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Student audio notes evolution

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Abstract

The Student Audio Notes Project at Sheffield Hallam University encouraged students to act autonomously by using audio recorders to capture conversations relating to their learning. This approach was conducted in order to address the transient nature of significant conversations (Waterfield 2006). Digital audio is an accessible media that enables the learner to identify and record otherwise ephemeral experiences, so that they can re-engage later when they are ready to reflect and act upon the learning (Nortcliffe and Middleton 2009a). Student audio notes, whilst having a similar potential to written notes in aiding recall (Intons-Peterson and Fournier 1986), may be better suited to many situations.

This paper highlights the evolutionary development of techniques used by students during the project. Fifty-two students were given MP3 recorders to capture experiences that they identified as being useful, whether these were from the formal, semi-formal or informal curriculum (Middleton and Nortcliffe 2009a). Many began by recording their lectures, broadening out to capture significant conversations of a formal nature including peer feedback and project supervision (Rossiter et al. 2009). Later less formal conversations and personal ideas were gathered. The paper discusses the approaches adopted by students, drawing upon an analysis of interviews and surveys. The audio methods will be reviewed according to their capacity to enhance learner autonomy. In conclusion, the paper highlights the evolutionary nature of finding technology-supported learner autonomy, as the students became more attuned to the opportunities around them, and raises further questions for institutions seeking to encourage wider student participation in becoming responsible producers of audio learning notes.

Introduction

There were two key drivers that informed the design and ethos of the Student Audio Notes Project. The first being findings from the successful development of audio feedback and audio lecture note making techniques at Sheffield Hallam. The second being awareness relating to the empowering of disabled and non-disabled students in becoming more autonomous learners.

The recording and redistribution of student-tutor feedback conversations by the tutor has been shown to be an effective and attractive method of encouraging greater student control and formative engagement with learning. However, this model is difficult to scale (Nortcliffe and Middleton, 2009). Re-distribution of personal audio feedback files can be a tricky and time consuming task (Trimingham and Pete Simmons, 2010). Although it took longer,

another found it more preferable and a more relaxing method of giving feedback (Stockwell, 2010). Therefore audio recording can have significant impact on academic workloads both in terms of the generation and distribution of the audio recordings, raising the question of who actually should take responsibility for recording; the academic or the learner? Academic recording can be narrow in focus as the method is determined by the academic's perspective opposed to the learners.

 Further research into the strategic and selective audio recording of lectures and other learning events has been shown to be beneficial for disabled students (Nortcliffe and Middleton, 2006). The formative impact of learning conversations decreases if they are not recorded in some-way, as become a vague memory (Waterfield et al., 2006). This is true for all students, whether they are disabled or not. Audio provides the opportunity, therefore, to capture these transient conversations and make them re-accessible for further learning experiences by the learner. Learners have reported and demonstrated this to be true for the audio recording of formative feedback conversations (Nortcliffe and Middleton, 2007).

The project aimed to provide the opportunity for students to take responsibility and develop a student-centric approach to audio recording learning conversations that would be beneficial to their studies and learning reflections. This is as audio notes could have the same potential for student learning as note-taking, as previous research has shown note taking increases memory encoding for later recall (Intons-Peterson and Fournier, 1986). Therefore the act of audio recording has the potential to make the same learning impact on their studies, and future employment.

Methodology

The project was opened to all student volunteers across Sheffield Hallam University, disabled and non-disabled. Each student was supplied with a 4 Gb Creative Zen, a simple to use MP3 recording device with a built in microphone. A total of 52 students voluntarily agreed and signed up for the project. The student volunteers were enrolled on a diverse range of courses ranging from physiotherapy to fine art. The students were initially debriefed on how to use the device, the project aims and protocols, including the recommended guidelines on seeking permission before recording an individual, and not to share beyond the University. However, students were encouraged to share their recordings with their peers in order to develop further learning opportunities through peer conversation. Previous research had indicated that the sharing of audio recordings amongst peers was valuable (Middleton and Nortcliffe, 2009a). Each student signed a project protocol agreement that defined their role in the project and the project terms and conditions.

Also at the debrief the students were actively encouraged to act autonomously by taking responsibility for making, generating and listening to their own personalised learning recordings. The students were encouraged to record any autonomously audio learning interventions, i.e. any learning interactions with their peers, tutors, and placement supervisors, as well as personal audio notes.

The students were further supported throughout the project via email and the Virtual Learning Environment (VLE), where a project organisation online site was set up that included podcasts and discussion boards. These were intended to enable all project staff and student members to support one another.

