SHOULD AUDIO FEEDBACK BE USED BECAUSE IT IS EASILY AVAILABLE OR FOR REASONS OF PEDAGOGY?

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Abstract: This study explores student responsiveness to the use of audio feedback through the embedding of sound-files into word processed documents. It reviews the creation and use of a tutor's formative feedback on assignment work within a taught module.

1 INTRODUCTION

With the appearance of social software and Web 2.0 technologies, students today work in a digital age, and although in the past accessibility to technology for students has been considered problematic, this is not currently the case. Therefore, how technology can be harnessed to promote students' learning and whether it is used just because it is available or for reasons of pedagogy, is nowadays often under debate. One such technology is the use of digital audio recordings, as previous studies have found that students learning can benefit from its use. Results from National Student Surveys show that although students are on the whole, happy with their experience in higher education, they are not satisfied with the assessment and feedback process. To help alleviate this problem, the Higher Education Academy has identified a series of practices to enhance students' feedback on their assessed work. One such suggestion is the delivery of feedback in an alternative format.

2 CONTEXT

Following the work of IMPALA (2008), the Sounds Good Project at Leeds Metropolitan University (2008/9) and other similar research projects, this study sort to examine how digitally recorded audio comments, could be used as an alternative method of feedback to students currently studying within higher education. It explored tutor and student responsiveness to its use as a feedback tool and the pedagogical impact it had on the student learning

experience. Although there has been a substantial amount of research conducted into the use of audio feedback, the embedding of sound files within electronically submitted course work is not so well documented. Therefore, the purpose of the study was to evaluate the effectiveness and the effects of embedding digital audio feedback within a Word document whilst ascertaining what impact it would have on pedagogy.

Assessment should be a positive process, where students receive feedback that will assist their further learning and acknowledge their achievements, and it was hoped that the outcomes of this study would begin to progressively change approaches to the assessment and feedback process by encouraging other tutors to engage with audio feedback, helping to deepen and enrich students' learning.

3 DESIGN AND METHOD

For the purposes of this study, a flexible design, with an outcome and process evaluative research approach was followed to evaluate the effectiveness and the effects of digital audio feedback. A multiple research methodology that incorporated techniques from qualitative and quantitative methods was used for empirical data collection.

Participants were students from Edge Hill University in Ormskirk, West Lancashire, enrolled in the second semester of the academic year 2008/2009 and studying a range of subjects, at levels three, four and six. Tutor participants had a wide variety of teaching experience and taught various

subjects, at all levels.

Although outcomes had been predicted based on other case studies, the uniqueness of this study meant there was a need to determine if the technology chosen to deliver the audio feedback was pedagogically sound and could be used to enhance students learning.

Therefore the research questions needed to determine both tutor and student views, and answers to the following questions were sought:

1. Will using audio enable greater flexibility in the feedback process?
2. Can feedback be enhanced using audio?

The study was broken down into six individual phases and a multi-method strategy used to examine the relation between students, tutors and the use of audio as a feedback tool. Analysis and interpretation of the data collected was iterative and employed throughout the length of the study. This ensured that, if further questions arose, additional enquiries could be completed.

Qualitative data was transcribed whenever completed and two levels of coding employed to ease information retrieval. An electronic self-completion, questionnaire was made available to all student participants and respondents were offered a choice of alternative answers and open-ended questions. Unsolicited qualitative feedback was received and added to the data set as it gave significant insight into students' thoughts and perceptions of audio feedback, several weeks after receiving it and after completing the course. As more than one method of data collection was used, triangulation was implemented to check whether differing sets of evidence supported and complemented, or contradicted each other.

4 LIMITATIONS

Given the short time frame for this project, a longitudinal study could not be completed. Therefore although the gathering of information regarding the impact audio feedback had on student achievement could have been a data rich source, for the purpose of this study it was not deemed practical. Likewise, the novelty effect of audio feedback, could have implications for the validity of the findings and further research would be needed to clarify whether or not this was the case.

