilot Report

Evaluation of lecture capture at the University of Edinburgh: student and staff feedback

Author	Sarah Gormley
Version	V5.0
Date	23 March 2009

Appendix A: APS019 Lecture Capture Pilot Report

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Appendix A: APS019 Lecture Capture Pilot Report

1 Executive Summary

The University of Edinburgh lecture capture pilot took place in semester one of Academic Year 2008/09. This report details staff and student reaction to lecture capture at the University. Fifteen courses were involved in the pilot. Students on seven courses in the pilot gave feedback via an online survey, focus groups, and a discussion board. Data was gathered from 147 students; most students were first year Linguistics students, second year Physics students, or second and third year Informatics students.

In general, students were supportive of lecture capture; 90% of the 124 survey respondents thought lecture capture was a good idea, although when asked if they had used the recordings, 34% said they had not watched any recordings, while 43% of the students reported they had watched a few, we have no usage data to see if what these students say they do is what they actually do. It is clear some students see no value in their lectures being recorded, but **students who chose to watch the recordings said they value them as a way to reinforce concepts**, or to catch up after missing a lecture. **The most popular format appears to be enhanced podcast** (41%), closely followed by rich-media (34%); the format of recordings needs further investigation.

Sixteen staff involved in the pilot were interviewed. **General reaction to the lecture capture was mainly positive with most (11) lecturers happy to record lectures again**. Many staff were primarily interested in student reaction to lecture capture. A few staff reported that a few of their students had told them how much they valued the recordings. It could be argued that staff choosing to be involved in the pilot are likely to be supportive of lecture capture; it is still encouraging that most staff involved in the pilot were positive of their experience despite the technical glitches experienced by some.

Staff in each School of the University were asked to respond to the idea of lecture capture. **The reaction from the Schools was mixed**. In the College of Science and Engineering (CSE) three Schools were strongly against lecture capture, one School was strongly in favour of lecture capture, and in the remaining three Schools some staff were for, and others against, lecture capture. Staff concerns were mainly: drop in attendance, losing the interactivity of a lecture, IPR, privacy and control issues (for example, if a clip ended up on youTube), and the high cost of a lecture capture service. **There is not widespread support for a University-wide service in CSE but some staff are interested in lecture capture**.

Five of the ten Schools in the College of Humanities and Social Sciences (HSS) responded to the call for feedback. One School was interested in seminar capture; another was interested in lecture capture. Staff responses from three other Schools were mostly against lecture capture, but some staff were supportive. The reasons against lecture capture were similar to those of CSE: important for staff and students to interact, IPR and privacy issues, as well as lectures being used out of context, and the potential drop in attendance. **The response from HSS is overall quite negative towards the idea of lecture capture at the University of Edinburgh; however there are some groups of enthusiasts who would value the chance to be involved in lecture capture at the University**.

Appendix A: APS019 Lecture Capture Pilot Report

In the College of Medicine and Veterinary Medicine (MVM) key staff from the three main undergraduate programmes in MVM are responsive to the idea of lecture capture, perhaps on a pilot basis.

2 Methodology

The evaluation of the lecture capture pilot ran from October 2008 to February 2009. The pilot involved staff and students in the College of Science and Engineering (CSE) and the College of Humanities and Social Sciences (HSS). No courses in the College of Medicine and Veterinary Medicine (MVM) signed up to the pilot. However, feedback from a number of key teaching staff in MVM was gathered for this evaluation.

The lecture capture pilot involved 15 courses run in semester one of Academic Year 2008/09. A summary of the input from each course is shown in Table 10.

Student evaluation data was gathered by survey, focus groups, and a discussion board. 124 students completed a survey. Eighteen students were involved in four focus groups, and six students responded via their course discussion board. It was hoped that more student data could be gathered but the time restraints of the evaluation period made this impossible.

Staff teaching on courses in the pilot gave feedback by interviews; staff who were not involved in the pilot contributed by surveys or email contact with the evaluation team. Despite the best efforts of the evaluation team a number of pilot contributors could not be involved mainly due to lack of response to calls for information. Some of the courses involved had large course teams, and wherever possible as many lecturers as possible were interviewed. Feedback from staff not involved in the pilot represents the views of staff in fifteen of the twenty-two Schools at the University. It is felt that sufficient data has been gathered from University staff to inform this evaluation.

Appendix A: APS019 Lecture Capture Pilot Report

3 Student Data

3.1 Students: who gave feedback

3.1.1 Which students provided feedback?

An online survey was available to a number of courses who were involved in the pilot. The composition of the students who responded is shown in Table 1.

Module/ Number [1]of students on course	*Year*	*Number of responses*
Linguistics 1A / 209	1	60
Physics 2A / 198	2	40
Informatics 2A / 100 (15), 2C / 92 (5) and IVR (4) (3rd year course):	2/3	24
TOTAL		*124*

Table 1: Students who responded to the online survey

The focus groups were run in January 2009. Students were recruited by posters and with the help of the Physics 1B course leader (a course that follows on from Physics 1A). Two focus groups were run specifically for Physics 1A students who had been exposed to lecture recordings in semester one; the remaining two focus groups were for all students but both sessions included students from courses that had used lecture capture. The composition of the student focus groups is shown in Table 2.

Focus Group	Students[2]
FG1: Mon 26 Jan 2009. 12 – 1pm	Physics 1A. (4 males) = 4 total
FG2: Mon 26 Jan 2009. 1 – 2pm	Physics 1A (1 male), Mechanical Engineering (1 male), Politics students who had studied Social Policy one of the recorded courses (2 females, 2 males) = 6 total
FG3: Wed 28 Jan 2009. 12 – 1pm	Physics 1A. (2 females) = 2 total
FG4: Wed 28 Jan 2009. 1 – 2pm	Maths and Economics (1 male), Maths (1 female), Communications (1 female), English Literature (1 female), Civil Engineering (1 female), Computer Science (1 female MSc) = 6 total
Total	17 first years, 1 MSc level. HSS[3] (6), CSE[4] (12). Males (9), females (9) = 18 students

Table 2: Composition of the student focus groups

[1] Student numbers are from WIZARD
[2] Unless otherwise specified all students at the focus groups were first year
[3] HSS = College of Humanities and Social Sciences
[4] CSE = College of Science and Engineering

Appendix A: APS019 Lecture Capture Pilot Report

3.2 About Our Students

3.2.1 Focus Group Q1: How many hours a week do you study?

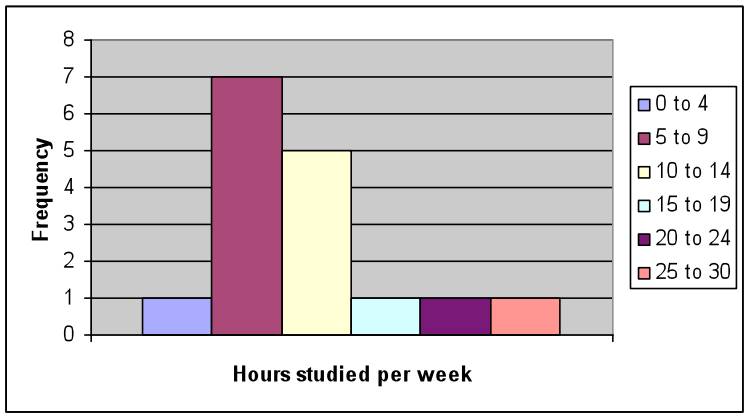

Table 3: Number of hours studied per week

Table 3 shows the number of hours studied per week by the focus groups students. Of the eighteen students interviewed most students fell into the 5 to 9 hours category (44%), followed by students reporting they studied 10 to 14 hours per week (36%); this is perhaps unsurprising as they are all (apart from one student) first year undergraduates. Students were also asked if they felt they should be studying more. Of the eighteen students ten thought they should be doing more; three thought they were doing enough.

3.2.2 Survey Q5. How would you rate your computer proficiency?

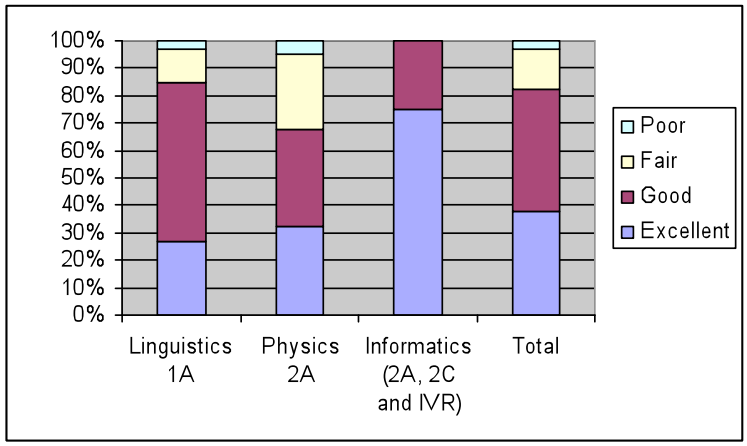

Figure 1: How would you rate your computer proficiency? Sample size of total category = 124

Figure 1 shows the level of computer proficiency stated by students in the online survey. In general, most students reported their level of computer proficiency as good or excellent. Informatics students appear the most technically competent with 100% reporting their level of computer proficiency as either good or excellent. Regardless of their perceived level of computer proficiency all student groups experienced a small proportion of technical problems.

3.2.3 Survey Q6: Do you have a mobile playback device?

Students responding to the survey were asked if they have a mobile playback device such as an ipod. The results are shown in Figure 2. The majority of all students (77%) do own a mobile playback device.

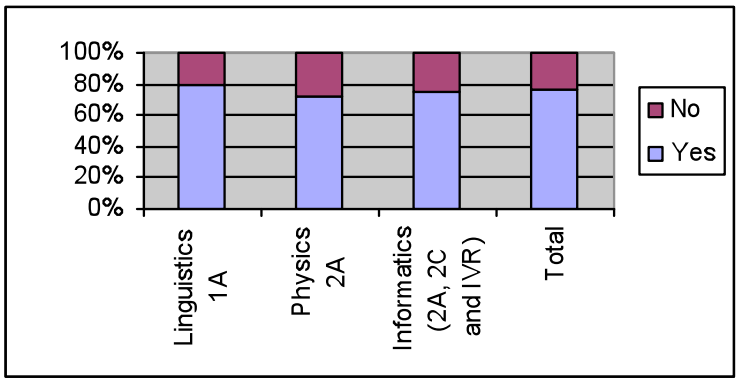

Figure 2: Do you own a mobile playback device?
Sample size of total category = 124

Would these students download lecture recordings to their device? A later section (3.5.3) relates ownership of this device to interest in downloading lecture recordings

3.2.4 Focus group Q2: Study Methods

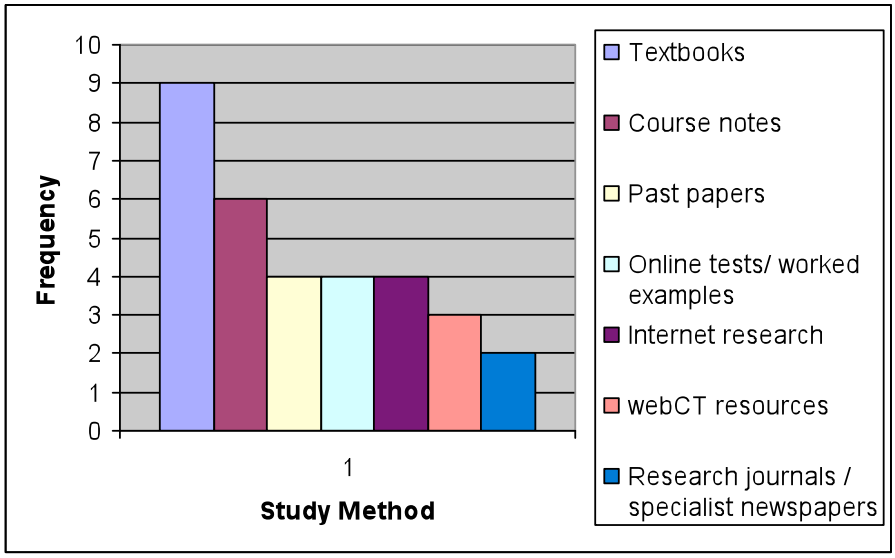

Table 4: Study methods cited by focus group students (sample size = 18)

Students at the focus groups were asked how they studied (see Table 4). The most commonly cited methods were textbooks (9)[5], then course notes (6), followed by online tests/worked examples (4), past papers (4), and internet research (4); resources accessed from webCT (3), and research journals and specialist newspapers (2) were other methods mentioned by students.

[5] The number in brackets denotes how many of the students cited this reason

The responses are unsurprising and perhaps reflect the high proportion of the focus group students who were studying traditional science subjects, and the first year status of the majority of the students.

3.2.5 Focus Group Q3: Do you like the use of learning technology in your course?

Students were asked for their thoughts on the use of learning technology and whether it was beneficial to their learning. The following section shows the comments from the focus group students; the number in brackets shows how many times this topic was mentioned.

Overall students were positive about the use of learning technology in their course. Most students commented on the benefits of learning technology or the resources this gave them access to (9). WebCT was praised as "a good place to find everything" (4), Physics 1A students thought the use of technology on their course was very useful (3). Discussion boards were noted as a "good place to go if you are struggling", especially when lecturers contribute to the discussion (2). Physics 1A students overwhelmingly liked the use of clickers (4), and self-test questions were thought a useful resource. Of the less positive comments it was thought that the technology could be tricky (1), there was a reluctance to rely too much on technology like lecture capture (1), and there were sometimes problems when trying to access resources from home (2).