The research methodology adopted was a mix of quantitative and qualitative research. As a part of the research some students were interviewed about their project expectations at the induction; online surveys were conducted after the first semester of the project and again at the end of the project, finally followed by a survey in the following year. Also, many students took part in a mid-project review and at the end of the first year of the project.

Initial Student Perceptions

A sample interview of student volunteers indicated that their initial rationale was varied as to why they were personally attracted to take part in the Student Audio Notes project, ranging from a deaf student struggling in lectures to capture all the audio learning, to film production students conducting interviews. However, their responses indicated that their initial perceptions of the project were that it would aid their involvement in an original event, and their listening and concentration, as shown by the following student comments;

> Student A, "I actually wear a hearing aid and when I attend the lectures, as everyone's aware, they're not the quietest place to be. And I find I am sometimes missing half the lectures or sections of the lectures which are quite important to me."

> Student B, "I have quite a trouble taking notes, writing down what people are saying and concentrating because I'm usually writing really slowly to make it as neat as possible. But I also make loads of spelling mistakes, I can't read what I've wrote, so then I forget what's actually been said. I can't write and learn at the same time..."

> Student C, "I think it would be a lot easier for me because I'd be able to hear what they're saying exactly how they said it, rather than just my interpretation of it at the time in writing, which is bad enough anyway."

> Student D, "I ask quite a lot of questions in lectures if I don't understand something. The answers they give me I jot down. But I can't jot down word for word because sometimes they're quite lengthy answers. Being able to listen to them being played back, I think it would be a great help. "

> Student E, "I do take notes and the notes are fine, but then I'm looking at the notes and I think "OK, so I understand that in theory, but it would be really helpful if I could remember exactly what the lecturer said at the time, rather than taking down the notes that are on, say, the PowerPoint slides."

It was noted that students initial perceptions were on the prospects of recording lectures opposes to other learning conversations.

Initial Survey

As reported by Nortcliffe et al (2009), 31 out of 50 students enrolled on the Blackboard project support site and completed the initial online questionnaire three months after the project's launch. The results indicated that the majority of the students intended to use the device for one purpose, lectures. However as commented by Nortcliffe et al. (2009), half the students reported using the recorder to make personal audio notes, despite this approach not featuring in the student's own initial perceptions of the project. Typically personal audio notes involved the use of the device as an external memory aid to note personal actions and thoughts, ideas for assessment, and observations to support their reflections on learning.

The survey results further indicate that over half the students followed up listening back to the recordings typically within a few days of making the audio interventions. Respondents believed that listening back enabled them to cognitively reconnect with the material. As reported by Rossiter et al. (2009), the majority of the students agreed or strongly agreed that they found the recordings useful and had helped to improve their learning, as shown by the following student's comments into listening habits in the survey;

> Student F "I've mainly been using it to record my lectures, which I can then listen to later, whilst reading through, and adding to my existing notes or the lecture slides, which has helped quite a lot."

Importantly over half the students agreed that the Student Audio Notes project had helped them to become more autonomous as learners. This is demonstrated by the following students' comments in the survey,

> Student G "I listen to my recordings on my home PC if I need to refer to a certain part of a lecture that I am struggling to understand."

> Student H "Normally at home, at my desk. I'll listen to lectures now and again through my computer whilst I have my all my notes from the same lecture in front of me, ready to add anything to them that I missed out."

Though student's initial focus is still using the audio recording to support learning in lectures, some students are anticipating the potential audio recording for other learning opportunities, as shown by the following student's free comments in response to the question on where they listen to audio recordings;

> Student I "At home after transferring them to my PC, however the option to use the headphones is there to listen to them while I am out, something I'm assuming will be

immensely useful when the exam period comes around, such as memorising my notes on the way to Uni' through listening to them."

Mid-project focus group

The first focus groups, at the beginning of semester 2, took the form of semi-structured conversations (Cohen et al., 2000) involving nine students from the project who were interviewed in pairs or on their own. The interviews indicated that the students were deploying the devices in a variety of ways and had a variety of methods for managing and using the audio recordings. In particular, the focus groups revealed that the initial student ideas for how the devices could be used had changed and multiplied. They were more creative and constructive than just recording lectures; however, this approach is still the most common application. A number of students commented on how they were broadening out their applicational use of the device to gather feedback and personal notes;

> Student J "I've started having it next to my bed because it's a quick flick on, if I do wake up and I've got a thought, I've recorded it on the device. I've used those ideas."

> Student K "I have recorded a couple of feedback sessions that we had and a couple of seminars where we've been getting friends to feedback on our own work. Just so that I can remember that a bit easier."

> Student L "Feedback from lecturers, sometimes it's hard to take it all in and remember it all."