5 THE USE OF AUDIO

The use of audio feedback encourages self-reflection, can be given to large classes without the need for face-to-face contact and is an alternative technology whose purpose is to "affect learning rather than to transmit knowledge" (Bradley et al, cited in Nortcliffe & Middleton, 2008, p.48). This is because more information can be obtained from recorded comments, including tone of voice (Rust, 2001). It is therefore seen to have good pedagogical underpinning (Salmon, 2004). Participants in a study conducted by Jelfs & Whitelock (2000) felt that the use of audio created a feeling of tutor attendance, which substantiated research conducted by Reeves & Nass (1998) who concluded that the human voice increases social presence. Using audio to deliver feedback helps students to conceptualise it more as a dialogue, even though this form of delivery is a one-way communication and not interactive (Corbell & Valdes-Corbeil, 2007). Yet results of research conducted into students' learning experiences and their impressions of audio feedback have shown that although it can be more time-consuming to receive feedback in an auditory format (Ice et al, 2007) some students prefer feedback to be given this way and understand the advantages of it (Ice et al, 2007; Nortcliffe & Middleton, 2008; Rotherham, 2009). This is not true for all students, though, as some have reservations about receiving audio feedback, whilst others indicate a preference for both audio and written comments (Still, 2006; Nortcliffe, 2007; Salmon & Edirisingha, 2008; Rotheram, 2009). It may be argued that other external factors have influenced this preference, the main contributors being the time the feedback was received (Gibbs & Simpson, 2005; Nicol & Macfarland-Dick, 2006; Hramiak, 2007; Rotheram, 2009) and the novelty factor of audio in the feedback process (Oomen-Early et al., 2008; Rotheram, 2009).

6 DISCUSSION OF FINDINGS

Statistics have been produced based on 28 questionnaires returned from a sample of 33 students studying at Edge Hill University in the year 2008/2009, semester 2. The modal respondent was male (78.6%). Statistics produced for the 17 tutor respondents show the modal respondent was female.

Gender	BSc/Ba Business	BSc Computing	Fast Forward	Totals
Male	9 (75%)	12 (85%)	1 (50%)	22
Female	3 (25%)	2 (15%)	1 (50%)	6
Totals	12	14	2	28

Figure 1: Gender.

7 DEVELOPMENT OF FUTURE LEARNING

The students' response to the development of their future learning was good, with 26 students saying they would either definitely or possibly listen to the feedback more than once.

This was emphasised by some of the comments made by the students regarding the use of audio feedback. One student found:
PS6:"it interesting to hear the feedback again"
whilst others thought: *PS14:"it was good to listen through the feedback again"* and *PS6:"Its an excellent way of reflecting back rather than just notes"*.
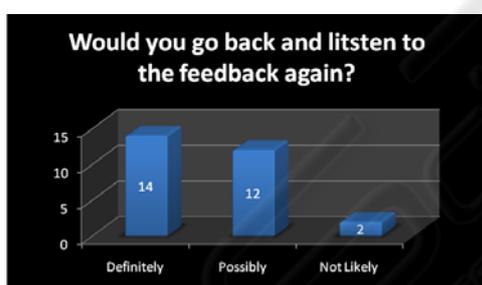

Figure 2: Listen again.

Another student found it quite strange to listen to feedback in an audio format at first. However, they recognised the importance of listening to it again as did other respondents. *PU2:"Audio feedback you can assess this and improve your work rapidly"*
These findings demonstrated how digital audio can be used to help student's process information, whilst encouraging them to become reflective about their own learning (Crook et al., 2008).
In addition to this, students looking towards furthering their learning stated that:

> *PS12:"I think this is the future"*
> *PS14:"I think anything new that can help develop our leraning should be used!"*

This shows that whilst students are still looking for "traditional approaches" (JISC, 2009, p.8) they are willing to adapt and shape their personal development by utilising the "best tools for the job" (ibid).

As learning is both active and passive for a student to become an active learner they must make use of feedback obtained during the assessment process (Burns & Sinfield, 2006). Comments from one tutor confirm that the use of audio feedback has encouraged students to become active in their learning through the utilisation of feedback obtained.

