Making the Most of Lectures with EchoSystem
Staff Guide

EchoSystem is one of the technologies available through the University’s virtual learning environment to support students in their learning. These guidelines are based on the results of a national study on the impact of web-based lecture technologies such as EchoSystem on learning and teaching. They have been developed to explore some of the issues emerging from the study, including:

- Lecturers use of the technologies
- How and why students use the technologies
- Making the most effective use of the technologies
- Structuring an integrated learning environment
- Optimising learning with lecture recordings
- The lecturing process

EchoSystem

EchoSystem is an automated recording system for digitally capturing face-to-face lectures for web delivery in close to real time. This service is free to all University of Newcastle staff.

Complete the online booking form to request an EchoSystem recording in an EchoSystem enabled venue.

Once you have completed the online booking form to have your lectures recorded using EchoSystem, your lecture will be automatically recorded in the specified room. Recordings start automatically from 5 minutes past the hour and finishes 5 minutes to the hour.

Your recordings are delivered via the Blackboard course site nominated during the booking process. The recordings will be available almost immediately after the lecture finishes.

Students can access the recording by:

- streaming through their computer; or
- downloading to their computer or mobile devices (mp3, iPod)

Why do lecturers record lectures?

There are numerous reasons why staff record lectures. The most common reasons are:

- to support external students by giving them more timely access to lecture content as well as the course updates, feedback, anecdotes and other spontaneous communications that occur in lectures
- to support students who can’t come to class due to a variety of reasons – family and work commitments, sickness, timetabling clashes, transport difficulties
• to provide an additional learning resource for all students and especially to those with disabilities, learning difficulties, cultural and language differences.

• In some cases a Departmental decision or pressure from students to provide lecture recordings has been the impetus for its use. While there may be cogent reasons for this action, the outcome is not always satisfactory. Where staff are free to make their own judgements and decisions, their experience of using the technology is usually far more positive.

**What are students’ experiences?**

Students who use lecture recordings tend to be positive about the experience; they perceive it supports their learning and helps them to achieve better results. Overall their reasons for using lecture recordings largely mirror those that influence staff:

• **as a safety net** – when they can’t attend on a regular or one-off basis

• **for learning** – it is a study tool that helps them to take comprehensive notes, to revise for exams, and to pick up things they missed in class

• **flexibility and convenience** - with widened access and increasing cost to higher education, a large proportion of students have work and family commitments when they begin university. They require flexibility to fit study in with their busy lives and actively make choices about attendance. In some cases, the need for flexibility can also arise from the demands of the curriculum where they need to fulfil work experience requirements or participate in practicum off-campus.

However, there is one important difference between staff and students’ perception of lecture recordings. The findings from the study revealed that while a large number of students using lecture recordings perceive they learn just as well from listening to the recordings as they do from attending face-to-face lectures, staff do not perceive this to be the case.

Having said that, using lecture recordings does not necessarily exclude lecture attendance.

Findings from the study also showed that lecture attendance is still popular with many students because they:

• find lectures motivating
• value contact with lecturers and peers
• find the visual aids helpful.

Some students choose to attend lectures then listen to recordings to supplement their learning by:

• revising for exams
• revisiting complex ideas and concepts
• working at their own pace and place of convenience
• picking up on things that they missed in class
• going back and take comprehensive notes after the lecture so they can concentrate on what is happening in the lecture
• checking what was said before approaching their lecturer for clarification of issues, ideas or misunderstandings

Lectures: to attend or not to attend?

For students, the choice of whether to attend lectures or not is influenced by a range of factors.

Apart from the need for flexible access there are three other broadly–based factors that will influence students’ decisions:

Educational
• to pick up on copyright materials, video, annotations on slides or other multimedia materials which cannot be made available on lecture recordings.
• to participate in problem solving activities in small groups, discussions or other interactions that are difficult to capture on lecture recordings.
• to interact / communicate with the lecturer
• to ensure they have the materials/content needed for a follow-on tutorial, practical session or similar.