No students we spoke to used their laptop in lectures, many cited the problems of typing maths characters as the main reason; others simply preferred to write notes. No students we spoke to considered using social networking tools such as Facebook for their learning.

Appendix A: APS019 Lecture Capture Pilot Report

3.3 Emerging Themes 1

The survey gathered the opinions of 124 students, who are first and second year undergraduates in the School of Philosophy, Psychology and Language Studies, School of Physics and the School of Informatics. Half the students who responded were from the College of Humanities and Social Sciences (60) and half the students were from the College of Science and Engineering (64). No data was gathered about the age or gender of the students.

The majority of the students responding to the survey consider they have a high level of computer proficiency, with most reporting either a good or excellent level of competency. Informatics Years two and three students were slightly different with the entire cohort reporting good or excellent computing skills. Most students (77%) do own a mobile playback device such as an ipod.

Eighteen students attended the focus groups, the composition of the groups were mainly science students from the Physics 1A course involved in the pilot. Other students were from Maths and Politics. Most of the students at the focus groups were first year students. The data is therefore limited in applicability to the whole student population of the University. Nevertheless, there are interesting trends to note.

Students at the focus groups were asked how many hours per week they study (outside set class hours). The majority of students reported they spent between 5 to 14 hours a week studying. When asked if they should spend more time studying ten of the eighteen students thought they should be doing more. The most popular study methods were the use of textbooks, course notes, past papers, worked examples and online tests, internet research and the use of resources available in webCT; these results are perhaps unsurprising in a cohort of mainly first and second year students. Students were asked if they liked the use of learning technology in their courses. The response was positive, half of the students (50%) commented on the benefits of learning technology or the resources they now had access to. No students we spoke to used their laptop in lectures, many cited the problems of typing maths symbols, and others were quite happy taking notes in the traditional manner.

Appendix A: APS019 Lecture Capture Pilot Report

3.4 Lecture capture: the concept

3.4.1 Survey Q2: How many of the recordings have you viewed?

Students at the focus groups were asked how many of the recordings they viewed (see Figure 3). For the whole student group the most popular response was "a few" (43%) followed by "none" (34%), then by "most" (17%). Subject variations can be seen in Figure 3. For example, Informatics students most popular response was "most" of the recordings (38%), while Linguistics most popular response was 57% of students watched "a few" of the recordings. It is hard to conclude the importance of these responses particularly with the relatively small sample size.

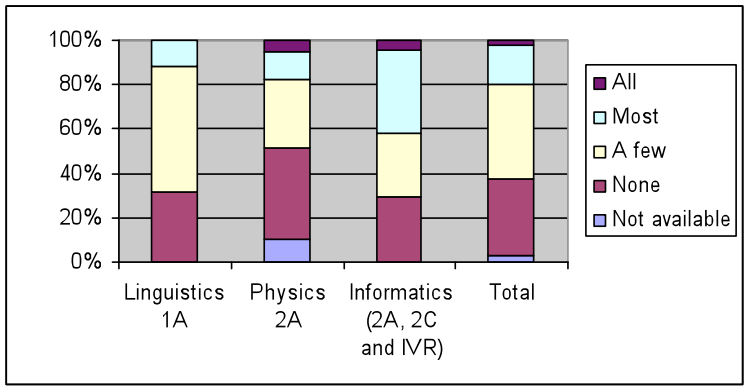

Figure 3: Survey Q2. How many of the lecture recordings have you viewed? (Sample size = 124)

What are the reasons for your choice? Linguistics and Informatics students were asked the reasons why they watched, or didn't watch the recordings. Again, the number in brackets shows the number of students who cited the reason.

Reasons	*Linguistics 1A*	*Informatics 2A, 2C and IVR (3rd year course)*
Students reasons for watching **none** of the recordings:	have attended all lectures (5); have not needed to (4); will use for revision (3); don't have time (3); prefer to use other study methods (2); technical problems (3).	technical problems (3); don't need to use them (1);
Students reasons for watching **a few** of the recordings:	reinforcement of information (11); missed lecture (10); revision (2); access / webCT problems (1)	reinforce key points (1); revision (2).
Students' reasons for watching **most** of the recordings:	reinforcement (6); missed lecture (4)	revision (1); reinforcement (2)

It is interesting that both sets of students cite reinforcement of information, revision and catching up after missing a lecture as the key reasons for using the recordings. Students who do not wish to use the recordings simply did not need to see the lecture again, were frustrated by technical problems, or did not have time.

3.4.2 Survey Q3. Did you find the recordings useful?

Students were asked if they found the recordings useful, the results are shown in Figure 4. **Of the students who did use the recordings the vast majority (60%) did find them useful**; followed by students who "didn't use them" (30%) – likely to be a good indicator that they don't think the recordings useful. Few reasons were given as to why students did not use the recordings or did not find them useful: technical problems (1), couldn't view from home (1), many students gave no reason why they didn't use the recordings. **Of the students who found the recordings useful the reasons given were: reinforcement of topics or to improve notes was the most frequently cited (17) reason**, with others saying that if they missed a lecture they didn't miss the topic (2), all major themes that emerged from Survey Q2 (see Section 3.4.1).

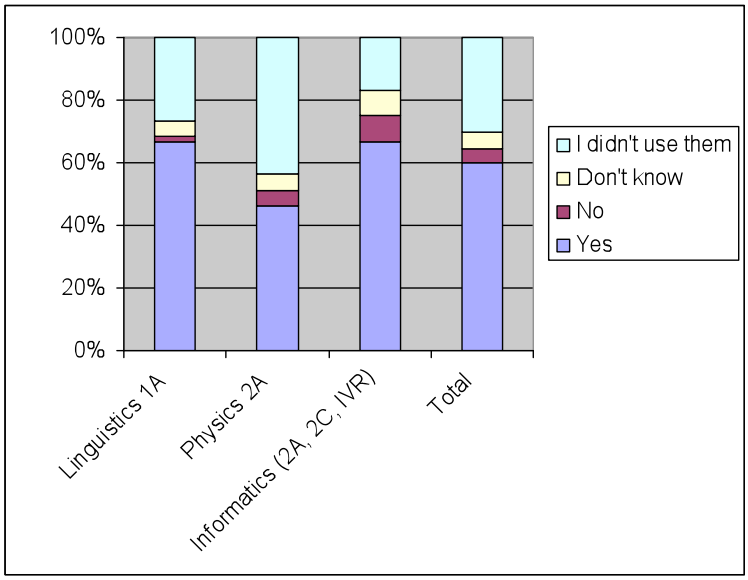

Figure 4: Did you find the recordings useful?

No student gave the opportunity to not attend lectures as a reason why the recordings were useful – this is one of the biggest concerns for many teaching staff. Let us now consider the responses to similar questions asked at the focus groups.

3.4.3 Focus Group Q4: If your lectures were recorded would you use them?

Of the twelve students on courses with recorded lectures, most had not used the recordings (8); six students did not want to use them, and two students had not been able to use them. The four students who had viewed the recordings were positive about them; saying they were a useful resource (2) and they would use them again (1). Some students who had not used the recordings planned on using them for their revision (2). Their comments are listed in Table 5.

Comments	*Students with access to recordings (12)*	*Students with no access (6)*
Students reasons for not using recordings	No. I did not use the recordings (6). Comments: No use to me (1) Would use for revision (2)	I wouldn't use them (1)
Students reasons for using the recordings	Yes. Did use the recordings (4) Comments: They were useful (2) I would use them again (1)	
Students said they could not use the recordings	I couldn't use them (2) Comments: Access problems for Physics 1A (2)	Not applicable
Students who said they might use recordings	Not applicable	Maybe (3). Comments: only if I didn't understand something (1) If they were available from other universities (1)

Table 5: Focus group students. Would you use lecture recordings?

3.4.4 Focus Group Q5: General reaction to lecture capture

Students at the focus groups were asked for their thoughts on the idea of lecture capture at the University of Edinburgh. The results are shown in Table 6.

Comments	*Students with access to recordings (12)*	*Students with no access (6)*
Reasons for using lecture capture	revision (3), reinforcement (3), good to listen to the lecture rather than take all notes down (3), missed lecture (1), to understand problem areas (1)	reinforcement (1), good to listen to the lecture rather than take all notes down (1)
Reasons for not using lecture capture	technical problems (3), re-listening to a lecture will not help me understand an area I am struggling with (1)	technical problems (1), not enough time (1), Wouldn't benefit from re-watching lectures (1).
Potential uses of lecture capture	recap of topics or summary of key areas (3); demonstrations (2), seminars (2)	
General comments	wouldn't want to rely on lecture recordings (2)	

Table 6: Focus groups. General reaction to lecture capture

The students who rated lecture capture had consistent themes: use for revision, for reinforcement, to enable lectures to be watched rather than to simply focus on getting the notes down. Students who did not value lecture capture considered that it was of no benefit to simply re-watch lectures, and the technical problems (of the pilot) may have led to some students being unwilling to rely on the resource.

Appendix A: APS019 Lecture Capture Pilot Report

Many students at the focus groups talked animatedly about the potential uses of recording content such as seminars, summaries of key topics and demonstrations, as a valuable resource that would aid their studies. The author notes that when general lecture capture was discussed the level of enthusiasm was never as high as when the capturing of demos, seminars, etc was discussed.

3.4.5 Survey Q9. Is lecture capture a good idea?

All students responding to the survey had access to the lecture recordings of their course; they were asked if they considered lecture capture a good idea. The results are shown in Figure 5.

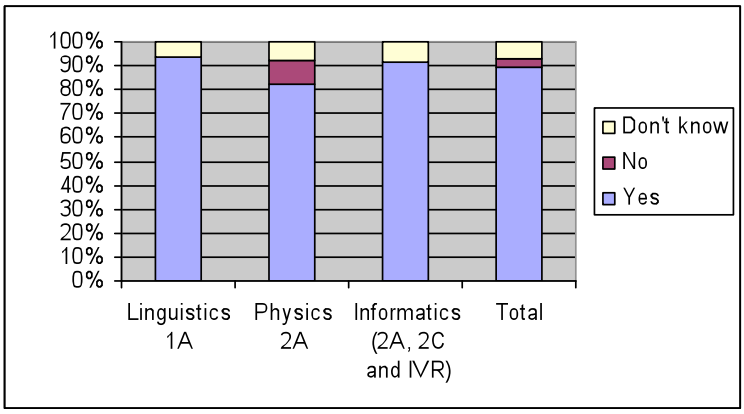

Figure 5: Is lecture capture a good idea?
Sample size of total category = 124

The majority of students (90%) responded that lecture capture was a good idea (Linguistics: 93%, Physics 2A: 83%, Informatics: 92%), although it is worth considering that what students say they will do and what they actually do may be quite different, the "intent to use" data is interesting and may warrant further investigation. The reasons cited are listed in the table below; the number in brackets after each category denotes how many times this particular response was mentioned by students. No data of this type was gathered from the Physics 2A students.

Reason why lecture capture is a good idea	*Linguistics 1A (56 responses)*	*Informatics 2A, 2C and IVR (22 responses)*
Missed lecture	16	3
Hard to get everything written down during lecture	8	1
Reinforcement of content covered in lecture	7	6
Revision	6	6
Good to see visual aids	2	1
Using rich-media from other Universities already	1	1

Figure 6: Reasons why lecture capture is a good idea

There were few students (3%) who did not consider lecture capture a good idea. Reasons cited were unreliability of the technology (1) and no point in re-watching

lectures they have attended (1). Both these reasons were given by Informatics students.

Students taking the Legal Reasoning and Legal System first year course responded to a call from feedback from their lecturer for feedback to the lecture recordings available as part of their course. Only five students responded but all feedback was positive apart from some queries about technical issues. Students reported: recordings are useful (5), sound quality is poor (1), would be easier to access if available on iTunesU (1), you miss the dramatic effect of seeing the lecture (1).

The information gathered from students appears to agree that most students consider lecture capture a good idea. The reasons stated by each group are similar: catching up on a missed lecture, reinforcement of topics, hard to get everything written down during a lecture.

3.5 Lecture capture: the details

This section of the report will attempt to elicit information from students on details such as format preferences, and technical issues they may have experienced. The student data is predominantly from students, who had the opportunity to use the recordings (87% could access recordings), but we do not have data linking student responses to actual usage of the recordings; the data may therefore be what students **say** they would do or use, rather than what they would actually **do** or use.

3.5.1 Survey Q8: What is the most useful format for you?

Students responding to the survey were asked what format they would prefer. The available options are: rich-media (video, slides and audio), enhanced podcast (audio and slides), and podcast (audio only). Figure 7 shows the students' preferences.

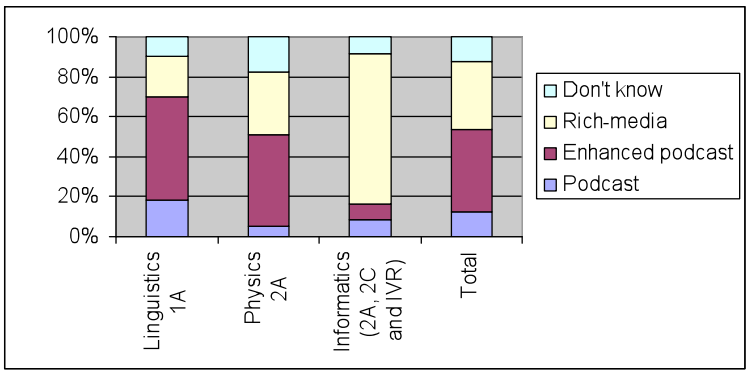

Figure 7: What would be the most useful format?
Sample size of total category = 124

The results of the total student group are enhanced podcast (41%), rich-media (34%), and podcast (12%). This question did raise subject variations. The majority of Linguistics 1A students (52%) proposed enhanced podcast as the most useful format. Physics 2A concurred with (46%) voting for enhanced podcast. Only Informatics differed with 75% voting for rich-media.

