

## **Project Title: Audio-NoTeS: Audio Notes for Novel Teaching Support**

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**Other contributors:** Norman Gray and Nic Labrosse, Physics and Astronomy; Michael Given, Archaeology; Steve Draper, Psychology; Niall Barr, Learning and Teaching Centre.

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### **Summary**

The latest Digital Natives survey shows that 90% of students expect lecture recordings, yet this is not common practice. This project aims to address this. Audio-recordings of lectures are easy to podcast (making them cost/time-efficient, encouraging routine recording of lectures), but although there is clearly much value in them, it is not obvious how best to present them so students may extract that value and usefully exploit recordings. Archaeology and the School of Physics and Astronomy (P&A) routinely record and distribute lectures, but are concerned that the format is not straightforwardly searchable by students. Members of the project team in P&A have developed a prototype online audiotagging tool, which allows staff and students to create and share annotations and indexes of the recordings. This prototype has been technically successful, and we hope to receive funding from P&A to support a student summer project, to develop improvements to the interface in the light of our experience with the tool this last year.

This present proposal is for a complementary project, to develop the *pedagogical* tools to help students and staff best exploit the considerable value latent in the lecture audio. Our experience is that students use the recordings late in the session, supporting revision. We will develop techniques (e.g. student exercises) which allow students to benefit from recordings and their annotation earlier in the session – contemporaneously with lectures being delivered – and in doing so add value to the audio, which will immediately reinforce learning and which they and their colleagues will reap further benefit from, at revision time.

The project team comprises both domain experts in two dissimilar subjects, and experts in the theory and practice of peer-assisted learning, in particular the proven **Jigsaw** technique, from which we draw inspiration.

### **Aims and Outcomes**

To further test and improve a prototype of an audiotagging tool and evaluate whether the **Jigsaw** technique, which is a technique originally developed for face-to-face collaborative group work, can inspire suitable exercises to motivate online collaboration between students.

By so doing, to produce **teaching and learning resources** which will be of benefit to current and future students, both at the point of learning and for revision purposes, and to investigate how these might be adapted for general use across a range of disciplines. Our project team includes members from **Physics and Astronomy** (in the College of Science and Engineering) and **Archaeology** (in the College of Arts). In addition, others in the project team have experience in teaching in **Philosophy** (in the College of Arts), **Engineering** (in the College of Science and Engineering), **Biology** (in the College of Medical, Veterinary and Life Sciences) and **Psychology** (in the College of Science and Engineering).

In particular, to develop further teaching techniques in the form of stereotypical exercises for use with the tool which can be very naturally adapted to multiple disciplines, so that lecturers can continue to use these techniques, and pass them to their colleagues, after the project has completed. Thus this combination of a technology and a technique may be easily transferred to other disciplines, putting **sustainability** at the heart of this project.

From our preliminary discussions, we anticipate that these exercises will aim to support students in creating an audio 'index' of a set of lectures. This pattern, with variants, naturally extends to making links between audio and text, notes, slides, images and other resources, and may include chaptering, blogging, or the identification of whole-course themes. This will reinforce the learning of students as they engage with the task, and will be a valuable resource for revision purposes. In particular, the linking of audio and slides will be explored in Archaeology.

This project aligns with the **Learning and Teaching Strategy** theme of “Enhancing of student learning using the University’s Graduate Attributes framework” (in particular, the graduate attributes of “subject specialists”, “independent and critical thinkers” and “experienced collaborators”). It also aligns with the theme of “Innovation in the Curriculum” as it uses technologies (the audiotagging tool and Moodle) to enhance assessment, provide online collaborative environments, and to support peer learning activities. In addition, this project addresses the issue of how to enhance engagement of students with learning, and develop their reflective learning skills in pre-honours years.

### **Previous Work**

In the last academic session, some lecturers in P&A (NG and NL) have experimented with an audiotagging tool, ‘Audiotag’, in order that students/groups of students can tag podcasts of lectures. A screencast demo of an earlier version is available at <http://www.vimeo.com/22175857>. In order to fully exploit the benefits of this, a successful pedagogical technique which enables and scaffolds collaborative learning is needed.

The Jigsaw teaching technique is a method of encouraging collaborative learning between a diverse group of students. What is distinctive about Jigsaw is that it requires students to participate collaboratively in order that they learn individually, and there is a need to develop and evaluate new tools in order to fully exploit this method of teaching. The Jigsaw technique, in its pure form, is intended to support the primary delivery of a curriculum; we (SH) have extensive experience of using it in a slightly modified form, to support significant tutorial amplification of material delivered elsewhere<sup>1</sup>; and we intend to use it again here, while still being faithful to the method’s insights and pedagogic strength, to support students’ auxiliary reprocessing of lecture material.

The School of P&A will, we confidently hope, provide the funds to support a summer student (2012: Physics/Computing Science student recruited and committed) to make needed user-interface improvements. Though these will be separately funded, the two projects will be synchronised and their personnel will cooperate and collaborate. The coincidence of funding gives both projects additional leverage to further combine pedagogical techniques and technological innovations.