Convenience
• to establish a routine for study through the regular lecture timeslot - some students find they don’t get around to listening when they don’t have an established routine.

Social
• to meet up with others in their course, exchange ideas and make new friendships – generally more important for younger students.

Making the most effective use of lecture recordings

Introducing any new technology into a well-established practice will change the dynamics of teaching and learning: the relationship between elements in the curriculum, the way you teach, the way students learn, the way you communicate and gain feedback from your students. In short, to make the most of a new technology including EchoSystem you need to take a whole of curriculum perspective.

Curriculum alignment

If we interpret the ‘curriculum’ in its broadest sense then we need to think about:

• the content - or what is sometimes referred to as the syllabus
• the teaching and learning activities - lectures, tutorials, etc organised by staff as well as the activities that students do in their own time either individually or in groups
• the assessment and feedback provided.

Each of these elements is interrelated. The organising principle to ensure effective interrelationships is ‘curriculum alignment’.
As described by John Biggs in his book ‘Teaching for Quality Learning at University’ (2003) alignment involves two systems: the teaching system, which is what the teacher constructs and the learning system which is how the student reacts. When these two systems interact, they form their own system which, in turn, becomes part of the wider institutional system (Biggs, 2003). In an aligned system, there is compatibility between the learning outcomes, the learning activities and the assessment and feedback strategies around student achievement.

**Blending internal and external delivery modes**

The flexibility in access brought about by lecture recordings and other communication and social technologies has meant that delivering the curriculum is no longer confined to designing for either internal or internal external delivery modes – it is a matter of designing for a blend of both.

Online technologies allow external students an experience that more closely resembles that of internal students. The advantages of lecture recordings for this cohort of students are largely undisputed by staff.

The flip side is that these same technologies have allowed internal students to adopt the study habits and behaviours of externals. This is challenging a long held expectation that internal students will be based on-campus, attending lectures and other activities.

If lecture recordings are made available to students then many will use it. Some will continue to come to lectures, some will choose not to come, and others will come to lectures as well as use recordings to support their learning.

Having to cater for this full range of attendance patterns and delivery modes adds complexity to the design of the curriculum. However, if all options are not factored into designs from the outset, the outcomes will be unsatisfactory for all and can lead to a range of problems including:

- students falling behind
- students missing out content/incidentals/discussions
- lack of continuity between lectures and follow-on tutorials
- poor communication between staff and students
- lack of spontaneous interaction and feedback.

**One size does not fit all**

Making lecture recordings available to your students is not a decision that should be made lightly. Each program or unit has its own unique context arising from:

- the nature of the discipline, the content, the experiences and learning experiences
- student characteristics - enrolment modes, needs and expectations
- logistical arrangements - class sizes, timetabling and room ambience

Following are some insights into some of these issues that have been drawn from the experiences of staff and students who have used lecture recordings.
The philosophy and outcomes of the course – where learning experiences and outcomes are best achieved through a physical presence for social communication, networking, socialisation and collaboration then reliance on lecture recordings may not be appropriate.

Content - recordings may not be appropriate if lecture material contains:

- confidential or sensitive content that is best not heard by anyone who is not enrolled in the course
- confronting or disturbing content that is best discussed in an environment where students reactions can be monitored and responded to on the fly
- copyrighted elements that cannot be broadcast through the Internet
- video and other multimedia content that recordings are not able to capture

Lecture context and dynamics - Lecture recordings have been found to be useful when:

- the lecture is delivered in a traditional format based on largely on one-way communication
- class sizes are large and tend to be impersonal
- there are little to no interactive elements where students communicate or collaborate with others
- there is difficulty in capturing student responses
- Lecture recordings have been found to be less appropriate for small classes where the face-to-face encounter is used for problems solving, discussions and other small group activities.