If we now look at the responses from students who **do** have a mobile playback device and who **would** download the recordings (see figure 8) the trends become more marked – but the results should be used with caution as the sample size drops to 41 students. For Linguistics 1A students the split between format changes to: Enhanced Podcasts (45%), Rich-media (29%), Podcasts (26%), those who "don't know" disappears. For Informatics 2A, 2C and IVR the breakdown is: Rich-media (60%), Podcast (20%), Enhanced Podcast (10%), these figures relate to only ten students so should be used with caution. Physics 2A data is not available for this analysis.

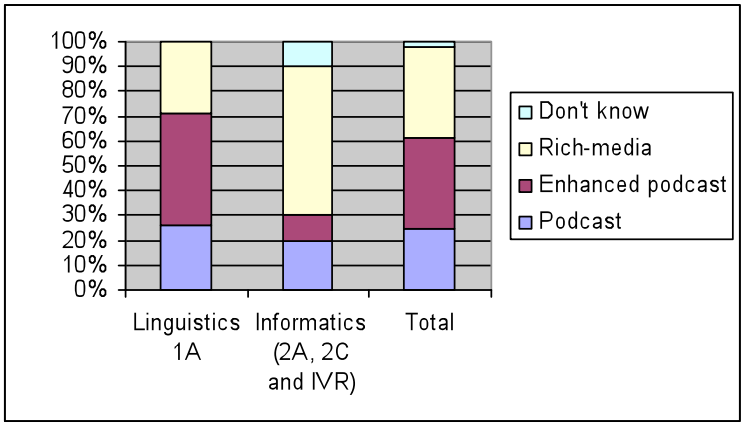

Figure 8: Of those who own a device and who would download and use the recordings on their device what is the most useful format? (Sample size = 41 for the total category)

3.5.2 Focus Group Q6: Preferred format of recordings

Are the trends similar in the students who attended the focus groups? Of the eighteen students only ten commented on their preferred format. The data is shown in Table 7, the very limited sample size of ten should be considered when using this data.

Format	%	Students
Rich-media	70	Physics 1A (2), politics (3), maths (1), mechanical engineering (1)
Enhanced podcast	20	Research Methods (1), Civil Engineering (1)
Podcast	10	English Literature (1)

Table 7: Focus groups. Preferred format Sample size = 10

Few students had given much thought to their preferred access method. Only three students commented, with two students (Communications, Physics 1A) preferring to download files, and one student opting for streaming (Physics 1A).

If we use the largest data set we have, that from the survey it would appear that the preferred format is enhanced podcast, with many students saying that simply having the audio is not enough. There is strong support for the rich-media option with some students saying that seeing the lecturer does add to the learning experience. Let us now look at the data gathered that investigates the use of recordings on mobile playback devices.

3.5.3 Survey Q7: If your lectures were recorded would you download them and use them on your mobile playback device?

The subset of students who **do** have a mobile playback device (80% linguistics 1A; 75% Informatics) were asked if they would download lectures and use them on their device. The results are shown in Figure 9.

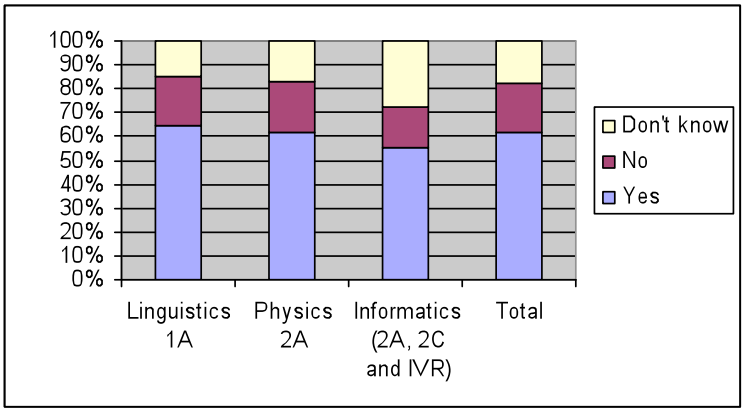

Figure 9: Those who own a mobile device would you download the recordings and use on your device? (Sample size of total category = 66)

Most students report they would download recordings to their mobile playback device for use (65% Linguistics 1A, 55% Informatics, 62%[6] Physics 2A).

[6] Note: the Physics 2A data for this question includes students who do and do not own a mobile playback device; the other two student groups only include data from students who do have a mobile playback device.

3.5.4 Survey Q4: Did you have any problems using the lecture capture recordings?

Students responding to the survey were asked to describe any problems they experienced when using the lecture recordings, the results are shown in Figure 10. Every group reported that the majority of students did not experience problems accessing the recordings. Informatics students do not use webCT therefore none reported webCT problems. Students who gave further details of their problems were either webCT problems (e.g. webCT is slow (2)) or bandwidth/problems (e.g. format of files could be better (2)). Other reasons cited were RESNET problems (2), the inability to watch recordings at home (even when the VPN was setup correctly). Physics 2A students' main problem was webCT problems – no specific information about the details of problems was recorded during the clicker feedback session.

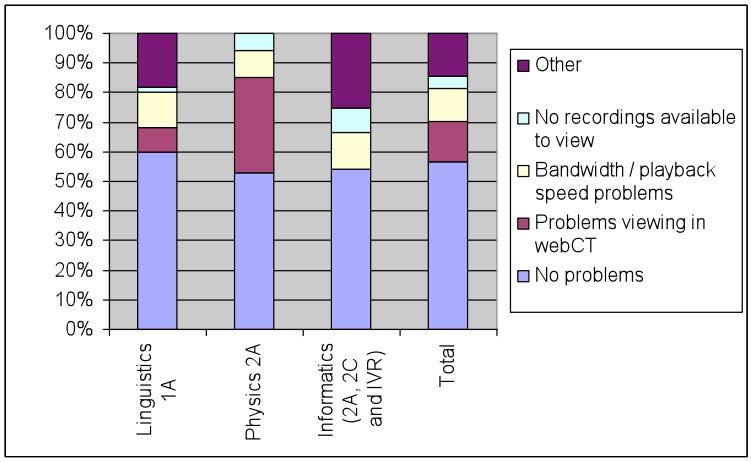

Figure 10: What problems did students experience using the lecture capture recordings? Sample size for total category = 118

3.5.5 Focus group Q9: Which resources[7] are most valued by students?

Focus groups students were asked to rank fifteen potential resources associated with courses. The outcome was ranked (most popular scored 15 points; least popular scored 1 point). Students were also able to add other resources they valued, although no students added any. The results are shown in Table 8, the left-hand column has the outcome of the data gathered from students on courses that did record lectures in semester one; the right-hand column shows the overall results for all students at the focus groups.

Students from courses that recorded lectures (sample size = 12)	*All students at the focus groups (sample size = 18)*
Course Notes (155)	Course notes (178)
More time with teaching staff (136)	More time with teaching staff (159)
Tutorial groups (132)	Tutorial groups (145)
Online self test (120)	Online self-test (143)
Peer groupwork (116)	Peer groupwork (133)
More thorough and timely feedback (115)	More thorough and timely feedback (132)
Worked examples (96)	Worked examples (125)
Lecture capture (86)	Lecture capture (100)
Subject newspapers / websites (81)	Journal articles (95)
Journal articles (77)	Subject newspapers / websites (94)
Interactive Teaching Studio (67)	Interactive Teaching Studio (89)
Blogs / wiki (57)	Blogs / wiki (62)
Clickers (47)	Clickers (51)
Podcasts (25)	Podcasts (25)
Specialise software (14)	Specialist software (21)

Table 8: Focus groups. Student priorities for resources

There is no major difference between the results from the students on courses that had recorded lectures, and students on courses who did not record lectures. Lecture capture is rated 8th out of 15. Unsurprisingly, **the main priorities for students are course notes, time with teaching staff, tutorial groups, peer group work, feedback and worked examples**. The results of this exercise do reflect that most of the students at the focus groups are first year students, journal articles for example, may not typically be seen as critical until later years. Lecture capture comes half way down the ranking.

[7] Resources are defined as general learning and teaching resources such as course notes, as well as key aspects of a course such as feedback from tutors.

Appendix A: APS019 Lecture Capture Pilot Report

3.6 Emerging themes 2

Students responding to the survey all had access to the recordings.

- Students were asked if they had viewed the recordings; **the largest response (43%) was students had watched "a few" of the recordings**, followed by "none" (34%).
- When asked why they watched "a few" recordings the responses were: to reinforce the information, or because they had missed the lecture.
- Students **who had not watched** the recordings stated they did not need to re-watch the lectures, they didn't have time or they preferred to use other study methods.
- Students were asked if they found the recordings useful. 60% reported they did find them useful, with 30% stating they did not use them. Again reasons for the value of recordings were similar: useful to reinforce topics or to improve notes were the most frequently cited reasons.
- Students responding to the survey did overwhelmingly **think lecture capture was a good idea** (90%). Reasons were those stated previously: reinforcement, hard to get everything down in the lecture, catch up after a missed lecture and revision.
- The overwhelmingly positive student data should be used with caution as in many cases what students actually do can be different from what they say they will do, perhaps the "intent to use" should be investigated further

Students at the focus group[8] were split on the usefulness of lecture recordings.

- The majority of students (6) thought the recordings were not of value, followed by those (4) who would use lecture recordings; the remaining students (2) were unable to access the recordings or were unsure about their usefulness (3).
- Overall reaction to lecture capture was similar to data gathered from the survey. The **majority of students did think lecture recordings were useful**, and they would consider using them for reinforcement, revision, and the opportunity to listen to the lecture rather than take down notes.
- Students not interested in lecture capture stated similar reasons as those in the survey: no benefit to re-watching lectures, not enough time and technical problems.
- The results of the survey and focus groups appear to show that students are very much for or against lecture capture, with a slight majority in favour.

[8] Note: not all students at the focus groups expressed a view about the usefulness of lecture recordings, which explains why the frequency of answers does not add up to eighteen: the number of students.

Appendix A: APS019 Lecture Capture Pilot Report

We now look at specific lecture capture issues such as format and where lecture capture fits with other student resources.

- Students from the survey ranked the three possible formats in the following order: enhanced podcast: audio and slides (41%), rich-media: video, audio and slides (34%) and podcast: audio only (12%).
- Of students who do have a mobile playback device and who would download the recordings to their device the **preferred format was enhanced podcast** (37%) and rich-media (37%) and podcast (24%).
- Information gathered from the focus groups relates to only ten students so should be used with caution; seven students preferred rich-media, two opted for enhanced podcast and one for podcast. The author would recommend that **further investigation is undertaken to investigate the preferred format of lecture capture recordings**, especially with the inherent cost implications of capturing videos. The added value of video is unclear at this stage.

Students responding to the survey were asked if they would download recordings to mobile playback devices.

- **Most students responded they would download the resources to their mobile device** (65% Linguistics 1A, 55% Informatics).
- Students were then asked if they had problems using the recordings. Most did not have any problems (57%); 14% reported problems viewing in webCT, 11% reported problems with bandwidth or access problems.

Focus group students were asked to rank fifteen resources allied to their courses.

- There was little difference between the twelve students on courses that were part of the pilot, and students with no access to lecture recordings. **Resources that were rated highly were: course notes, more time with teaching staff, tutorial groups, online tests, peer groupwork, more thorough and timely feedback and worked examples**. Lecture capture was rated eight out of fifteen.
- The resources valued by students are perhaps of value to students in first and second year more than the entire student population of the University.

4 Staff Data: teaching staff involved in the pilot

4.1 Teaching staff involved in the pilot

Table 9 shows the courses involved in the pilot. The number in brackets after each course shows how many members of staff were interviewed during the evaluation. Other staff members did not respond to the request for feedback, or were not available in the time period of the evaluation.

Year / College	College of Science and Engineering	College of Humanities and Social Sciences	College of Medicine and Veterinary Medicine
One	▪ *Chemistry 1A (2)*, School of Chemistry ▪ *Physics 1A (1)*, School of Physics	▪ *Legal Reasoning and the Legal System (1)*, School of Law ▪ *Linguistics 1A (5)*, School of Philosophy, Psychology and Language Studies ▪ *Social Policy and Society (1)*, School of Society and Political Studies	None
Two	▪ *Informatics 2A,* School of Informatics ▪ *Informatics2C (1)*, School of Informatics ▪ *Physics 2A (1)*, School of Physics ▪ *Computer Tools for Civil Engineers (1)*, School of Engineering and Electronics	▪ *Organisation Studies (1)*, School of Business and Economics ▪ *Principles of Finance,* School of Business and Economics	None
Three	▪ *Introduction to Vision and Robotics (1)*, School of Informatics	None	None
Four	▪ *Advanced Vision*, School of Informatics	None	None
Postgraduate	▪ *Informatics Research Methodology (1)*, School of Informatics ▪ *Text technologies*, School of Informatics	None	None

Table 9: Courses involved in the pilot

Additional events: Seminar series in Physics, Special lecture series in Maths by Sir Michael Atiyah.