Also, some students reported using the device to record personal events and reflections as means to support autonomous learning through self reflective feedback and to support feed forward learning;

> Student M "When I've got role play meetings for course work, then you can listen to yourself and get feedback rather than just the tutor giving you feedback. You can listen to yourself and see where you think you've gone wrong."

> Student N "It's not thoughts that I'm collecting. It's purely for feedback - listening to myself...listening to them afterwards so you can listen to yourself so you can understand where you went wrong. We had an assignment a short while afterwards which I got better marks."

Second Survey

As reported by Nortcliffe et al (2010), only 16 out of 50 students enrolled on the Student Audio Notes Project Blackboard site responded in completing the second survey at the end of the academic year. Three of the students which responded declared a disability (2 dyslexic and 1 deaf). The survey highlights that the majority perceive that the audio device

has been beneficial to their learning, 56% of the students had found the audio recording helpful in their studies, learning, and in improving their learning. The majority of the students, 75%, would recommend its use to other students as a way to enhance their learning. However as to whether it has helped them become more autonomous is debatable as the response was mixed; 37.5 % neither agreed nor disagreed that it has aided them to become more independent in their learning. The survey also highlighted that the students are persistently still using and find it beneficial to support their learning in teaching activities, as shown by the following student quotes;

> Student L "Recording the lectures/tutorials gives you more than the PowerPoint presentations"

> Student P "I can keep more personalised lecture notes without needing to write a lot down."

> Student Q "It's helped me to add a lot to my notes from previous lectures since I'm able to run through them again and see what I'd missed originally.

However audio recording of lectures had an impact on student perceptions as to who is responsible for their learning, i.e. they are, as shown by the following responses on whether it had encouraged them to become more independent in their learning;

> Student P "It opened my eyes a little to taking control of my learning rather than just turning up to a lecture because I'm supposed to."

> Student Q "If there was something I'd missed out when writing lecture notes, I'd normally have to go to friends to get that information from them (and visa versa), though with the audio device I've been able to seek out that information for myself through listening to the audio from those lectures."

44% students reported that audio recordings had aided in deepening their understanding, further supported by the following student's responses on this subject;

> Student R "No need to go over and over again in your notes to understand the basics all the time. Once you've recorded it you could always listen to it before you study next time. Allows you more time and understanding to go deeper in to the topic."

> Student S "Knowing that the lecture is being recorded allowed me to concentrate more fully on what the lecturer was saying rather than rushing to get it all written down."

> Student T "It has enabled me to retain information in a different format than the traditional pen and paper which was useful, and is easily accessible so one could listen to recordings whilst going for a run in the morning and give my brain and

subconscious mind to work on things whilst doing something else - hence saving time!"

Also the survey result, as reported by Nortcliffe et al (2010), has continued to highlight how audio recording has continued to help the students change their approach to their studies and learning, as shown by the widening context the audio recording was being applied, as less than a third reported using device in class activities, whereas 50% reported using the device for feedback; quite a contrast to the initial survey. In terms of learning, feedback is critical in the learning cycle in developing student on-going learning (Gibbs and Simpson, 2004), therefore any device that encourages students change and increases student engagement is welcomed. Some students were very positive of the approach using the audio recording for learning and recommended the following to other students;

Student U "It is worth people trying the activities to see if it benefits their own style of learning."

Student V "It can be very useful if, like me, you study a subject where lots of technical data has to be remembered all the time."

Student W "Use it for interviews, meetings with project supervisor, lecturers. The feedback is really important. Use it when you have group discussions. It will assure you that you won't miss anything important."

Student X "To record lectures, seminars and meetings. To record quick notes and ideas. To record revision notes for playback when doing other tasks such as walking or food shopping."

Final Focus Group

A focus group approach was again used at the end of semester 2 with three students from the project. The discussion between students highlighted that student audio recording supports student's personal development in autonomous learning through the increased engagement in learning from lectures;

Student Y "So if I've written something down [in lecturer] I might not understand it straight away, whereas if I'm listening to it you can hear the whole thing so understand what's going on from start to finish rather than taking little bits and pieces.

Student Z" I'm still writing notes [in Lectures], but what it is, the first time you hear something you don't know what the important bits are. But when you go back you know to listen out for the important bits. I still listen live. I don't turn off my mind. But to listen again is useful because you know what's coming up too.

> Student AA "I've gone back and listened to things [lecture recording] and it's made more sense because I understand things better. Maybe I've got a bit more experience."

Re-listening is clearly aiding the students to apply reflective practice and encouraging students to re-engage with learning opportunity and increasing learning autonomy, as highlighted by the following student comments;

> Student Y "I'm a lot more like reflective with it. I start to think about other issues that are related to it."