Student characteristics - Lecture recordings are beneficial when students:

- cannot attend for bona fide reasons – sickness, timetabling, distance from campus
- are seeking flexibility due to work, family and other lifestyle arrangements
- come from non-English speaking backgrounds
- have special learning needs which make understanding and comprehending real-time

Structuring an integrated learning environment

The traditional lecture has been an enduring feature of university life around which staff workloads, curriculum designs and student experiences are constructed. With changing student profiles and attendance patterns, new technologies and new ways of communicating and accessing information there is the opportunity to review the role of lectures, and restructure the learning environment to provide a more integrated experience for students.

Why lecture?

A typical response will include some or all of the following – to:

- impart information related to the subject – facts, principles ideas etc.
- build conceptual frameworks with students
- provide a structured experience of the unit content
- illustrate and explain concepts using visual aids, video, or other props
- inspire and motivate students
- communicate and establish a connection between the lecturer and students
• make announcements to keep students up to date with events and course administration

For many, lectures have a multifaceted role, incorporating many of the objectives on the list. Reflecting this, the lecture is often the main point of contact between staff and students for formal communication about issues and problems encountered, changes to the program and important events.

With the introduction of lecture recordings, the lecture may no longer be a reliable focal point for managing the unit and students’ learning experiences, particularly if students delay listening to the recordings or do not listen on a regular basis. New communication strategies may need to be developed. Recordings will work best if they are seen by students to be integral to their learning and well connected to the activities and experiences that make up the learning environment, rather than as add-on extras.

Following are some examples of how units have been restructured to integrate EchoSystem in an holistic way:

*Treat the unit web site as the learning hub*

If the lecture has been used as the main point of communication with students – announcements and interacting with students, you may need to create a new centralised location as the main point of contact. Your web site can be used as the learning hub in which you can regularly post updates and important messages to an announcements section.

*Identify components of your course where attendance is essential*

Reserve these for face-to-face sessions and ensure your students are aware of compulsory attendance.

*Think about alternatives to lectures*

If your lectures are primarily for imparting information there may be more strategic ways of doing this to accommodate your students’ circumstances and meet their learning needs. You may even be able to substitute some of your lectures with pre-recorded sessions; introduce more small group tutorials to explore issues in detail; confine your lectures to coincide with the introduction of new topics; or limit lectures to strategic times throughout the semester – beginning, middle and end or prior to exams.

*Integrate EchoSystem into a wider suite of online communication tools*

Link the lecture to a discussion forum or blog to gain feedback. Invite students, whether present or using lecture recordings to identify points of confusion or areas of difficulty for addressing at the beginning of the next lecture. This will allow you to keep in touch, monitor progress and identify problems. In addition it will help students to keep in touch with each other.

*Link the lecture to follow-up activities or assignments*

This requires students to reflect on the lecture material or use it in some way. For example problem solving tasks, quizzes, themes or issues for discussion on online forums, group or paired activities that can be posted to a unit wiki, blog or forum.
Maintain continuity between lectures and other activities

Where lecture content is a prerequisite for follow-on tutorials or practical sessions then review timetabling arrangements to ensure that students have time to listen to recordings beforehand. If this is not possible then try to:

- provide timeslots on the same day for those attending face-to-face and later in the week for those relying on lecture recordings; or

- devise other ways of providing students with tutorial stimulus material – e.g. podcast, readings, problems.

Optimising learning with lecture recordings

Managing lecture attendance

While the benefits for external and part-time students are largely undisputed, some staff are not sure of the benefits for internals. Many have expressed unease about falling lecture attendance and concerns of students not engaging with their coursework, delaying listening to lecture recordings and reducing their opportunities for social learning in class. Restructuring the teaching and learning activities to integrate EchoSystem in an holistic way will alleviate this problem to some extent.

Nevertheless where attendance is falling, the reasons are usually multifaceted and may not necessarily be due to iLecture. Bear in mind that lecture attendance typically falls over the semester whether EchoSystem is available or not.

Other reasons could include:

- timing of lectures in inconvenient time slots
- timetable clashes
- students can’t come because of illness or other unexpected events
- students choose not to come
- a belief by students that they can learn just as well from recordings

Not all lecturers experience falling attendance. Many have similar attendance patterns with or without EchoSystem.