Appendix A: APS019 Lecture Capture Pilot Report

4.2 College of Science and Engineering

Staff involved in the lecture capture pilot

Feedback was gathered from sixteen staff representing eleven of the fifteen courses in the pilot. The roles of staff were: lecturer (5), senior lecturer (2), teaching fellow (2), reader (2), and professor (5). From this point onwards the term lecturer will be used to denote comments made by these staff. The responses are anonymous to encourage staff to speak freely.

Course 1
Teaching team: Large course team (exact number unknown)
Teaching style / resources used: Slides, visualiser, interactive elements, clickers, demonstrations, blackboard
Year: 1st

Lecturer A: Problems with first two lectures; in lecture 1 the wrong lecture was taped; in lecture 2 there was no sound. The only difference to my normal lecturing was it made me stay in the same place more than normal. There was a quick response to support queries. I am not sure what is the best way to use the recordings; they may only be useful to a small number of students. Yes, I would record them again.

Lecturer B: One problem is that the recording doesn't capture the whole lecture theatre, I can't move around. I write on the board and this is not captured. I have doubts that watching the lecture at home will be beneficial to students; working through examples is more useful. I would think the use of a scribe to produce a transcript of the lecture would be of more use. There is a need for a School, College or University policy on lecture capture. I am not sure recordings are a good thing, it is better to be thinking than just watching.

Course 2
Teaching team: 1 lecturer
Teaching style / resources used:
Year: 2nd

Lecturer: I was happy to be involved as I am keen to use all new technology when appropriate. I edited one recording; the editing tools are not very flexible. I used the RSS feed to make the rich-media available, the recordings are available as they are. I had a problem, I used dual screens in one lecture changing from slides to the other screen, the system stopped recording the slides and the screen was black. It recorded with projector 1 not projector 2, which seemed quite odd. There was a problem with the video, low resolution slides don't always change, not high resolution when using matlab. The quality of the recordings was ok, having video with low resolution not very valuable. Video bit is not that useful. Most people would like to hear what is happening and the aids. I would prefer an open system that I could use cross-platform editing tools on my laptop to edit the recordings. It would be useful to have a start/stop function to avoid the unnecessary info at the start and end of the lecture, although the scheduling of recording is nice. I haven't noticed a drop in attendance after making the recordings available.

Appendix A: APS019 Lecture Capture Pilot Report

If we drop the video component there are many software options that could be used to produce recordings. Video seems a lot of cost for little benefit. Dissemination via iTunesU might be interesting, but I would be concerned at an error being available on youTube and open to ridicule. Yes, I would record again.

Course 3
Teaching team: 3 lecturers
Teaching style / resources used: Chalk and talk style, clickers
Year: 2

Lecturer: I just add the links to the course webpages. I think it is useful for students to get the chance to watch lectures again. Recording the audio was a lot of hassle for me last year, using this system was better for students and for me. In the future, if you miss a lecture you don't miss out, or if you need to rehear it, there are good reasons why students don't attend. We will need to do more for our students in the future. Recording rich-media would be my first choice; audio and slides would be almost as good. I made my recordings available asap. One problem is that I move around too much at the front. We had a student in class to make sure it worked right. Bob Fisher provided excellent support. Problems: in one lecture some of the streams weren't mine. In another lecture, it was me and the right audio but my slides were missing. The quality of capture is good. Yes, I would record again.

Course 4
Teaching team: 1 lecturer and guest speakers
Teaching style / resources used: Mix of styles, traditional lectures for half the course, followed by student presentations for the second half of the course
Year: MSc

Lecturer: The lecture capture was not intrusive at all. It is straightforward to add the links to the course website. I did no editing of recordings, they are available as recorded. I have been interested to try out lecture capture for a while. I made everything available to my students. There was some delay in making recordings available due to problems with the portable kit. It was frustrating it was a black box. Informatics students could have tried to sort it out. The main audience for the recordings is potential students, and outside users. This course produces lots of hits on my website. It would be useful to capture some of the seminars or guest lecturers that take place in the Informatics Forum. Yes, I would record my lectures again.

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Course 5
Teaching team: 2 lecturers
Teaching style / resources used: Traditional style, videos, course website
Year: 3

Lecturer: I got help from the lecture capture team as required. I have been recording lectures for a few years and wanted to find an easier way of providing these resources for students. I recorded everything. Not all recordings have been going well, with some lost audio and slides. I make the recordings available asap. It made me review how I lecture: a valuable experience. Four teaching assistants were trained to use the portable kit. I have no clear idea if students are using these resources, I may be able to get information from Echo stats. It is a lot of effort on my part and my team to capture the recordings and make them available. Ideally, the process would be automatic and centralised. Lecturing staff should simply turn up and be recorded. For AT the scheduling worked well. The editing of the videos is problematic with buggy software. The effort is in collating the lectures. Current distribution is via the course website. Mobile capture has been problematic: if you turn off the box before the recording is complete you lose everything, we have had to record from the box before and after the lecture to make sure it is working correctly. For this course only 7 of 16 recordings are useable. Inf2a worked best. 18/24 lectures are good. Inf2c: 7 recordings were lost; there is an audio mix up. Students will take whatever they can get. IVR is a 9am class; I don't mind if students attend the lectures, I just want then to do as well as possible. Ideally, in the future we would just get a link to where the recording where stored, one link per course. Need to keep staff input minimal. If I don't spend a lot of time co-ordinating the Informatics recordings I am not sure who would. The support should be from IS. Need for good support and setup from the University. Next year I would prefer to use fixed kit rather than the portable kit to avoid the issues. We can't afford to have a technician there the whole time to make sure the kit is working ok. Setting up the kit every single time introduces human error. I don't know how students are using the recordings. Yes, I would record again.

Course 6
Teaching team: 3 lecturers
Teaching style / resources used: Slides, demonstrations, clickers, webCT, high level of Learning Technology skills
Year: 1

Lecturer: The lecture capture worked fine. I have to wear a microphone anyways so there is nothing different. It is an easy way to capture a lecture. I did not edit the recordings as the editing interface is awful. I am sceptical about the value in lecture capture but keen to try it out; there must be an educational purpose. I am making recordings available for revision. Some students with certain learner profiles may benefit from the recordings. Many students use audio recorders in my lectures. I see the potential use as the review of content, and of use to students who may not have English as a first language. My overall view is that the recordings will be incredibly valuable to some students but not all. I was happy with the support available. Problem for one lecture when we were moved out of a lecture theatre – it was chaos, we were told the wrong day; full demo kit had to be moved as well. Very difficult to deal with and used up valuable lecture time. There were also some problems accessing the videos (8080 problem). Yes, I would record lectures again.

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Course 7
Teaching team: 2 lecturers
Teaching style / resources used: Slides, webCT, clickers, demonstrations
Year: 2

Lecturer: I had some problems trying to edit the recordings. Once you make an edit, it takes 3 to 4 hours to process and after all that time it hadn't worked. No notification that it had or hadn't worked. Editing should be a straightforward procedure. The scheduling was fine. I have been using the enhanced podcast. I originally planned to make the recordings available for revision but I was off sick near the start of semester so I made my first lectures available to get students back up to speed, this worked well. I did not change the way I lecture. Adding links to webCT is very straightforward. The system should automatically top and tail the video. The opportunity to see yourself lecturing is valuable. Yes, I would record again.

4.3 College of Humanities and Social Sciences

Course 8
Teaching team: 2 lecturers
Teaching style / resources used: Slides, visualiser, groupwork, worked examples
Year: 1

Lecturer: Using the technology was fine. I made links to the recordings available on the course website. I have been using RSS feeds. I think lecture capture is a fantastic idea. In a previous role I recorded some webcasts for a course and they were very well received and I am still getting questions about the content three years later; these recordings were professionally produced. I recorded enhanced podcast. I made the recordings available asap. I had no technical problems at all. I read through the help info as I couldn't attend the training session. Yes, I would record my lectures again.

Course 9
Teaching team: 8 lecturers
Teaching style / resources used: Slides, handouts, interactive elements, videos, webCT
Year: 1

Lecturer A: No problems using the technology I simply have to add a link to webCT. I had some problems with the RSS feeds in webCT, which the lecture capture team sorted out. There was a fast response to support queries. We have one blind student who records the audio of lectures and her recordings were of a better quality than that of the Echo system. There was a reluctance from staff to being filmed, we taped audio and slides. I made the recordings available asap. I am not sure we will record again – it depends on the student reaction. The only extra effort for me was some clerical work (adding links)

Lecturer B: I just turned up and lectured; the links were added by the course organiser. I have mixed feelings about the idea of lecture capture. It could be a useful resource for students, for example those who are ill, etc. Some of my misgivings are due to being self conscious, going on record. I worry that if you make a mistake it is kept for ever. The information on the handout is the important bit. Will the recordings be portable? If someone makes a mistake, and it is misinterpreted it could be used as evidence. I am not sure I would record again.

Lecturer C: My lectures were not recorded due to interactive elements of my lectures. My main objection is that the capturing of lectures implies teaching is a one way process. Podcasts can be very useful but not appropriate for these lectures, which are highly interactive. It is a practical subject. Lecturer hands out partial lecture notes prior to the lecture and the students annotate them as the lecture progresses. There has been no noticeable drop in the number of students attending lectures since the handouts have been made available. There is one blind student and that was one of the main reasons why the lecturers signed up to try out lecture capture. Lecturer in favour of using all technology that can help students learn, but it is not appropriate in this case. Lecturing is not a one way process; it should be an interactive learning experience

Lecturer D: I was happy to be involved. I didn't have to do anything different – just turn up and lecture. I am not sure if lecture capture is a good idea. My concern being that students will not come to lectures. I have not reviewed my recordings. Yes, I would record lectures again.

Lecturer E: I forgot to turn my microphone on for one of my two lectures. It would have been helpful if there was a sign in the lecture theatre to remind me I was being recorded. I was happy to be recorded. Lecture capture would be a great way of capturing seminars particularly those that happen outside normal working hours when childcare can be an issue. I haven't reviewed my recordings. Yes, I would record lectures again.

Course 10
Teaching team: 2 lecturers
Teaching style / resources used: Traditional lecture, use of slides, tries to encourage interactivity with students, resources on webCT
Year: 2

Lecturer: I was keen to try out lecture capture to provide additional resources for our students. The nature of our course (lectures from weeks 1-11 and exam in week 12 or 13) means that students have a lot of information to take in over a short time period; I was a little self-conscious about being videoed. I recorded audio and slides only. I had a few problems getting the links into webCT as the process was new to me and I had a password problem that was solved quickly by the lecture capture support team. The level of support was very good. My colleague did not want to be recorded. A number of my colleagues are against lecture capture as they are worried about: loss of control of the recordings, and they fear that attendance will drop. Yes, I would definitely record my lectures again.

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Course 11
Teaching team: 2 lecturers
Teaching style / resources used: Slides, interactive discussions, webCT, handouts
Year: 1

Lecturer: I had some microphone problems, but that was sorted out. I was sent links to all the possible formats, it was hard for me to understand what all these different types are; I am not technical and I shouldn't have to be. I haven't edited the recordings but I am not happy with the recordings being distributed in their current state. There is a need for proper support if the University is serious about this initiative. I need help to add the links to webCT. Students requested the recordings for revision purposes. I am concerned that students will not attend lectures if they get the recordings. I think it is a good idea in principle, so that students can revisit topics and for those who have to miss a lecture. I received emails about training sessions but I do not have the time to attend. It is hard to know at this stage if lecture capture is of benefit. I am not sure if I would record my lectures again.

Appendix A: APS019 Lecture Capture Pilot Report

4.4 Emerging Themes 3

Feedback was gathered from sixteen staff representing eleven of the fifteen courses involved in the pilot.

- General reaction to the lecture capture was mainly positive with **eleven lecturers happy to record lectures again**, three lecturers were unsure if they would record again, and two would definitely not record their lectures (one giving the reason due to their lectures being too interactive to capture in a recording).
- Many **staff were interested in student reaction to lecture capture**; this is obviously the main driver for being involved in the pilot.
- **Many staff said being involved in the pilot worked fine for them**, with six saying that, "it worked fine, I just turned up and lectured as normal". Two lecturers were frustrated they had to stay in a restricted area of the lecture theatre to be recorded. One lecturer did think that a policy was needed on lecture capture at a School, College or University-level.
- **Support provided during the pilot was rated good**, with four staff commenting on "fast response to all support queries" from the lecture capture team or Bob Fisher who co-ordinated the Informatics recordings.
- Support was thought by one staff member to be correctly placed in IS, another lecturer did highlight the need for comprehensive support if lecture capture is rolled out across the University.

A number of staff reported technical problems:

- three lecturers said "**the wrong thing was recorded or key information was lost**", microphone problems may explain the lost or poor quality audio reported by two lecturers. The Echo 360 editing tool was thought to be inflexible with a poor interface by three lecturers.
- Problems with the portable kit caused problems for some. One lecturer wished the system could capture the blackboard - a vital resource for his students. One lecturer reported the system sometimes stopped recording slides and low resolution of the slides resulted in the slides not changing when expected. One course had problems with the RSS feed format, these issues were resolved by the support team.
- Two lecturers would prefer an **open system** to allow the use of cross-platform editing tools. The addition of a start/stop function to enable the lecturer (if required) to say when to start and end the recording was desirable by one lecturer.

General comments from the course teams were mixed.

- Five **staff were not sure of the benefit of recording lectures**. Two others thought the recordings would be useful to a small number of students.
- Five staff said it was "**simple to add the links to the VLE**". One lecturer was frustrated that editing and adding links to the VLE was to be done by the lecturer, saying "it is not my job to edit or add links to the recordings – I do not have a suitable level of technical knowledge to do this, and I shouldn't have to".
- Another lecturer noted that **the only additional work caused by the pilot was some additional clerical work**.

