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TECHNOLOGY INFUSION IN PART TIME PROFESSIONAL DEVELOPMENT

Technology Infusion Within Part-Time Professional Development Programmes for Academic

Staff and Industry Practitioners

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Abstract

This paper reports on the experiences of programme co-ordinators and includes findings from a two year (2013-15) evaluation pilot study on a key communication technology – audio feedback – conducted across three accredited part-time programmes for a blend of academic staff (faculty) in higher education and eLearning industry practitioners. Key to our decision making with regards to which tools to infuse in our programmes is our aim to help the educators who participate on our programmes to make better use of technology tools in their own instructional contexts. This paper focuses on the example of formative audio feedback. Anticipated benefits were that the audio mode would provide clearer feedback, and that tone of voice would help convey meaning, adding a personal element to engage learners more effectively. Participant responses to end-of-module survey questions on their experience of audio feedback and their thoughts on implementing audio feedback in their own practice are presented and discussed. The perspectives of the tutors involved are considered, and we share practical details of how audio feedback can be constructed and distributed to students. The initial study has demonstrated the potential of formative audio feedback to engage learners more effectively in developing and improving on their work.

Keywords: communication technology, audio feedback, pilot-study, program coordinators, implementation

Technology Infusion Within Part-Time Professional Development Programmes for Academic
Staff and Industry Practitioners

Introduction

This paper reports on the experiences of programme co-ordinators and includes findings from a two year (2013-15) evaluation pilot study on a key communication technology – audio feedback – conducted across three accredited part-time programmes at Dublin Institute of Technology (DIT). The programme participants comprise academic staff (faculty) in higher education, professionals working in training and development, and e-learning practitioners. The authors are located in an academic professional development department, namely the Learning, Teaching and Technology Centre at DIT.

Even today, educators who are less familiar and less comfortable with technology than their colleagues and students exist, and struggle to seamlessly integrate a growing list of technology tools into their regular curriculum. Therefore, key to our decision-making with regards to which tools to infuse and why, is our aim to help the educators who participate on our programmes to make better use of technology tools for their own purposes of instruction, and to help their students improve their technology skills within their professional contexts.

From the suite of tools and media that we use on our programmes, the one that we focus on here is our use of asynchronous audio formative feedback on draft assignments in our *MA in Higher Education*, *MSc in Applied eLearning* and *Postgraduate Diploma in Third Level Learning and Teaching*. The importance of timely, specific and appropriate feedback to learners has been widely discussed and documented in educational literature over many years (Nicol & Macfarlane Dick, 2006). The use of new technologies to support feedback processes is the focus of much current research both in Ireland and internationally (Y1Feedback 2016a, 2016b; Macgregor, Spiers & Taylor, 2011). In this paper, we focus specifically on the use of digital audio recording as a means of providing formative feedback. The paper explains the

rationale for this approach, the means by which it has been implemented, and our evaluation of it with our students. We share practical details of how audio feedback can be made and given to students, and explain our next steps in developing this work.

Rationale

Formative feedback provides timely, detailed and focused information to learners without a summative grade or result, in order to support the development and improvement of their work (Shute, 2008). Formative feedback is crucial for the early establishment of participant engagement in any programme (Ice, Curtis, Phillips & Wells, 2007), and particularly in continuing professional development programmes where participants are busy professionals accommodating their studies within a hectic schedule. We sought to enhance the quality of the feedback we could give to our participants, and also their experience of receiving feedback in line with models of best practice in feedback (Nicol & Macfarlane Dick, 2006). We include here the concept of feed-forward, in other words that comments from a tutor not only identify points of strengths and weakness in the current work, but also aim to guide the next actions of the learner towards improving future work (Hennessy & Forrester, 2014).

Within the specific context in which we are teaching, it was also important to understand how we could best empower academic staff (faculty) and e-learning practitioners to feel more confident in suggesting and using digital solutions in their own professional practice. Audio feedback offers the opportunity to mix audio and typed comments on draft work, to personalize the experience further for the student. We also wanted to ascertain if any barriers existed to using the technology for this purpose, and if so, what they were and how they could be overcome to further integrate digital tools into our programmes. Research has indicated mixed results with regards to the amount of time and technical expertise needed to produce audio feedback (King, McGugan & Bunyan, 2008). Different experiences have been

reported dependent on year group, size of cohort, and assessment type (Hennessy & Forrester, 2014). Given the perpetual struggle facing educators to introduce new tools and media and balance this against resource constraints, we wanted to explore cost effective solutions, and whether such digital technologies pay for themselves, either in financial terms or from the perspective of saving time.