Students are more likely to come if they see it benefits their learning for example:

- they may need to participate in live discussions to achieve specific learning outcomes
- they may need to be present to see the visual materials or see how a process unfolds in a demonstration
- the content is sensitive and not appropriate to be listened to without the guidance of the lecturer
- they find the lecturer and lectures motivating
Students choose to use iLecture for a variety of reasons. If attendance is compulsory at all or some lectures, then let students know from the outset. Even if it if not, there may still be benefits gained from attending that students are not aware of. By informing students of your expectations and the benefits that can be gained from attendance students will be able to make informed decisions.

This in itself may not be sufficient to guarantee attendance and you may need to introduce other strategies. Focusing on attendance and developing compliance oriented strategies is one response, but it does not address the fundamental issue of why should students come to lectures if they perceive they learn as well from listening to the recording.

A more enduring approach is to focus on strategies that will motivate students and support their learning, for example:

- provide more than a monologue where you read from prepared notes - acknowledge your audience, make eye contact, smile, pause for questions, let your personality and enthusiasm for your subject shine through

- make lectures interesting, introducing current examples or topical elements that can be used to generate discussion

- try to timetable your lectures at convenient times so the lecture is not the only event on that day

- encourage students to socialise and communicate with each other before, during or after the lecture

- introduce interactive elements – paired or group discussions, Q and A sessions, student presentations, problems solving.

**Supporting students who cannot attend**

When developing strategies to encourage attendance, be mindful of the cohort of students who cannot attend and are relying on lecture recordings as their only option. Distance students, in particular value EchoSystem for its ability to:

- provide up-to-date information; and
- increase a sense of belonging.

For students not present:

- be aware that hands-on activities, discussions, and demonstrations may need to move to other components of the course (e.g. tutorials or pracs) if they cannot be captured using EchoSystem.

When listening to lecture recordings students adopt a range of strategies covering listening on a regular basis, listening to several weeks at a time or skimming lectures to pick up on salient points. Your particular context will determine which of these strategies is the most effective. Inform your students of preferred approaches in the course outline.
If regular and systematic listening is important for learning then introducing other activities like MC quizzes, online discussions, tutorial exercises that relate to lecture content can be useful for helping to keep them up to date.

New ways of communicating for all

Many lecturers have expressed concern that the use of EchoSystem has reduced their ability to communicate with their students, taking away their opportunity to monitor the nonverbal cues from their students and thereby gauge understanding. As noted above there are strategies that can be put in place in an integrated curriculum to deal with this issue.

On the positive side, EchoSystem offers the opportunity to develop new ways of communicating which can be inclusive of both internal and external students. Reported examples from staff and students include:

Revisiting the lecture – students reported using EchoSystem to listen to the content again, reflect and refine their questions before asking the lecturer through discussion forums or email. This was more effective for all when compared to previous practice of asking impromptu questions in lectures.

Providing feedback – another lecturer gathered feedback from students at the end of the lecture by way of a short survey or one minute paper to identify issues and concepts not well understood. Students were then directed to the sections of the lecture recordings where these issues were dealt with.

The lecturing process

Not only will the design of your curriculum change as you explore the most effective ways of integrating EchoSystem, so too will the actual delivery of the lecture as you devise new ways of accommodating those present and the virtual cohort. As part of the WBLT project we sought advice from students on ways in which lecturers could enhance their delivery. The suggestions emerging have been arranged around three areas of focus: the structure and content of the lecture; the lecturing process and managing the technical aspects of WBLT.

You will see that many of the suggestions relate to basic requirements for good lecturing, whether in face-to-face or web-based contexts.