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- Two lecturers commented that the availability of recordings allowed them to **review their lecturing style**, which was valuable. One lecturer thought the video component was of no value. The data gathered from staff is useful but there are still many unanswered questions about the value of lecture capture.

5 Staff: General staff response to lecture capture

Each Director of Teaching or Director of Undergraduate / Postgraduate Teaching in each School was contacted to give a response from their School on lecture capture[9]. Some School representatives circulated a survey or a call for responses from their teaching staff, other staff responded on behalf of their School. The survey questions are shown in Section 8.4. The next three sections give the data gathered from the three Colleges of the University of Edinburgh.

5.1 College of Science and Engineering

Biological Sciences

Director of Teaching: "I can see some potential uses of the facility but staff here are very much opposed to making recordings available to students who might then be tempted to miss the lecture and depend on the recording, severely reducing the educational value of the lecture and its interactive aspects."

Chemistry:

Director of Teaching: Some staff may feel there are benefits to having their lectures recorded. The reasons why some staff may feel lecture capture is not of value to them: the more material we provide for students, the less they make use of the primary activities. A lecture is more than providing factual material, it is an interaction (albeit mainly passive on the students' side) with a person. I still remember the best and worst lectures from my own student days, and being motivated by the people giving them.

The reasons why some staff would like their lectures to be recorded: in my own case, lecturing on an important topic, but one which few have experience of, and retiring next year, recorded lectures might be of long-term value. Otherwise, recorded lectures, like on-line lecture notes or presentations, allow students to revise, catch up on lectures that they have missed, etc. Of course, the number that they miss will rise.

Is lecture capture a key service that should be provided by the University? It should not be to top of the list of priorities, but in some cases it may be valuable. It most certainly should not become a requirement.

[9] Staff were asked for comments on lecture capture but some of the responses may relate more to methods of making material available than methods of recording.

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Engineering and Electronics:

Question	Responses
Number of responses	11
Is there benefit to having lectures recorded?	Yes (6) No (2) Maybe (3)
Why lecture capture is not beneficial to staff or students	Concerns that attendance will drop (1) Lectures with a lot of interaction, the student will lose too much by using a recording (3) Could add additionally administrative burdens to staff (1) Concerns that recordings could end up on youtube and be hard to delete or recall if required (1)
Potential benefits for staff or students	Useful for students who do not have English as a first language (1) Additional resources for students (2) To save me having to deliver the lecture next year (1) Students could catch up on lectures they missed unavoidably (1) Useful for reinforcement and revision (1) Students find the recordings useful (1) Good for lecturers to review their lecturing style (1)
Is lecture capture a key service the University should be providing to students?	Yes (4) The automated service is great (1). Students may prefer to watch (re-watch) the lecture than plough through the notes (1). It must be clear this is not a uniform service for all courses (1). No (3) Student attendance at lectures is essential (1). It is important but not key.
Additional comments	Need to make sure it does not result in extra administration for staff (1) Need to be sure this does aid learning (1) Lectures are updated annually – the cost of annual repetition could be high (1) A wide camera angle would be beneficial, even though the quality of the recording may be adversely affected (1) Students should not rely on or expect all their lectures to be recorded (1)

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GeoSciences

Question	Responses
Number of responses	24
Is there benefit to having lectures recorded?	Yes (7) No (8) Maybe (8) Don't know (1)
Why lecture capture is not beneficial to staff or students	Concern that students won't attend lectures (7) Loss of staff / student interaction (6) Invasion of privacy for lecturer and concern about recordings ending up on youTube (3) Attending lectures improves student skills (3) Hard for lecturer to gauge if students are following the material (1) Need to keep material up to date – would be redundant fairly quickly (1) Revision is better served by use of notes and interactive participation in the lectures (1)
Potential benefits for staff or students	Would be useful to record seminars (1) Usefulness of lecture recordings has been mentioned at staff-student committees (1) Good for reinforcing content (10) We record audio would be good to add to this resource (1) Would increase access to my lectures (1) Useful to international students (2) Useful to students with disabilities (2) Good for students who have missed a lecture (1) Would free up time to spend on feedback (1) Allows opportunity to review my lecturing technique (1) I strongly support any attempt to make the lecture a more flexible thing (1)
Is lecture capture a key service the University should be providing to students?	Yes (4). Should be available through iTunesU (1) No (8). Shouldn't be mandatory (1). Not key (3). Development of podcast resources could be useful (1). If there are significant costs it should be a low priority (1) Maybe (3). Perhaps just available to students with disabilities, learning difficulties or special circumstances (1).
Additional comments	Usefulness of recordings depends on the level of instruction (2) Lecturers must retain editorial control (1) Usefulness depends on the context (1) Recordings should be available on iTunesU (1) Interaction of lectures must be retained (2) Students should come to the lectures (3) I would refuse to lecture under those conditions (1) Poor use of resources (1) Simple DIY method would be useful (1) Need for technical support for staff to prepare and deliver live content (1) Social bond of lectures will be lost (1)

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Informatics:

Director of Teaching: "Broadening and deepening capture of teaching and learning is part of our teaching strategy. We believe we should capture as much as possible (e.g. tutorials, I'd like to make visualisers available so students could make short video questions they can send to tutors for paper and pencil exercises, lecture recording is essential, ...). We also believe we should make material available by all possible channels, streaming, podcast, ... We also believe the material should be effectively indexed and made available to the student community to re-purpose for their learning. Echo 360 is a good start because it is indexed by slide transition and that is helpful. We have had some concerns over reliability but once those are ironed out it will be a good resource. We even had one student follow the course from the Canary Islands using the recordings. The other key aspect of the recordings is the way they make compliance to disability office adjustments automatic in many situations (provided the recording technology is reliable)."

Mathematics:

Director of Teaching: There are no perceived benefits to having lectures captured. In our view the standard of recording especially of maths lectures does not yet come up to the standard that we would require. This has been discussed at both of our Teaching committees, who have both rejected this idea. If of course you feel that our view is incorrect then perhaps you could arrange a demonstration to show what could be done for mathematics.

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Physics:

Question	Responses
Number of responses	8
Is there benefit to having lectures recorded?	Yes (2) No (2) Maybe (4)
Why lecture capture is not beneficial to staff or students	Not a replacement for lectures (2) Technology required to do this really well is very expensive (1) Sends out wrong message to students there is no added value from attending lectures (1) Suspect lecture recordings are of marginal use (1) Few students used the recordings (1) The majority of our students can attend lectures so recordings are of little benefit (1) Lecturer saw little evidence of the recordings being a useful revision tool or for reinforcement (1) Resources required to provide the recordings do not justify the investment (1) Lecturer does not want to be recorded (1) Only students can tell us if this is of value (2)
Potential benefits for staff or students	Student can review topics (1) Useful for students whose first language is not English (1) Good to allow lecturers to review their teaching (1) Good PR for the University if lecturers are available via iTunesU (1) Fast delivery of lecture recordings to the web (1) "Uptake of the recordings appears to be low, the people using the recordings are not the students who miss lectures they are the ones with special needs and diligent students that miss a lecture for unavoidable reasons, but these people are important" Of value but less than I expected (1) For three of my students the recordings were very useful (1) Would be beneficial to have large class lectures available on web in case of emergencies (1)
Is lecture capture a key service the University should be providing to students?	No (3). "Money should be invested in providing a robust VLE". "it's a marginal extra". "money would be better spent elsewhere"
Additional comments	"Some technical improvements are needed: wider camera angle and blackboard capture; the last VGA activity is kept for the next period of recording, which can result in a blank screen" "Useful to very few students (for example, those with learning issues)."

	"If it is going to be run as a service it should be done at a marginal cost" "The system had some very annoying features, development should have zero lecture involvement. " "Need for decent lighting – present lighting looks terrible in the recordings"

5.2 College of Humanities and Social Sciences

Arts, Culture and Environment: no response

Business and Economics:

Question	Responses
Number of responses	14
Role at the University	Lecturer (43%), lecturer and course leader (7%), senior lecturer (7%), teaching fellow (14%), professor (29%)
Is there benefit to having lectures recorded?	Yes (2 = 14%) No (9 = 64%) Maybe (1 = 7%) Don't know (2 = 14%)
Why lecture capture is not beneficial to staff or students	Loss of interaction between staff and students (9) Copyright and IPR concerns (4) Attendance will drop (3) Recordings could end up on youTube / concern about loss of control (3) Need for professional recording of content (2)
Potential benefits for staff or students	Recordings could be used for revision or additional support for learning (2) Useful for distance learning or marketing (1) Reusable as e-learning materials (1)
Is lecture capture a key service the University should be providing to students?	Yes (9%) No (55%) Maybe (36%) In some cases (1), capability should be there (1)
Additional comments	Good practice in helping students with disabilities and temporary difficulties (1) To be done properly would have massive implications for training and preparation, and I would expect the University would not put the resources into that (1) There is a real issue here regarding knowledge transfer (in terms of content, context and value) (1) This must not be done as University-wide policy, it should be at the discretion of academics in consultation with students (1) Where is this heading will the University become an online teaching institution? (1)

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Divinity: no response

Education: This School has an interest in this because we do a lot of distance teaching, or mixed distance and face-face teaching (many of our postgraduate students being school teachers). We probably can't help you with your imminent deadline, but if you would like to discuss possibilities of trying out lecture capture in this School, do get in touch with me again and I will try to take it forward. For example, I could identify colleagues here who would be enthusiastic about the idea. (My own role here is as School Director of Learning and Research Resources.)

Health in Social Sciences. *Director of Undergraduate Teaching*: This is interesting and we were not in the pilot, but then we area small subject area and do not use the rooms where the facility is currently located. We would be interested in the facility but given the difficulties around room booking is this likely to be a service offered in other locations? One response to the survey. A programme director who did feel there were benefits to recording lectures: "this with a need to re-listen could do so without having to individually record lectures. Lectures could be shared with visiting students once away from the university or if lecturers teach abroad too. It might help online teaching."

History, Classics and Archaeology: Reaction from School representatives: In terms of HCA teaching and learning goals we are interested in seminar capture. The reasons for this being: to develop the assessment of non-written skills, in response to many external suggestions to do so; a record of seminars would help us move forward with this innovation in assessment. We are also looking for ways to improve feedback in response to the National Student Survey. If we provided students with the opportunity to see a recording of a seminar this could prove a highly successful form of feedback. Presentation skills are important to students, particularly in terms of employability. We would therefore be enthusiastic about the exploration of seminar capture. In terms of lectures – we are not sure how to respond without knowing the scheme's goals.

Staff are concerned that the loss of interaction between staff and students at lectures is crucial to a successful learning/teaching experience. The NSS reminded us that we have problems related to community at the University. We encounter lots of student concerns about the distance between students and lectures, and we even hear anxieties about isolation and alienation. HCA is working hard to tackle these problems. If lecture capture discourages students from attending lectures that is likely to compound these problems. Lecture capture may be advantageous to teachability, but the current ways to tackle teachability are usually adequate. HCA has some practical concerns about the use of lecture capture. Recordings change the nature of a lecture, students can access them at any time, they can pause the recording, re-watch elements, etc. Lecturers do not design lectures with such issues in mind. It is not necessarily helpful for students to see a lecture as a resource that can be used in a different manner from that intended. Lectures foster student skills such as note-taking, identifying key points and writing them in a way that will be useful later. How extensive is student use of captured lectures? Attendance may drop. It seems to us that lecture capture provides students with the possibility of more intensive and less intensive use of lectures, but neither seems necessarily helpful for learning.

Law: no response

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Literatures, Languages and Cultures:

Question	*Responses (number in brackets is the number of times this reason was cited)*
Number of completed surveys	29
Role at the university	Lecturer (52%), senior lecturer (19%), lecturer and course organiser (10%), teaching assistant (5%), reader (5%), professor (10%)
Are there benefits to having your lectures recorded?	Yes (23%) No (54%) Maybe (18%) Might benefit some students (e.g. those with disabilities) (5%)
Reasons why lecture capture is not of value to staff or their students	Important for staff and students to interact (15) Students won't come to lectures (2) IPR and privacy issues (2) Students gain extra skills / knowledge from attending lectures (2) Concern about lecture content being used out of context (2) Staff not happy to be recorded (1) Quality of recordings (1)
Perceived benefits of lecture capture	For review or revision by students (2) Free up staff time (1) As an additional resource for students (1) Good for lectures with no interactivity (1) Recordings could be accessed by students on placement (1) Could be used by students who missed a lecture (1)
Is lecture capture a key service?	Yes (0%) No (76%) Maybe (14%) Not key but may be a useful resource (10%)

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Philosophy, Psychology and Language Sciences (PPLS):

Question	*Responses (number in brackets is the number of times this reason was cited)*
Number of completed surveys	57
Role at the university	lecturer (49%), senior lecturer (9%), lecturer and course organiser (9%), reader (5%), researcher (5%), professor (23%),
Are there benefits to having your lectures recorded?	Yes (12%) No (63%) Maybe (14%) Might benefit students with disabilities (10%) Limited release to certain students (2%)
Reasons why lecture capture is not of value to staff or their students	Important for staff and students to interact (19) Students won't come to lectures (14) IPR and privacy issues (9) Students gain extra skills / knowledge from attending lectures (8) Lectures change too often for recording to be useful (4) Concerns about who could access the recordings and for how long (3) Would stop students from exploring other learning resources (2) Concern about lecture content being used out of context (2) Staff not happy to be recorded (2) Cost of a lecture capture system (1) Students will rely on this resource being available (1) Other universities who have used lecture capture have seen a drop in attendance (1) Reduce educational quality (1) Impede spontaneity from the lecturer (1) Could cause staff redundancies (1) Loss of control of content (1)
Perceived benefits of lecture capture	Way of reviewing my teaching (1) Free up staff time (2) Use by students with disabilities (2) Students who do not speak good English (1) Students can view the lectures when they choose (1)
Is lecture capture a key service?	Yes (7%) No (91%) Maybe (2%)

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One lecturer in PPLS was worried the evaluation was not focussing on the right issues:

"Whether lecture capture is of value or not depends on one's relative position, and if ultimately the university (or students) decides lecture capture is of value from their point of view, it can outvote anybody else who argues against that view, even if the university (or students) is/are wrong to value lecture capture. Therefore the correct question to be asking is whether lecture capture is right or wrong, and to answer that question more information is needed.