### **Methodology**

The Audiotag server has been used in recent sessions for both undergraduate and honours classes in P&A, and will be used again in the next session. In addition, it will be used for the first time in Archaeology in pre-honours classes:

- Lecturers upload audio recordings of their lectures, and the server combines them into a podcast.
- In addition to the normal ways of listening to a podcast, the audio can be played within the webpage, with controls to start, stop and skip forward and back.
- Students, lecturers and GTAs can add notes and tags to instants or periods within those recordings, in a way which is broadly similar to the tagging of web pages on delicious.com. Everyone can see (and distinguish) both their own annotations and those of others. In this way we support the analogues of both marginal notes and a folksonomy-style index.

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<sup>1</sup>

<http://prs.heacademy.ac.uk/view.html/prsfundedprojects/68>

A variety of methods based around the Jigsaw classroom will be used in order to implement, and thus test the success of this model. For example, in P&A students will be placed into Jigsaw type groups, and assigned particular podcasts to tag. In addition, in order to “seed” the tagging process, particular students will be offered remuneration for tagging specific podcasts. In Archaeology this will be done by GTAs. In P&A incentives in the form of prizes will be offered in order to motivate all students to participate in the project. Suitable prizes will be purchased and advertised to the student group. At the end of the project, the project team will carefully assess the contributions from all students and award prizes based on merit, according to pre-agreed categories.

In order to fully investigate and implement this two researchers (SH, SD) who have experience with using the Jigsaw technique will work with relevant teachers in order to ensure that:

1. they understand the principles of the Jigsaw technique and its difference from, and strengths over, other models of collaborative group work;
2. teaching materials are developed according to the Jigsaw technique and the new techniques are appropriately documented.

Ethical approval will be sought as necessary from the relevant Colleges prior to the beginning of this project.

### **Potential Applicability / Transferability**

It is anticipated that this technique and technology will be generally applicable and will readily transfer across the Colleges and Schools. There is nothing discipline-specific about the technology used in this project, suggesting that the principled exploitation of readily-available lecture audio will be promptly reusable by all levels and in all disciplines: to verify this, our current proposal includes colleagues from two different colleges. As has already been mentioned, 90% of students expect lecture recordings, yet this is not common practice. However, this is easy to remedy. Most current teaching still uses lectures (producing audio), and generates other teaching resources (such as lecturer notes or slides), and so can benefit from a technique which enhances both, using ‘off-line’ activities which are minimally disrupting to the lecturer’s preferred practice while enhancing students’ learning. We expect the technique to be applicable in similar degrees but in different ways to courses where the lectures are almost the sole delivery medium, and to those where they are intended to integrate multiple other media. The project team will also develop teaching materials for use by other academics wishing to use the technology in their courses, and will make these freely available.

### **Evaluation**

A comparison of exam results between students participating in the project and those from previous years will be made. In addition students will be asked to complete a feedback questionnaire which will include questions about student perceptions of this project.

### **Timetable**

<b>Date</b>	<b>Activity</b>
July-Aug 2012	Consult with relevant teachers, design support materials. Design evaluation materials. Development of user interface for audiotagging tool.
Sept-Dec 2012	Deliver classes in P&A and in Archaeology using audiotagging tool and Jigsaw-inspired design in order to “tag” podcasts.
Dec 2012	Evaluation of teaching. Modification of design as necessary
Jan-Mar 2013	Deliver classes in P&A and in Archaeology using audiotagging tool and Jigsaw-inspired design in order to “tag” podcasts.
Apr- Jun 2013	Evaluation of project. Dissemination (project report, L&T conference, papers to relevant journals etc.).

## Budget

- **Sarah Honeychurch** Project management, Jigsaw consultant. Time: 10% FTE for 12 months. Provided as part of regular duties.
- **Steve Draper** Consultant on Jigsaw technique Time 10% FTE for 12 months. Provided as part of regular duties.
- **Niall Barr** Systems Developer. Consultation as required with regard to integration with Moodle. Provided as part of regular duties.
- **Nic Labrosse** Provided as part of regular duties.
- **Michael Given** Provided as part of regular duties.
- **Norman Gray** This is not part of normal duties, and funding is requested for time buy-in. Salary scale: Grade 8, point 42. Time: 10% FTE for 9 months. Total cost: £4,005.15.
- **Archaeology GTAs** - Archaeology have 2 x 1 hour lectures per week (22 lectures) and 6 GTAs. Costed at 2 hours per lecture, at £18.45 per hour (base of a grade 6, this includes NI and superannuation): £4,870.80
- **Remuneration for Physics students:** £1,000

**Total buy in requested:** £8,875.95

**Remuneration for Physics students:** £1,000

**Total funding requested:** £9,875.95

The project will also benefit (as noted above) from coincident funding from the School of P&A, to support technical developments to the audiotagging tool.

## Approval

*Should this application be successful and be granted funding, I give consent for this application to be published on the Learning and Teaching Centre website.*

## Signature of Project Leader

Sarah Honeychurch