Participants and Processes

In this pilot project, we used audio feedback with 62 postgraduate participants across three part-time programmes, as shown in Table 1.

To construct the audio feedback, we used digital audio recorders and mobile phones (set to flight mode). It is possible to enhance the sound quality by attaching a microphone to the computer or device being used. Headsets with microphones were also used and were helpful in excluding other sound in the surrounding environment. Audacity (<http://www.audacityteam.org/>), a freely available sound editing software program, was used to edit files where necessary. In addition, some free conversion software was used when needed. For example, recordings made on an iPhone had to be converted from the M4A format to MP3. The objective was to provide programme participants with simple, small files which would play on any platform or device, and thus keep technical demands on participants to a minimum.

There was an initial investment in time to investigate the process of making the feedback and organising the equipment and software. Our primary intention was not to save time, but rather to provide more effective feedback for our students. However, we were also mindful not to put in place a process which would be more time-consuming than previous methods of giving feedback. After the first few files had been recorded, we became accustomed to the process. A strong incentive to start and then to continue was to tell the students in advance that we were planning to use audio feedback.

Table 1: *Participation in pilot project*

Professional Development Programme	Profile of Participants
MA in Higher Education https://lttcprogrammes.wordpress.com/ma-in-higher-education/	22 in the academic year 2013-14 16 in the academic year 2014-15 [these were participants in the <i>Academic Writing and Publishing</i> module who received audio feedback on a journal article proposal and final draft]
MSc in Applied eLearning https://lttcprogrammes.wordpress.com/msc-in-applied-elearning/	12 in the academic year 2014-15 [these were participants in the <i>Supporting Virtual Communities</i> online module who received weekly summaries by group on their online activities]
Postgraduate Diploma in Third Level Learning and Teaching https://lttcprogrammes.wordpress.com/pg-diploma/	12 in the academic year 2014-15 [these were participants on the <i>Professional Practice in Third Level Learning and Teaching</i> module who received audio feedback on a formative task asking them to reflect on a significant incident in their teaching]

Our approach was to read the student's work and make notes either in handwriting or by using *Track Changes* and *Comments* within MS Word. It was important to be selective about the aspects of the work to focus on, since exhaustive responses to mechanical issues such as grammar and punctuation would take too much of the time in a short audio recording. For a repeated error or issue in the writing, written annotations to the work could support one mention of the point on audio. Annotations were also used to address errors in referencing and citation.

Making audio feedback requires a quiet space. Using a portable device for recording can help with moving to a quieter location more easily. Our experience indicated that audio

feedback files should be of approximately five minutes' duration at most. We used a script template with a common introduction for all students, followed by categories which were tailored for each individual's feedback. Rather than scripting these fully, we tended to use notes and bullet points which could be discussed more naturally in the recording. Making a pause after a mistake meant that the flat line in a sound file could be easily seen, showing where to edit out the mistake in Audacity. In terms of existing resources available on this topic, we found Rotherham's (2009) guide to using digital audio feedback and in terms of toolkits, JISC's InfoKit (no date) and the IMPALA project (no date) very helpful.

Results and Discussion

We conducted online surveys of our participant groups to gather their responses to the use of the audio feedback. The survey results indicated that students felt higher order concerns were focused on to a greater extent than in written feedback; they enjoyed engaging with the feedback and the personal touch; they also liked the encouraging tone of voice from their tutor, which was not easy to incorporate in written feedback. The remainder of this section discusses our findings in detail, and where appropriate, we quote directly from the participants themselves (in italics). Some of our findings concur with those of previous studies, and we will refer to those in presenting specific details of our results in this section.