Was the pilot project put through an ethics review panel? If so, which panel? Did the review panel raise any concerns about it and, if so, what concerns did they raise, and how were their concerns dealt with?

What ultimate purpose(s) does the university have in mind regarding lecture capture? If lectures are captured who retains the rights over their use - the individual lecturer, or the university? If the underlying reasons behind recording lectures are unsound or undeclared, or if the result of recording them could be detrimental to the irreplaceable interaction value of live lectures, or tramples on the privacy of staff or students who are 'captured' in the process, then to me recording of lectures becomes not just of no value, but actively detrimental (i.e. unethical) to all concerned, the students, the staff, and the university.

The lecturer gave permission for this extract to be included in this report. The author has included it as a good précis of some of the wider concerns surrounding lecture capture that cannot be easily investigated in a relatively broad brush evaluation.

Social and Political Science: no response

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5.3 College of Medicine and Veterinary Medicine

Medicine: "It's difficult for me to be sure how many lecturers would want to use this service but I certainly think we should introduce it as a pilot in the CMVM and let enthusiasts have a go while being supported by experts. I'm sure there will be lecturers in the Medicine programme who will be interested - probably in Teviot, the Chancellor's Building and the Western. Once others hear how easy (or not) it is to use and set up then I think we'd have more and more users. It would be particularly helpful in reducing the number of times a lecturer has to give the same lecture each year, due to the carousel nature of our programme. I don't expect it's possible to capture interactions and responses from the audience is it? Or can that be done as long as they hold a roving microphone?"

Veterinary Medicine: "Yes, we are very definitely interested. I did enquire about the potential for us using it but was informed that the pilot was only for CSE/HSS. I have a number of people here who have expressed an interest should it become possible for us to use it at Summerhall or EBVC"

Oral Health: I think this is something we would definitely be interested in. However, as our first undergraduate programme only commences this year, we will need to assess how things go in the early stages before developing the technological side of things. We are already developing this in our MSc programme. I think it would be something which would be very useful to BSc students and staff alike in the future, in that it would prevent repetition and maximise resources.

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5.4 Emerging themes 4

5.4.1 The College of Science and Engineering

Of the seven Schools in CSE feedback was gathered from four Directors of Teaching representing Biological Sciences, Chemistry, Informatics and Maths; survey data was gathered from the three remaining Schools: GeoSciences, Engineering, and Physics.

- The School of **Biological Sciences** DoT stated that **most staff are against lecture capture**, the reasons for this view being the concern that attendance will drop and the educational value of lectures may suffer.
- The **Maths** DoT **did not feel that lecture capture was beneficial**. Maths has had experience of lecture recording and they do not consider the standard of recording suitable for their needs.
- The School of **Chemistry's** DoT felt that **some staff may feel there are benefits to having lectures recorded**; those in favour of lecture capture may want to record lectures for their long-term value (for example, if a lecturer is retiring), and students could revise or catch-up on missed lectures. Again the concern that attendance will drop is a major concern, along with missing out on the interactive aspects of attending a lecture. None of these Schools consider lecture capture a key service.
- The DoT in **Informatics** was more **open to the idea of lecture capture**, saying: "we believe we should capture as much as possible... and should make material available by all possible channels, streaming, podcast." There was some concern over the reliability of the system used for the pilot but overall the Informatics DoT is positive.

Responses to the survey available to some Schools in CSE varied.

- There were twenty-three responses from **GeoSciences**, eleven responses from **Engineering and Electronics** and eight responses from **Physics**. The results of the survey gave interesting insights into general staff feeling about the idea of lecture capture. Common trends were apparent in the data from these three Schools, therefore the data will be considered as a whole. **Some staff thought lecture capture was beneficial** (34%), others did not (29%), and the rest were unsure (37%). **Reasons given for lecture recording not being beneficial were: attendance would drop, loss of interaction if lectures are not attended, the cost of lecture capture is not worth the cost, and invasion of privacy or loss of control of the recordings if for example they ended up on youTube**.
- Reasons cited of why lecture capture was potentially **beneficial were those cited by many students: to aid revision, to reinforce learning, and that the recordings were beneficial to certain students (for example, students with disabilities) but not all**. When asked if lecture capture should be a key service the respondents were split 50/50. It would appear that a **small number of staff in the College of Science and Engineering are interested in lecture capture, there is not overall support for a University-wide service**.

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5.4.2 The College of Humanities and Social Sciences

There are ten Schools in HSS; one School was unable to give feedback in the time available: Education; four Schools did not respond to the call for feedback: ACE, Divinity, Social and Political Science, and Law. Four Schools encouraged their staff to fill in the Survey. There was only one response from the School of Health in Social Sciences who said that there were potential benefits from the recording of lectures, particularly for staff and students away from the University. The School of History, Classics and Archaeology gathered responses from a number of staff in their School.

- There were twenty-nine responses from the School of **Literatures, Languages and Cultures**. More than half (57%) of staff did not think there were benefits to recording their lectures, 23% did think they were beneficial. Reasons why lecture capture was not of benefit were similar to responses raised in CSE: important for staff and students to interact, IPR and privacy issues, as well as lectures being used out of context, and the potential drop in attendance. There were a small number of perceived benefits of lecture capture: review and revision, and the possibility of freeing up staff time. **No staff considered lecture capture a key service**, with 76% saying it was not a key service.
- There were fifty-seven responses from the School of **Philosophy, Psychology and Language Sciences**. When asked if there were benefits to lecture capture staff (63%) were against the idea, 10% thought it might benefit students with disabilities, 12% were in favour of lecture capture. Reasons **why lecture capture is not of value were similar to those stated previously: the loss of interaction between staff and students, drop in attendance, IPR and privacy issues, and that students gain skills from attending lectures**. There were few perceived benefits from lecture capture, those mentioned were not new: ability to review my teaching style, free-up staff time, and the use by students whose first language is not English. **Staff in PPLS were overwhelmingly (91%) against lecture capture being rated a key service**.
- There were fourteen responses from the School of **Business and Economics** (SBE). Most (64%) SBE staff did not think there was benefit to having lectures recorded. The **reasons why lecture capture is not of value were similar to those given by other Schools in HSS: loss of interaction between staff and students, copyright and IPR concerns, attendance will drop, and concern the recordings could end up on youTube and impact negatively on the staff or the University**. Staff gave the following reasons of why lecture capture could be beneficial: use for revision or as additional support for learning, use as distance learning materials, marketing or as reusable e-learning materials. **The majority of staff (55%) did not consider lecture capture a "key service"** for the University. General comments on lecture capture highlighted concerns such as the level of training and support needed to provide an effective service would not be provided by the University.

- The School of **History, Classics and Archaeology** gave a response to the questions. Their response was that **they were interested in exploring seminar capture that could be used for assessment purposes and as a way to give feedback to students on key skills such as presentation skills**. Staff are concerned that the provision of lecture capture will reduce the interaction between staff and students, the School is working to reduce student isolation and alienation, lecture capture could exacerbate these problems. Many of the **School's general concerns about lecture capture are those raised by other Schools such as drop in attendance, and recordings not enhancing teaching and learning**.

The **response from HSS is overall quite negative towards the idea of lecture capture** at the University of Edinburgh. As was clear in CSE there are a number of enthusiasts but the majority appear to be concerned of the impact lecture capture would have on the courses, students and staff at the University.

5.4.3 The College of Medicine and Veterinary Medicine

The Course Directors of the three main undergraduate programmes in MVM were contacted for feedback on the idea of lecture capture.

- The leader of the **Veterinary Medicine** programme is **interested** and would be interested in further discussions about the possibility of lecture recording at Summerhall or EBVC.
- The leader of the **Oral Health** programme would also be **interested in lecture capture**. This is a new course and they need to get the course up and running before making any firm choices on technology such as lecture recordings.
- The leader of the **Undergraduate Medicine** programme is **unsure how many lecturers would be interested** in a lecture capture service but would be interested in a trial in MVM. Potential benefits could be a reduction in the number of times lecturers have to give the same lecture per year, due to the carousel nature of the programme.
- Overall **MVM is responsive to the idea of lecture capture, perhaps on a pilot basis**.

6 Support staff

A number of University support staff were interviewed, as well as staff involved in the pilot. The responses to questions are focussed around their areas of expertise; responses are anonymous to enable staff to speak freely; the letters A-F relate to comments made by staff who were interviewed.

6.1 Technical aspects

Lessons learned

A: Switching between the lecture theatres at Appleton Tower was not successful; fixed system much more reliable. Need to integrate lecture capture booking with the University room bookings system.

C: Technical issues stopped it running as was expected. The overspill system is not as robust as expected, ok for purpose but not for this new task. JCMB worked perfectly.

D: One box went down and we just needed someone to reset it – hard to do this remotely. Would be useful to have a better AV system for multiple projectors, possible to switch to one screen and forget to switch back, the system recorded a blank screen.

Service issues

A: We need to consider scalability issues: server load, network capacity, peak loads, classroom support from AVT. Need to make sure we have sufficient cover to support a University-wide service if that goes ahead; need to get involvement from IS e-learning team. Who edits the recordings if that is required? Scheduling events in Echo is time consuming.

B: Dissemination of recordings from the VLE may suit most users. Staff would be responsible for making the recordings available. We could potentially edit out chunks of content that were not copyright cleared. How long do we keep recordings? Who owns the recordings? What about copyright and IPR issues? Server space, how long do recordings remain available? Service for students: need to carefully select how and what we make available to make sure it is what students want, need to understand our students' world

C: If lecture capture service was put in everywhere the AV set up would allow it. Any theatres that have correct setup could be setup. Cameras are getting put in many lecture theatres as new installations. For the older lecture theatres it is a financial issue, and level of demand (e.g. if we have been asked to put it in). There could be potentially 25/30 places we could setup. AMX is the big control panel in lecture theatres; they could be fitted into smaller rooms. No need to put cameras (for overspill or streaming) into some of these smaller rooms. They already have a network PC – just need to upgrade.

E: Need to have a service that is easy to use. Recordings should be stored in a database that is searchable.

F: Many staff will only use if it is easy to use so they won't give up on it easily. Would be nice to have the recording capture available in smaller rooms that get used for seminars.

Scalability

C: Cost and time. A big cost is the time to setup the lecture theatres. To setup an Echo compatible room, it could be as little as 20 minutes per LT; to upgrade a room we need to get the contractors in, and time to order stuff. This could be 3/4 days each to install. AVT are trying to get rooms sorted in term time to stop the peak of activity in summer.

6.2 Support and other issues

General comments

B: Need for a range of activity in recordings from DIY to professional level, for example, the use of tools such as Audacity (free software) or Captivate may fulfil many users' needs. Recordings could be done in lecturer's office but would they be able to free up time to do this? Any system should be unobtrusive; the lecturer should lecture as usual. The link to the recordings should appear in the VLE. The cost of manual editing recordings could be huge; no easy way to automate editing. No firm view on whether College or School staff should be involved in support; the infrastructure should stay in IS. We should be providing some kind of service; public lectures could be recorded routinely. I fully support the capture of audio and slides, I am not convinced of the value of video content.

D: There are lots of areas this service could be used for example, School of Law are planning to run webcasts of guest lecturers, Informatics are interested in recording events.

Support

B: Needs to be inline with other IS services. One email and/or phone number to report problems. Booking lecture capture should be part of the existing room booking system from Estates and Buildings. Types of possible query: how you prepare for the best recording (some AV content and some pedagogical); what do you do with your lectures once they are recorded (TLA for pedagogical advice and IS e-learning team for more general usage issues); Recording problems (AV for in lecture issues; multimedia for processing issues); Editing (who would support this?); Training sessions (would need a joined up approach to cover pedagogical through to technical issues)

C: One person using the desktop microphone, when they walked away from the table, the audio disappeared. Many people don't use the tie clip microphone. Basic level for lecturers is just to get audio and on screen working. There is a phone number for AV on the desktop in the LT.

E: Many people think they need to be technical to produce podcasts, this is not always the case. Staff are put off by the editing process, and working out where to put the files.

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Concerns

B: Cost is the major problem; many other services are under-funded, we cannot fulfil every need. Not convinced that capturing videos is valid, just having the audio and slides may be sufficient for most users needs and the cost to capture audio and slides is considerably less than for rich-media

D: Insufficient resource to run a service. Need to have someone monitoring the system is working.

E: Cost of rolling out a service across the board is very high. If using audio and slide capture this can be done by many software packages, videos add substantial cost.

Further Investigation

A: Need to be able to setup when to release the recordings, you can hold them but they currently have to be released one-by-one. RSS feed formatting from Echo needs to be developed; links to each recording whether they are available or not. Perhaps look at how smaller lecture theatres could be kitted out to record just audio and slides, if no camera is present. Need to define the University position on iTunesU, and the best way to distribute the recordings. How do we sell the concept to lecturers?