> Student AA "It was useful for reflective practice because you can record stuff and then go back... later in the day and see what happened. And that's what you need to do for your Continued Professional Development."

The latter comment demonstrates that audio recording has the potential to make an impact beyond a course of study, that it has role in professional development and practice. The student's willingness to broaden the deployment of the devices has provided the opportunity to increase their autonomous learning, for example in supporting examination preparation, to project dissertations, demonstrating the student willingness to engage in their learning and their learner autonomy, as shown by following student comments;

> Student Y "I find it really useful for revising. I record my [written] notes and then listen back to it again and again and again."

> Student AA "I've used it to write my dissertation when I've had ideas and put it beside my bed and when I've woken up and I've had an idea 'and I must do that... write this like this or.'"

One Year On Survey

Only 18 students of the 52 original student members of the project are still studying at Sheffield Hallam University, and only 18% responded to the one year on survey. The survey results show that only two students have continued to use the audio device for their studies and learning. The main reason cited by the students for no-longer making student audio notes, is that they were out of the habit, hence explaining the low student engagement in responding to the survey. Therefore, to ensure continuing successful deployment of audio to support student learning and understanding, students need to be reminded and encouraged to develop the habit of audio recording, to enable the habit to become as second nature as writing written notes. However, a student on placement indicated that they perceived whilst on placement there was a less of a need to record as when studying, but had found it beneficial to continue with audio recording meetings with their work supervisor whilst on placement.

Two further students reported that recording audio notes had assisted them to become more independent in their learning and to gain a deeper understanding of their studies, as shown by their free comments in the survey on this subject;

> Student BB "When studying for my January exams I used my recordings pretty often to add notes to lecture slides which I didn't get chance to add during the actual lecture."

> Student CC "When certain subjects are difficult, reflecting on audio notes can help to make things clearer."

> Student BB "It's helped a lot with clearing up some more complex areas of some modules which I didn't understand the first time I heard them."

> Student CC "I now think about what I am doing rather than learning blindly."

The focus of the student audio notes project was on developing student learner autonomy through the use of audio recording; however, student engagement in the project has resulted in the students reflecting on their current practices and engagement in their learning in general. As shown by the previous student comments, which highlighted that audio recording had enabled them to take charge of their learning and become autonomous in their learning. Another student responded that the project had promoted the benefits of reflective practice to further develop their learner autonomy;

> Student DD "Although I do not keep audio journals, the audio recordings project has opened my eyes to keeping a journal on certain things, I now keep a diary up to date day by day of what I have done. And being on placement this year I have also kept notes on every task I have done and what problems I encountered and how I got around them so that if I encounter parts of that task again I have a reference to it and a better understanding of it making me more efficient in my second encounter with it."

Another student reported that they had personally not found audio to be beneficial to their style of learning; however the project had enabled them to reflect and develop different methods of learning to support learner autonomy;

> Student EE "I found that using them last year was counterproductive. I made audio notes, stored them and forgot about them. Taking notes on paper helps me focus and select the material I needed."

Conclusion

The evidence generated during the project indicates that students are capable of capturing learning conversations and utilising the scenarios as learning opportunities. Student

involvement in such project encourages students to reflect on their learning approaches, and further develop their learning practices to become autonomous.

In terms of audio recording the approach needs to become habitual. The habit is easily lost in the study gap between the end of semester 2 and start of semester 1. The students themselves recommend regularly using the audio device, so it becomes a habit and carrying it at all times, with the majority interviewed saying they would replace it if they lost it;

> Student Y "Yes, I'll definitely keep recording stuff... I definitely would do it. If I had to start my undergrad again I definitely would start recording from the beginning. I wish I'd used it earlier."

> Student AA "I wish I'd used mine earlier as well."

Therefore the students need gentle reminders of the learning potential through the use of and engagement in audio recording. The devices are valuable in consistently supporting learning opportunities from any formal, semi-formal and informal dialog scenarios (Middleton and Nortcliffe, 2009b). It is also important to ensure that academic staff, systems administrators and managers appreciate the value of this technology-enhanced method of autonomous learning so that systems, policies and protocols do not conflict with the practice.

Students found significant benefits in deploying devices to support their learning in a variety learning opportunities beyond the lecture. However the latter was consistently the most popular method of deployment; in reality in HE, lectures are the main mode of formal delivery of learning by an institution. The re-listening enabled the students to re-connect and to rectify any misconceptions or mishearing; to reconsider learning opportunities. Therefore encouraging the students to become reflective learners, providing them the opportunity to deepen their understanding and learning from the conversation/lecture, promoting learner autonomy.

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