For the MA in Higher Education, the survey was implemented in both years. 14 responses were received in total. (The survey was implemented amongst the MSc Applied eLearning students but we did not receive responses from the group on this occasion.) Of the MA responses, 11 students indicated that they had not received or given audio feedback before, two had received audio feedback before. One person had given audio feedback to their own students. All of the respondents agreed or strongly agreed that the feedback was clear, and that it was effective. Students felt that the feedback was more personal, and this

emphasis on tone corroborates with the findings of other studies by Kim (2004) and Wood *et al.* (2011). Two participants commented:

It mimicked a tutorial in such a way that I felt the tutor was doing a one-on-one

Audio feedback was useful. I would consider using it myself

Audio feedback made it easier to receive constructive criticism in feedback, as this student notes:

Feedback felt more positive when receiving critical comments which could be viewed as negative when read off a page

Other researchers have reported this finding, and also that tutors tend to choose their words more carefully when delivering critical feedback on work with substantial weaknesses (King, McGugan & Bunyan 2008), with distinct strategies depending on the year of study of the students (Hennessy & Forrester, 2014).

Similarly to the findings of Merry and Orsmond (2008), participants felt they had a better understanding of the material and that the feedback was clearer, as this participant mentions:

I could get the sense of meaning from tone

There were examples of repeated listening to engage with the feedback, again this has been reported in other studies (Ice *et al.*, 2007; King, McGugan & Bunyan, 2008):

I thought the audio feedback works really well. I listened to it, took it in, listened to it again and made a checklist of improvements suggested, and then implemented it

However, there were also anxieties about the use of technology for this purpose, reflected in the comments of this participant:

I was anxious about the process of being able to access the actual feedback but it wasn't a problem in practice

Other studies have discussed this issue, with some even pointing out that analog cassettes used for audio feedback in the 1980s had the advantage of simplicity for both tutor and student whereas newer technologies are often more challenging (Macgregor, Spiers & Taylor, 2011). Searching through audio files and coursework at the same time was also difficult for some:

Scanning through the paper to locate the issues being highlighted was a negative

Some students also felt they had to make their own written feedback notes from the audio in order to engage with it, an experience shared by the Diploma students and again, documented in the literature (Merry & Orsmond, 2008). These two participants reflect on the need to do this:

I felt I had to transcribe the feedback so that I could keep referring to it. While this was annoying, I came to fully understand it and interacted with it more.

I wrote out the feedback in bullet points: took time.

In the case of the Postgraduate Diploma in Third Level Learning and Teaching, five people responded to the online survey. As with the Master's students, they reported some repeated listening to the feedback and were more inclined to listen more than once to the audio file:

Easier to 'absorb' (sic) the feedback (voice catches an intonation not easily communicated in written form)

They found the feedback more engaging, as three of the participants note here:

More personal, and as a student I felt more compelled to properly sit down and listen through the audio clip in its entirety, probably more so than if it was traditional written feedback [...] some tones and emphases may be hard to convey effectively in writing, but when communicated orally may be a lot clearer

I can hear intonation and listening requires less effort than reading

This is certainly something I'd consider using myself

However, this group also experienced some anxieties around receiving feedback in an audio format:

Afraid of getting bad news

Some students also felt that it could be less effective than written feedback:

cannot ask for clarification as in conversation...but equally cannot interact with it as you would written feedback

Again, students reported a tendency to create their own written feedback from the audio:

easier to refer back to this and scan than to listen to full clip again

They also reported that audio was not as easy to search or summarise from as written feedback:

Higher cognitive load required to identify the relevant points and arrange them yourself

As the participants were academic staff, or professional trainers/instructional designers, we asked them whether they would implement audio feedback in their own practice. Within the Master's group, seven said they would but the other seven were undecided. Three out of the five Diploma respondents said that they would implement it themselves.

Concerns included the time needed to make audio feedback, finding a suitable and available space to work in, and the issues with following up on their own students' work later on. This is reflected in the work of Lyng (2011) who argued that the process of providing prompt and regular audio feedback does not scale well as student numbers increase. The issue of scalability is important. A study by Middleton and Nortcliffe (2008) reports that the opportunity for one-to-one tutor-student feedback conversation, as is found in some models

of audio feedback, is limited by the time they take to produce and the mechanisms available for their distribution, especially where this involves large cohorts.

One person in the current study felt it would be easier to re-check written feedback to see whether students had acted on the points given to them:

It would also be more difficult to locate specific feedback points I provided to students if they were only in audio clips

However, by the same token, they would use audio feedback in cases where there were no instructions for further assessments. In the case where assessments link to each other across a module or modules, we suggest that students could be asked to summarise how they addressed audio feedback when submitting each subsequent assignment.