6.3 Emerging Themes 5

Data gathered from support staff was mainly supportive of the idea of lecture capture, although the preferred form (podcast, enhanced podcast or rich-media) of the capture is debatable. Problems that occurred during the pilot were mostly unforeseeable, such as the problem of switching recording from one lecture theatre to another, similarly having to reset a box was an unknown problem. For lecture capture to become a University-wide service there are many areas that would need to be considered such as server load, peak loads, how to support any technical problems that may arise, and how to integrate booking the lecture recordings with room bookings. Installing the system into the lecture theatres would vary as the level of technical setup in each room varies depending on its use, and on how up to date the AV kit is. Many staff raised the cost of installing and supporting a lecture capture service as one of the main drawbacks to providing a service of this kind. The technical issues of a lecture capture service will be raised in a separate technical evaluation.

Support for pedagogical development and integration with existing e-learning developments is also a potentially difficult area to work out at this early stage. There was not a huge amount of data gathered from staff on this issue but this may be another area that needs further investigation.

7 Conclusions

7.1 General conclusions

The results of this evaluation of the lecture capture pilot at the University of Edinburgh are mixed but some key trends are apparent in the data gathered from students and staff. 147 students from the University gave their opinions on lecture capture by completing a survey, attending a focus group or contributing to a discussion board. The results of the survey give us our most robust data, with 124 responses from students in CSE (Physics and Informatics second year students) and HSS (Linguistics first year students). These students had access to the lecture recordings; 90% of the students considered lecture capture a good idea, although students' usage of the recordings was varied: 43% had watched a few of the recordings, 34% had watched none of the recordings, and 17% had watched most of them. We have no student usage data of the recordings to link what students *have* done to what they *say* they will do, but the recorded "intent to use" is encouraging and perhaps warrants further investigation. The **most popular reasons why students used the recordings were to reinforce learning or to catch up on a missed lecture**. Those **students who did not use the recordings said that they did not need to re-watch lectures, they preferred other study methods or they simply did not have time**. Most (60%) of the students who had watched the recordings found them useful.

Enhanced podcast (41%) was the most popular format, followed by rich-media (34%), then podcast (12%). It is recommended that the format and type of use of lecture recordings is investigated further. Most students (65% of Informatics and 55% of Linguistics) said they would download the recordings to their mobile device.

Data was gathered from staff involved in the pilot and from teaching staff from across the University. We will look first at data gathered from lecturers involved in the pilot. Sixteen staff were interviewed representing eleven of the sixteen courses involved in the pilot. Half of the staff are from CSE, the other half from HSS. **General reaction to the lecture capture experience was mainly positive**, eleven of the eighteen staff would record their lectures again. Most staff were keen to know the student reaction to the lecture recordings, providing additional student resources is the main driver for most of the staff to get involved in this pilot. The level of support provided was very good but **there were some technical problems that made the experience a little difficult for some of the staff**. After their involvement in the pilot five staff were not sure of the benefit of recording lectures, and two other staff thought the recordings were of value to a small number of students but not all.

The reaction of staff not involved in the pilot was different, with **many staff strongly against the idea of lecture capture, although some staff are supportive of lecture capture**. Feedback was gathered from all three Colleges at the University, an overview of the responses is shown in section 5.4. In the College of Science and Engineering, responses were given by all seven Schools. Responses varied: three Schools were mostly against lecture capture, one School was very supportive, and the remaining three Schools gave mixed responses with some staff for and some against lecture capture.

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Common concerns of CSE staff are: concern attendance will drop, IPR and privacy issues including what would happen if a clip ended up on youTube resulting in bad publicity for the lecturer or University, and the loss of the interactive elements of attending a lecture. Some staff could think of potential benefits that included: reinforcement of learning, and the benefit to some students (for example, students with disabilities).

The responses from HSS are similar to that of CSE. Data on each School who responded to the call from information is shown in section 5.4.2. Not all Schools responded to the call for information. One School was interested in lecture capture, another School was interested in seminar capture specifically; three other Schools were mostly against lecture capture but all had some staff interested in finding out more about lecture capture. As was seen in CSE the reasons why lecture capture is not beneficial are: loss of interaction, drop in attendance and concern about IPR and privacy as well as loss of control of the recordings. The **response from HSS is overall quite negative but there are groups of enthusiasts in most Schools who are keen to try out lecture capture**.

In the College of Medicine and Veterinary Medicine the organisers of the three largest undergraduate programmes were asked to give feedback on lecture capture. Of the three programmes: Oral Health, Medicine and Veterinary Medicine all are receptive to the idea of investigating lecture capture for their programmes, perhaps on a pilot basis.

Support staff involved in the lecture capture pilot were interviewed to identify areas that might need to be investigated if lecture capture was to become a University-wide service. Problems that occurred during the pilot were mostly unforeseeable (for example, the problem of switching between lecture theatres). For lecture capture to become a service there are many areas that would require further investigation such as server load, peak loads, how to support technical problems, how to integrate booking lecture capture with the room bookings procedure at the University. Many support staff raised the cost of a lecture capture system as the main drawback to providing a service of this kind. Support for pedagogical development and integration with existing e-learning systems is also a potentially difficult area that should be investigated further.

This report has attempted to give an overview of all the feedback gathered from students, lecturing staff and support staff. **Many students say they would value a lecture capture service; the reaction of staff is mixed**; many staff think there are more important places to focus resources in the current economic climate, while others are strongly opposed to the idea of lecture capture and they worry that the provision of such a service will have a negative impact on their courses and students. **There are however many enthusiasts who are keen to continue or try out lecture capture.**

7.2 Areas that require further investigation

7.2.1 Is video an essential part of lecture capture?

Need to investigate the importance of video to user of lecture recordings.

7.2.2 What kind of support is required by lecture capture users?

Need to investigate what kind of support is required by lecture capture users. This would include both staff (lecturing and support), and students.

7.2.3 Need to investigate the rights or control over the rights (IPR and copyright) to the materials

Need to communicate the University's position on the rights and control of the rights of any material that is generated by lecture capture, staff need to have a clear understanding of what their rights are with regard to lecture capture.

7.2.4 Dissemination methods

Need to investigate dissemination methods (such as whether recordings should be disseminated via iTunesU, webCT or other methods). Should access be restricted to Edinburgh University or world wide?

7.2.5 Broader issues

Need to investigate some of the broader issues around lecture capture such as ethics, appropriate usage and data protection.

Appendix A: APS019 Lecture Capture Pilot Report

8 APPENDICES:

8.1 A - Feedback gathered

Course / year	*Was feedback collected?*	*What recordings were made available?*	*When were recordings available?*	*Comments*
Advanced Vision / CSE	Staff – Yes Students – No	Unknown	Unknown	Some technical problems with portable kit
Chemistry 1A / Year 1 / CSE	Staff – Yes Students – No	Unknown	Unknown	
Computing for Engineering / Year 2 / CSE	Staff – Yes Students – No	Everything	Asap	
Informatics 2A / Year 2 / CSE	Staff – No Students – Yes (survey)	Everything	Asap	
Informatics 2C / Year 2 / CSE	Staff – Yes Students – Yes (survey)	Everything	Asap	
IVR / Year 3 / CSE	Staff – Yes Students – Yes (survey)	Everything	Asap	Some technical problems with portable kit
Legal Reasoning / Year One / HSS	Staff – Yes Students – Yes (discussion board)	Enhanced podcast	Asap	
Linguistics 1A / Year 1 / HSS	Staff – Yes Students – Yes (survey)	Enhanced podcast	Asap	A few of the recordings were incomplete
Organisation Studies / Year 1 / HSS	Staff – No Students – No	Enhanced podcast	For revision	
Physics 1A / Year 1 / CSE	Staff – Yes Students – Yes (Focus groups)	Everything	For revision period	Some students reported access problems
Physics 2A / Year 2 / CSE	Staff – Yes Students – Yes (survey)	Everything	Originally planned to be available for revision only, but due to staff illness recordings were made available as soon as possible	
Principles of Finance / Year 1 / HSS	Staff – No Students - No	Unknown	Unknown	
Informatics Research Methods / MSc / CSE	Staff – Yes Students – Focus group	Unknown	Asap	Some technical problems with portable kit
Social Policy / Year 1 / HSS	Staff – Yes Students – Yes (focus groups)	Streaming version only. Everything available.	3 weeks before revision	
Text Technologies / Year 4 or MSc / CSE	Staff – No Students – No	Unknown	Unknown	Using the Informatics portable kit

Table 10: Data gathered from each course

Appendix A: APS019 Lecture Capture Pilot Report

8.2 B - Student survey questions

Q1. Which module using the lecture capture pilot are you studying?

Q2. How many of the recordings have you viewed?

Q2a. What are your reasons for that choice?

Q3. Did you find them useful?
- Yes
- No
- Don't know
- No response – I didn't use them

Q3a. Please tell us why.

Q4. Did you have any problems using the lecture capture recordings?
- I had no problems at all
- Problems viewing in webCT
- Bandwidth / playback speed problems
- No recordings available
- Other (please specify)

Q5. How would you rate your computer proficiency?
- Excellent
- Good
- Fair
- Poor

Q6. Do you have a mobile playback device (e.g. an iPod)?
- Yes
- No

Q7. If your lectures were recorded and freely available (for example, by webCT or iTunesU) would you download them and use them on your mobile playback device?
- Yes
- No
- Don't know

Q8. What would be the most useful format for you?
- Podcast (audio only)
- Enhanced podcast (audio with slides)
- Rich-media (video, audio and slides)
- Don't know

Q9. Do you think lecture capture is a good idea?
- Yes
- No
- Don't know

Q9a. Please tell us the reasons why

Appendix A: APS019 Lecture Capture Pilot Report

8.3 C - Student focus group questions

Q1. How many hours a week do you spend on self-study? Do you think you spend enough time studying?

Q2. How do you study?

Q3. How do you feel about the use of learning technology in your courses?

Q4. If your lectures were recorded would you use them?

Q5. Is lecture capture of benefit?

Q6. What format would you prefer? How should the recordings be made available to you?

Q7. Have you experienced any problems accessing or using learning resources at the University of Edinburgh?

Q8. Please prioritise the following resources that may be available as part of your course. You can add any other resources you feel are useful.

Lecture capture
More thorough and timely feedback
Course notes
Worked examples
More time with teaching staff
Tutorial groups
Interactive Teaching Studio
Subject newspapers / websites
Podcasts
Clickers
Journal articles
Online self-test
Blogs / wikis
Peer groupwork
Specialist software

Appendix A: APS019 Lecture Capture Pilot Report

8.4 D - Teaching staff questions

Staff involved in the pilot were asked the following questions:

Q1. Team Dynamics of the course

Q2. What are you trying to achieve educationally with this course?

Q3. Style of teaching

Q4. How did you find using the lecturecapture teachnology?

Q5. Why did you get involved in this pilot?

Q6. What have you been recording?

Q7. How and when are you going to use the recordings?

Q8. Did you change the way you lectured? Did the use of the recordings change the way you taught your course?

Q9. What sort of help and support has been available? Are you happy with the support you received?

Q10. Would you record your lectures again if you had the chance?

Q11. Any additional comments on being part of the pilot.

Staff not involved in the pilot were asked the following questions[10]:

Q1. What is your role at the University?

Q2. Should your lectures be recorded and made available to your students?

Q3. If you would not like your lectures to be recorded, please tell us why

Q4. If you would like your lectures to be recorded, please tell us why

Q5. Is lecture capture a key service the University should be providing to students?

Q6. Do you have any other comments about lecture capture?

[10] Note: this is a revised set of questions after staff feedback from the School of Philosophy, Psychology and Language Sciences suggested the original questions were leading.

Appendix A: APS019 Lecture Capture Pilot Report

8.5 E - Support staff questions

Q1. Are you currently involved in the lecture capture pilot?

Q2. What is your role?

Q3. What other teams are you interacting with?

Q4. How is that working?

Q5. If lecture capture recording became a mainstream University service how do you think that would work? For e.g. who should support lecturers? How much processing should be done automatically? Where should the recordings be available (webCT with EASE authentication or freely available on iTunes)?

Q6. Can you foresee any scalability issues?

Q7. Can you foresee any undefined areas for the support team?

Q8. Do you have any further comments on the concept of recording lectures at the University?

Appendix B: APS019 Lecture Capture Pilot Report

APS019 Lecture Capture Technical Evaluation

Purpose of Evaluation

This report contains information about the lecture capture software from Echo360 that was used to run a pilot service at the University of Edinburgh during 2008/09. The stated aims of the associated project, APS019, were "to establish how lecture capture software generally could be fully implemented at The University of Edinburgh and to clarify the scale and requirements of any implementation with particular focus on pedagogical suitability."

This report focuses on the technical aspects of installing and administering the lecture capture software.

Supplier

Supplier Information

Echo360 Inc was selected as the software supplier for the lecture capture pilot project. This company was established following the acquisition of Lectopia by Anystream Apreso in 2007. The corporate headquarters are at the address below:

21000 Atlantic Boulevard
6th Floor
Dulles, Virginia 20166
tel: 1.703.667.7500
fax: 1.703.450.1936

The web site indicates a large customer base in the Higher Education sector in the USA and across the world. The dedicated UK presence is a sales office with technical support being provided from the US (see *Supplier Support* below). A full list of the customers can be found at the link below.

http://www.echo360.com/customers/

Software

The software used during the project was the EchoSystem, the primary product from Echo360. The software enables the automatic scheduling, capturing, packaging and publishing of lectures at fixed and ad-hoc locations across the campus.