1. The structure and content of the lecture
   - Provide an outline of the content to be covered and major topics to be addressed
   - Summarise key points
   - Plan for the time allowed to avoid important points being ‘cut-off’ when the recording finishes – start and end on time
   - Include announcements
2. The lecturing process
- Explain references to visuals and ensure they are available for listeners
- Indicate slide changes when moving through MS PowerPoint slides
- Describe what the attendees are doing
- Speak clearly and vary your tone to convey your enthusiasm for the topics
- Plan to use the microphone proficiently, such as minimising movement if it interferes with the sound quality
- If possible, capture student discussion, especially for external students. Repeat students’ responses if necessary
- Avoid long pauses, if possible
- Provide timely access to supplementary materials for students to use while listening

3. Managing the technical aspects of EchoSystem
- Synchronise visual and audio if possible and provide the PowerPoint file for students as backup
- Practise using the technology before the lecture and use it consistently
- Use a visualiser instead of OHP or Whiteboard [where there is one] in order for the image/notes to be captured and made available to students using iLecture only
- Plan how you will manage activities, such as playing copyrighted materials, group discussions or, for those not attending. Examples include providing some commentary for listeners or suggesting they post a reflection online
- Upload recordings from previous semesters as backups
- Plan to offer a minimum of technical support to your students (such as online FAQs) or refer them to the right channel for help

The course outline is a key instrument in managing the integration of EchoSystem into your learning and teaching context. It is in this document that you can articulate the relationship between EchoSystem and other elements of the curriculum, communication and feedback strategies and your expectations of students.

Feedback

“It’s also handy in that I can go over and repeat things if I was not paying attention or not understood something. Even if I do attend the lecture, I can occasionally go back and listen to a certain section if I need to.” ~ student

‘At the start of the semester I always go the lecture. But as soon as I’ve figured out if I can use EchoSystem – like if the lecture enables to use EchoSystem then, like (this unit), I don’t go to the lectures. But for my other subjects, … some lecturers leave out notes so you have to attend the lecture.’ ~ student

The reality is that increasingly we are having to consider curriculum designs that can cater for a blend of internal and external attendance patterns.

‘It’s a subject area where people need support while at the same time, getting information and learning. I don’t want a school leaver, a young girl listening to that at home. I want her in the room with me so that I can see her reactions, and usually, on average I have one or two people run from the room crying.’ ~ lecturer
“I tend to pick my lectures based on the lecturer. If the lecturer is like one lecturer that I have who absolutely hates anything remotely technological and is a real visual person, using overhead projectors and lots of things on the board, I find I’ve really got to be there. But if the person is really up to date with their technology, and has very clear PowerPoint slides, then I know I can miss it and catch it later on at night.” ~ student

“Why should they come and sit in the lecture theatre where they’re not interacting with anyone? I’d rather they came in for coffee and chatted with their buddies and then just sped off again.” ~ lecturer

“It is an extremely good service and a great way to supplement one’s learning by being able to follow up on concepts raised in the lecture and being able to listen to lectures when one is sick and has not attended class” ~ student

Acknowledgements:

Lecture recording technologies were designed to digitally record real-time lectures for delivery over the web. The uptake of this technology by staff and students has increased markedly, for all students.

The University of Newcastle’s experience is reflective of broader trends in the sector, where lecture recordings are just one of a range of information and communications technologies being introduced in response to the changing context of higher education and circumstances of students. The popularity of the technology with students is well recognised, however it has challenged long held traditions of university teaching, the role of lectures, student attendance patterns and ways of learning.

A recent national project funded by the Australian Learning and Teaching Council (formerly the Carrick Institute) set about to explore these challenges. Insights from this project have been used to develop this set of guidelines for academic staff on how to make the most effective use of lecture recordings. Guidelines for students are also included at the end of the booklet. Please feel free to photocopy and distribute them to your students to help them make decisions about lecture recordings for their learning.

Further information about the project, the project report and other resources produced as part of the project including case studies, vignettes, frequently asked questions and research papers are available on the project web site at:
http://www.mq.edu.au/ltc/altc/wblt/index.htm

If you would like to explore the issues in more detail please contact Newcastle’s representative on the project team: Greg Preston – Greg.Preston@newcastle.edu.au

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These materials have been adapted with permission from Macquarie University’s documentation available on the project web site.