Overall, our experiences of using audio feedback when taken in conjunction with the reported studies in the literature to date might be regarded as somewhat typical. The findings presented above indicate some positive benefits to the use of audio feedback in part-time professional development programmes. Participants found that it could be easier to engage with feedback, to understand complex or critical feedback, and to feel reassured as to their progress at the early stages of their work in each module. However, they also expressed some anxieties about hearing and engaging with the feedback. Although they were interested in trying this mode of feedback within their own professional settings, they were also somewhat reluctant to face the potential difficulties of producing audio feedback. Pressures of time and scarcity of support and resources for staff may be influencing their responses here.

In light of the challenges for both tutors and students in using audio feedback, it is important to consider whether this mode of feedback is worth continuing and developing in the future. In common with other studies of audio feedback, ours has investigated students' experiences of, and responses to, this mode of feedback rather than measuring learning gains (Macgregor, Spiers & Taylor, 2011). However, we argue that the process itself has value and

relevance in the specific context in which we are teaching, and that there is much potential benefit in developing audio and screencast feedback for our cohorts. As we discussed at the outset, an integral aspect of all three programmes in this study are the opportunities built in to the curriculum to bring participants together with other academic staff (faculty) and e-learning practitioners on a weekly basis to progress through the curriculum and share ways they can infuse technology in their lessons and training. The most important aspect is for the participants to experience what it is like to let their imagination go and realise that if their technology ideas work, that is a positive outcome, and equally, if there are problems, they can 'tweak' them along the way. Through a blend of experimentation and reflection on the programmes, the participants' knowledge base on technology infusion is activated, reinforced, and transformed. Tutors must model this practice as part of teaching on these programmes, in order to build such a culture of experimentation and reflection. Piloting new approaches, and discussing with our participants whether or not they have found these to be effective, is central to this process of modelling the practice of infusing technology into formal taught programmes such as ours.

The literature also points to some intriguing aspects of the use of audio feedback which have not yet been fully explored. King, McGugan and Bunyan (2008) report that more and richer feedback is given by lecturers using audio, but also that the feedback tends to reflect the immediate effect of the student's writing on the reader. This insight is important to us for two reasons: first, that the tutor's engagement in the work leads to qualitatively different feedback than the summative, written variety; and second, it demonstrates to the student the close proximity of the tutor to his/her work, which appears to account for the strong engagement of students with audio feedback (Hennessy & Forrester, 2014). The modules in which we have used audio feedback address the development of academic writing, and reflective writing as distinct skills. Achieving fluency and rigour in both

registers is a key learning outcome of our programmes, and using audio feedback to create a different dynamic between tutors, students, and students' work is something we aim to explore and develop further.

Conclusion

In this paper we have presented our rationale for using audio feedback as one example of the infusion of new technologies in part-time professional development programmes for academic staff, training professionals and e-learning practitioners. Our experiences thus far might be regarded as typical of those reported in the literature on audio feedback over the past eight to ten years. However, audio feedback offers added value in the context in which we are teaching: its inclusion, and the modelling of practice as part of this, is in and of itself relevant to our programme participants.

There are some limitations of the study that are important to acknowledge. The pilot phase was small in scale, and not all students responded to the online questionnaires asking for their feedback. This limits the extent to which our findings can be applied to other settings. Tutors did not receive formal training in the production and use of audio files, and therefore did not build this preparation into the time required to make the audio feedback. The process was somewhat more time-consuming than anticipated. At this stage, using audio feedback has not entailed any significant financial expenditure. Notwithstanding the early challenges, the investment of time has diminished as our experience has grown. At present, we estimate that the same amount of time is taken for audio feedback as for written, but we continue to review issues of scalability and the time involved in this process.

We are currently extending the use of audio feedback to personalize further the commentary given to our students, and to offer them more choice about the ways in which they receive their feedback. In addition, following the work of Anson, Dannels, Laboy and Carneiro (2016), we piloted screencasting feedback in the academic year 2015-16. In this

mode, the recording includes on-screen review of the student's work in MS Word alongside the audio narrative. We are currently collecting data from students who have received screencast feedback, and the next phases of our research will entail analysis of their experiences. The potential afforded by audio and screencast feedback for a new dynamic in the dialogue between tutors and programme participants is, we argue, exciting and worthwhile.

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