PT17:"I believe it gave them the motivation to actually go and do what I asked them to do far more than a written comment..."
"Theoretically they should have been ones they were looking at anyway within their lit review, if they had'nt done it they certainly had for their final piece of work"
The tutor later goes on to say:
"They have got quotes from that article within their work and their final draft. So I could track, cos I've still got the audio files, I could track if I said I want you to go away and look at article I could see quotes from it, and it's in the bibliography that is some sort of measureable".

This was further evidence that students are able to coordinate their own learning, if feedback is received in a way which aids their progression. However, what was not clear was whether it was the provision of feedback in an alternative form, the novelty factor of audio feedback or the precise prescriptive comments received from the tutor that increased the effectiveness of the feedback.
The novelty factor surrounding the use of audio is a concern raised by Rotherham (2009) who suggests that his significantly positive results about audio feedback could be due to its novelty. Unsolicited comments made by two students show these concerns to be realistic.

PU1:"The method of feedback was a sound file which was unique to other modules"
PU3:"The audio feedback was a first for me and was actually quite a nice change"

Although the novelty factor of audio feedback clearly requires further research, the above findings strongly indicate that the use of embedded audio feedback can facilitate greater flexibility in the feedback process.

8 QUALITY OF FEEDBACK

In addition to listening to their audio feedback more than once further analysis was carried out to assess if digital audio could enhance the quality of feedback.

Students were asked whether they thought embedding a verbal commentary within the marked text had been useful and if it had helped them develop a better insight into what was required to progress their learning in the future. Participants responded positively to this with 25 students agreeing or strongly agreeing that it had been useful. Although the findings in this study imply that most students and tutors showed an overwhelming preference for the use of audio, despite it being a one-way communication tool, some respondents still felt a need for some sort of synchronous interaction between student and tutor, which according to the key findings of JISC (2009) is the traditional, personal elements of study, which students still require. Furthermore, these results contradict the findings of Still (2006 p.18) who concludes there were "no negative perceptions of the technique".

9 SUMMARY OF RESULTS

Throughout this study, evidence has suggested that there is the potential to embed digital audio feedback within a Word document and that it seems to enable greater flexibility in the feedback process. It is also a method that tutors in higher education appear to be prepared to use. This does not seem to be subject-specific as there was no apparent relationship between subject and tutor attitudes towards the use of digital audio feedback. Students responded favourably to the use of audio feedback, whatever the discipline studied, and showed a preference for the use of embedded audio comments as a feedback mechanism as they thought its use enhanced the feedback process. It is worth considering, however, that students had not received audio feedback before and this could account for the overwhelming preference for its use. In fact several students referred to its uniqueness, and what is cause for concern, due to the limitations of the study, is whether the novelty of audio feedback impacted on student responsiveness.

10 RECOMMENDATIONS FOR PROFESSIONAL PRACTICE

Although this was a single case study of restricted scope, it suggests a number of points that professionals should consider before embarking on the delivery of audio feedback:

- Follow normal principles of feedback practice - audio should not replace but enhance;

- Ascertain what communication tool students are using to receive the feedback as not all PC operating systems allow an embedded sound file to be opened;
- Ensure students know where to access the sound file;
- Become familiar with the hand held device and embedding a sound file prior to delivery
- Check the quality of the sound;
- Check that the method of delivery is suitable;

And finally:

- Do not use audio feedback just because it is available – it should be used for reasons of pedagogy, and thought must be given as to the suitability of the feedback for certain students and whether they would benefit from verbal, written or both written and verbal commentary.

11 SUGGESTIONS FOR FURTHER RESEARCH

Although this study has achieved its aims, it has also highlighted a need for further exploration. A clearer understanding is needed of how students use audio feedback and what part of the feedback increases student learning. Furthermore, the majority of the students said they would listen to feedback again; additional research is needed to ascertain whether or not this is really the case, or if the novelty factor surrounding the use of audio has led to this hypothesis. What impact audio feedback has on students' progression and learning should also be further researched as should whether or not the lack of interactivity in digital audio feedback has any negative consequences. In addition, more research is needed to determine which technologies students are prepared to use to receive digital audio feedback and whether they are suitable to retrieve embedded sound files in word-processed documents.

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