Appendix B: APS019 Lecture Capture Pilot Report

Supplier Support

Support is provided via online requests or by calling the support desk. Support hours are Monday – Friday between 8AM – 8PM Eastern Time (ET) excluding Echo360 holidays.

However, during the project, the main communication channel for support was via emails from the project manager to named individuals in Echo360.

Supplier Documentation

We were not given a complete set of documentation nor a master index of the documentation set at the start of project. We only became aware of its existence via references to it in the material we were given. This slowed the learning process, However, the documentation was of good quality – clear, concise and factually correct. For example, the instructions to upgrade to a new version of the software went smoothly following the instructions. This was a full update of the software. Including updates for the server, capture devices and media processors.

The information about the product on the web site improved during the course of the project, perhaps an indicator of an evolving rather than a fully mature product. There is also a growing online knowledge base at :

http://na6.salesforce.com/sol/public/search.jsp?orgId=00D30000000762G

Alternative Suppliers

No alternative suppliers were evaluated during the project but a number of companies offer similar products with a range of different features.

Costs

Type of cost	Amount	Annual charge?
Software costs:	£9500	Yes
Hardware costs:	£4200	No
Consultancy:	£1250	No
TOTAL:	**£14,950**	**£9,500**

Appendix B: APS019 Lecture Capture Pilot Report

Infrastructure

Operating System

All the major software components were installed on the Windows platform:

- Echo Server
- Media Processors
- Wowza Media Server

Please see the TAD for more detailed information about the hardware platform.

A member of the Echo360 staff came onsite to do the initial installation, with UoE staff in attendance and the service was up and running the same day.

Some key points related to the operating system are:

- The software installed cleanly first time
- There are no known issues related to the operating system e.g. we did not have to apply an o/s patches to get the software to run
- the components can all be started and stopped as a normal windows service and are easy to administer
- the software also runs on the unix platform, but we did not test this.

Storage

The Broome server was configured with 1TB of SAN storage. At the time of writing there are currently 492 available echoes. Assuming each echo is 55 minutes long this works out to be 451 hours worth of captured content to date (includes both semesters 1 and 2). Consequently this works out to be ~300GB worth of content.

The Echo360 deployment guide offers this advice on storage requirements

> Your actual storage requirements will depend on the expected volume of lecture captures, the type of captures, and how long you plan to keep the presentations available before they are archived or deleted from the server.
>
> Many factors affect the size of the files output by the capture station. You can reasonably expect a podcast or enhanced podcast file to be 100 MB per hour. A full Echo rich media recording can be as much as 650 MB per hour.

Appendix B: APS019 Lecture Capture Pilot Report

For future reference this article has information about storage requirements when working with an external media server, including the extract below:

> ***Co-locating the Flash Content***
> *In order for the Wowza server to find and stream Flash content, that content needs to be stored in a drive letter-addressable (i.e., logically local) location either physically attached to your FCS or on the network as a SAN volume. We do not recommend storing the content on a location that is logically remote to the Wowza server, such as a NAS or UNC-addressable location, since this will generate unnecessary network traffic that could be detrimental to the performance of the streaming server.*
>
> *The ESS will need to transfer the Flash content over the network to the location you have chosen for the content storage. This requires that we make this location accessible via a network share. If you are using a common SAN volume for all of your content, you can skip the following steps, making sure that the Flash Folder parameter under the streaming settings heading of your ESS system settings page matches the location you want your Wowza server to be using.*

Database

The Apache Derby database that came bundled with the software was used throughout the project. This database is used to store information about the content and configuration of the system. There were no issues with this throughout the project and it integrated seamlessly with the other components.

For scalability, Echo360 recommend using an external database if the deployment will exceed 15 capture devices. An external database would also be desirable if another user interface, such as a reporting tool, was required.

The supported external databases are:

- MySQL Enterprise Server
- PostgreSQL 8.x Server

The use of an external database was not tested during the project. Note also that there is currently no supported migration path from the internal to the external database.

Application Server

The EchoSystem Server (ESS) is the central hub of the application and handles:

- interaction with the capture devices
- content creation and storage management
- publishing links to content to Course Management Systems
- uploading content to the iTunes U portal

- content playback via a Flash Media Server

The EchoSystem Processor: (a.k.a. media processor handles requests from the EchoSystem Server to process captured content and create playback content in the desired format.

The ESS was run on the Windows platform throughout the project. The other supported platforms are Linux and Mac OS X, but note that the Media Processors only run on Windows.

The ESS runs as a normal Windows service and is configured via web interface. The ESS server was very stable and performant during the project i.e. not prone to intermittent crashing, hanging or performance issues.

Web Server

The Jetty Web Server that came bundled with the software was used to serve content at the beginning of the project. Later, to support EASE authentication, requests were redirected from Jetty to IIS.

Networking

The EchoSystem is described as “as network-centric solution that requires certain networking capacities”. These include:

• DNS	Domain Name System
• DHCP	Dynamic Host Configuration Protocol
• SFTP	Secure File Transfer Protocol
• HTTP / S	Hyper-Text Transfer Protocol (Secure)
• NTP	Network Time Protocol
• SMTP	Simple Mail Transfer Protocol
• RTMP	Real Time Messaging Protocol

The networking requirements defined in the documentation were accurate and enabled us to set up this aspect of the infrastructure with no real issues.

Integration

The ESS can communicate that content is available for playback by publishing to supported Course Management Systems, including Blackboard, the iTunes U Portal and RSS feeds. Additionally, there is an open API to enable integration with other web portals.

Appendix B: APS019 Lecture Capture Pilot Report

An investigation was carried out to determine the work required to enable the EchoSystem to communicate with downstream publishers but these links were not tested during the project by the Development Technology team. Any future work in this area needs to consider the authorization requirements regarding access to the content.

Security

EASE Authentication

An IIS web server was configured to enforce EASE authentication to the content,

The EchoSystem server also has the ability to integrate with an LDAP authentication server. The LDAP authentication method has been certified by Echo360 with Microsoft Active Directory and with OpenLDAP Authentication servers. This was not tested during the project.

Authorization

The Echosystem does not currently have an in-built security model related to authentication and authorisation to control access to the content

The next version of the software promises a “new authentication framework” using cookie-based authentication (ModCosign). It is unclear if this will also include authorisation features such as role-based access to individual presentations. It may be necessary to develop an in-house solution to handle an authorization scenario such as “only authenticated students who are currently enrolled on course X may view this presentation for the next 10 weeks” . It is possible could be delivered as part of the IDMS replacement, FM Group System or via integration with an existing system such as WebCT.

Performance

sections for performance-related topics

- general performance notes
- scalability
- load testing performed

Appendix B: APS019 Lecture Capture Pilot Report

General Performance

Overall, the service ran without any significant issues related to the performance of the ESS, media processors and the internal Wowza media server. However, the day to day support for the service for presenters and end users was handled by the Service Management section. So their input is required as to the overall performance of the software.

Scalability

The software was installed in a single server configuration. The ESS and media processor were installed on Broome, with the database, web server, streaming server and secure FTP server embedded in the ESS. This configuration is only suitable for one or two lecture captures per hour.

For scalability, the ESS, media processors, streaming server and database can run on separate servers.

During the project, an additional media processor was configured to run on the daintree server. The installation of this was relatively straightforward and the ESS handled simulated breakdowns of one or more of the media processors.

We also tried to use an external Wowza media processor running on MAC OS X on the Reith server. However, we encountered issues with the ESS accessing the Samba share on the external server and are still trying to overcome the issue at the time of writing e.g. Create an anonymous, public samba share and restrict access to it by IP address in the samba configuration. This article may also have useful information

An external database is recommended if the configuration exceeds 15 capture devices. The use of an external database was not tested during the project.

Load testing

Only a limited amount of load testing has been done to date. The main areas where the system may come under stress are:

High Number of Lecture Captures

A secondary media processor was added to the configuration to increase the capacity to process incoming lecture captures. This installed cleanly and the ESS server was able to handle simulated crashes of the two media processors. Note that the additional media processors run on separate physical servers.

High Demand on ESS Server

Appendix B: APS019 Lecture Capture Pilot Report

The current understanding is that the EchoSystem can only run in a single active ESS server configuration i.e. you cannot have multiple active ESS servers fronted by a load balancer. Therefore, the ESS server processing capacity is related to the processing power of the physical server.

High User Demand for Flash Content

A load test was performed using the Wowza load testing tool and the Windows performance monitor. A target of 300 concurrent streams was defined as the baseline for typical student peak usage. The results from the Wowza tool showed that the server was able to serve content without lagging behind whilst the Windows performance tool showed that the server performed within acceptable performance levels on all the main server metrics i.e. CPU, memory and disk I/O for the duration of the test.

Note: The flash content still resides on the SAN storage of broome hence the load test was done against broome. The initial plan was to store all flash content on the streaming service but a solution was not available in time.

High User Demand for Non-Flash Content

Note: There was not a suitable load testing tool available to specifically test non-flash content so although designed to load test flash content the Wowza load testing tool was used. To this end the results below may not be entirely valid and should be taken with caution.

A load test was performed using the Wowza load testing tool and the Windows performance monitoring tool. As with the flash content load test a target of 300 concurrent sessions was defined as the baseline for typical student peak usage. The results from the test appear to show that the server was able to serve the content without lagging behind whilst still performing within the acceptable server performance levels.

Appendix B: APS019 Lecture Capture Pilot Report

Summary and Recommendations

Overall, the Echo360 software performed well from an administrative perspective. Generally, the software installed, upgraded and ran cleanly with few operational issues. The availability and quality of the documentation improved during the project and support questions were handled in a reasonable time and with satisfactory answers.

More work is required to define the business requirements in the areas of:

- authorization,
- integration with course management systems and other downstream application
- capacity / demand – impact on number of servers and storage
- working with an external media server
- duration of content availability / archiving – impact on storage requirements

Appendix C: APS019 Lecture Capture Pilot Report

Sample costs for upgrading learning spaces for lecture capture

Example 1 / Full Spec Lecture Theatre / Appleton Tower LT1

AMX Control System: Yes
Electronic Writing Surface: Yes
CV Camera: Yes
CV to back: Yes
PA with Radio Mic: Yes
Network: 6 Points

Needed: None
Cost: £0.00

Example 2 / Semi-Full Spec Lecture Theatre / Hugh Robson LT

AMX Control System: Yes
Electronic Writing Surface: Yes
CV Camera: No
CV to back: Yes, in use
PA with Radio Mic: Yes
Network: 6 Points

Needed: VGA Scaler, CV Camera
Cost: Approx £2000

Example 3 / Low-Spec Lecture Theatre / Faculty of Law 175

AMX Control System: Yes
Electronic Writing Surface: No
CV Camera: No
CV to back: Yes, in use
PA with Radio Mic: Yes
Network: 2 Points

Needed: VGA Scaler, CV Camera, Electronic Writing Surface, Extra Network
Cost: Approx £5,000

Example 4 / Standard Seminar Room / Appleton Tower 2.06

AMX Control System: Yes
Electronic Writing Surface: N/A (cabinet too small)
CV Camera: No
CV to back: Yes, in use
PA with Radio Mic: No
Network: 2 Points

Needed: VGA Scaler, CV Camera, Extra Network
Cost: Approx £2,300

Appendix D: APS019 Lecture Capture Pilot Report

Student opinion on their lectures at University of Edinburgh

EUSA have a website where students express their opinion on courses, including lectures: http://www.eusa.ed.ac.uk/reviewer. A brief review of comments on 3 first year courses is given below. While this is not a complete and comprehensive survey and it is possible students with negative experiences may be more likely to comment, it did appear to me that most comments were generally balanced highlighting what were felt to be both the positive and the negative aspects of the courses. The comments suggest that students appreciate the enthusiasm of their lecturers but their styles vary considerably :

Course 1 (HSS)

“The lecturers were varies in their styles and how engaging they were”
“I hardly did any lecture readings, but I don't feel like I missed out too much because I attended nearly all lectures, which i would say are compulsory if you want a good mark”
“Taking this course has been the greatest regret of my life. Incomprehensible lectures.”
“The course has quite a lot of interesting lectures, however the lectures vary wildly according to the lecturer”
“Most of them were very interesting and their lectures were well organised”
“All the lecturers are enthusiastic however, and you can tell they at least are enjoying all they say.”
“The lecturers may have helped with this (fast pace of the topic); although there are one or two that are difficult to follow, or simply dull, the large majority bring their passion to their area of expertise and aren't afraid to use power points or short video clips to express it.“
“Most of the lecturers are easy to listen to and follow, some more than others.”

Course 2 (CSE)

“The lecture style is fairly heavy and turgid and you really have to focus on what's going on during the lectures. Occasions where you find yourself drifting off and falling asleep can become frequent if you fall behind... hence why the lecture attendence dropped from about about 50 at the start of the semester to nearer 5 by the end! “

Course 3 (CSE)

“The lectures are interesting and done by people interested and experts in their own subject; there were 6 different lecturers I think. The teaching is good and interesting if you like the topic.”
“The lectures were fairly engaging particularly in comparison with my other subjects. “
“The lecturers were fairly good in general, with most of them clearly interested and excited by their subject. Usefully, many of the lectures are put up in full on the website, allowing you to catch up if you miss one for any reason...”
“Some of the lectures went straight over my head, being very maths or science based, but I have found that this is more for general knowledge than anything else, and a lot of the more complex stuff is not needed for exams.”