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Investigating Expectations and Experiences of Audio and Written Assignment Feedback in First Year Undergraduate Students

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Abstract

Previous research suggests that audio feedback may be an important mechanism for facilitating effective and timely assignment feedback. The present study examined expectations and experiences of audio and written feedback provided through *turnitin for iPad®* from students within the same cohort and assignment. The results showed that although initially sceptical of audio- compared to written feedback, there were no significant differences in students' experiences of audio and written feedback. Students' performance on the assignment was not associated with their experiences of audio feedback but first class performing students (>70%) had more positive experiences of written feedback than those who received an upper second class grade (60-69%). In general, the results imply that audio feedback provided through *turnitin for iPad®* is a viable alternative to written feedback. The findings are discussed in relation to past research findings.

Key words: audio feedback; student expectations; student experience; written feedback

The context of university assignment feedback

University lecturers give feedback to students on their assignments to inform learning, justify grades and meet institutional requirements (Bailey and Garner 2010). Feedback also provides students with expert guidance as well as conforms to wider professional requirements (Harman and McDowell 2011). With such diverse and important functions, it is unsurprising that feedback on assignments has the single biggest impact on student performance (Gibbs and Simpson 2004). Nonetheless, internationally, satisfaction with feedback is low (James, Krause, and Jennings 2010; Nicol 2010). Within the UK the National Student Survey (NSS; 2013) of final year undergraduate students shows that amongst Higher Education (HE) establishments in general, students have poorer evaluations of assessment and feedback than any other aspects of the university academic experience. Perceptions of feedback amongst students may be low as feedback can actually undermine student confidence, as learners perceive it to be overly harsh (Young 2000), rather than viewing it as encouraging and supportive (Harman and McDowell 2011).

Audio feedback

Compared to traditional written formats, the provision of audio comments on completed assignments allows for greater "expression, nuance, tone and personal input" (Carruthers et al. 2014, 3). Thus, compared to written accounts, using audio has the potential to be a more sensitive way of delivering feedback to learners. Indeed, using audio comments is generally associated with higher levels of feedback satisfaction amongst students (Ice et al. 2007; Chalmers et al. 2014).

All types of feedback can be divided into three key domains based on the features of the work to which it relates, these have been termed micro-level, middle-level, and global-level (Stern and Solomon 2006). Micro-level comments relate to the basics of writing such as spelling, grammar and referencing conventions. Middle-level comments relate to the student's ability to produce quality ideas and support them with appropriate evidence, and global-level comments critique the overall structure, academic argument and organisation of the assignment (Stern and Solomon 2006).

Evidence suggests that students prefer micro-level information to be communicated through written rather than audio feedback (Ice et al. 2010). This preference could be due to written comments highlighting each instance of poor spelling and grammar, whereas audio feedback may more commonly provide a general instruction to attend to spelling and grammar when completing future assignments. With regards to formative feedback, written

micro-level feedback may therefore be popular with students as it serves as an easy spelling and grammar check. However, rather than focus solely on the current assignment, feedback should actually 'feed forward' by highlighting areas for attention in future assignments and highlighting sources of support and guidance (Race 2010). Thus, general micro-level comments delivered through audio feedback may actually be more beneficial to learners (particularly on summative assessments) as students are forced to actively work to improve their generic spelling and grammar skills.

Hatziapostolou and Paraskakis (2010) suggest that good feedback should contain constructive criticism that emphasizes how the work relates to learning outcomes and assessment requirements. As it is tailored to the individual student and aims to encourage them in their future studies, audio feedback may be better suited than written comments to provide personalised middle-level and global-level comments to learners. Moreover, considerable research has demonstrated that audio (compared to written feedback) is associated with a significantly greater number of staff comments, suggesting that this type of feedback actually provides better and more detailed feedback for students than written comments (Chalmers et al. 2014; Laughton 2013; Macgregor, Spiers, and Taylor 2011; Merry and Orsmond 2008).

Staff experience of audio feedback

As audio feedback often provides a greater number of comments on student work (Chalmers et al. 2014; Laughton 2013; Macgregor et al. 2011; Merry and Orsmond 2008) this implies it is a more time consuming method of providing feedback than written comments. However, Lunt and Curran (2010) estimate one minute of speech takes approximately six minutes to write; illustrating that audio feedback has the potential to actually save a significant proportion of staff time. Nonetheless, Laughton (2013) acknowledges that in some incidences the greater number of words in audio compared to written feedback could be attributable to fillers and less succinct sentence constructions in spontaneous audio comments, rather than more meaningful feedback. Despite this, the average time taken to mark formative assignments when providing audio feedback is three minutes less, compared to written comments provided through Gradebook in Blackboard (Allen and Bentley 2012). Thus, markers generally evaluate audio feedback as a time efficient form of feedback (Brearley and Cullen 2012) that could facilitate a timely return to students. This is an important finding given that a main source of student dissatisfaction with feedback is delays in its return (Cann 2014).

Prior research has identified barriers to audio feedback based upon the difficulty of recording and editing MP3 files (Munro and Hollingworth 2014) as well as struggling to find quiet places to actually record the audio (King, McGugan, and Bunyan 2008). However, most previous research has examined the use of Audacity® and GarageBand, which are software designed for audio recording in general. The external nature of Audacity® means that although recording feedback is quick, uploading large audio files to a virtual learning environment (VLE) or attaching them to individual emails can be very time consuming and laborious (Sweeney 2009) leading to negative staff evaluations of audio feedback (Cavanaugh and Song 2014; Sweeney 2009).

VLEs provide a variety of mechanisms for feedback (eg. *Wimba, turnitin for iPad®, Gradebook, Microsoft Word* documents etc) each of which may be differently experienced by students. Recently, audio recording systems have been embedded in existing and user friendly software used by academics and students, such as the assignment submission platform *turnitin for iPad®*. This implies that it is possible to overcome the main staff concern of audio feedback (difficulty uploading large files). Past research therefore suggests that audio feedback may be an effective way of managing high marking loads and the student need for timely feedback. However, the student experience of audio feedback that is embedded within familiar VLEs needs to be assessed (Li and De Luca 2014).

Student experience of feedback

Research evidence recently reported has shown students are not always utilising the feedback they receive on a piece of work in subsequent assignments (Li and De Luca 2014). In fact, some students focus solely upon the grade awarded (Carless 2006; Mutch 2003). Lunt and Curran (2010) found as few as 5% of students collected written feedback compared to 50% who listened to audio feedback (although they did not assess accessing rates for typed feedback provided through VLEs which is a more common manner of provided feedback now). Thus, students appear to be at least ten times more likely to open audio files than collect hard copies of written feedback (Lunt and Curran 2010) although it should be noted that the provision of handwritten feedback is becoming less common as electronic feedback provided through VLEs takes over. Although some of these studies involved small samples that may not be representative of wider engagement with feedback, they question how students can be encouraged to engage more fully with the feedback they receive on their assignments. In addition, these findings highlight the need for further research comparing the student experience of audio feedback with their experience of electronic written feedback

provided through a VLE.   The evidence suggests that audio feedback may be a useful tool to facilitate increased student engagement with feedback and, ultimately, future assessment performance (Lunt and Curran 2010).

Huxham (2007) found that students like feedback that is personal to them, rather than generic in scope. Audio feedback by its very nature is personalised and Ice et al. (2007) demonstrated that, when used in ongoing formative assessments, audio feedback can even build a sense of community amongst distance learning students. Furthermore, Jackson (2012) found students valued the less formal vocabulary used in audio compared to written feedback. Not only did this informal language enable students to understand better their performance, it also served to personalise staff and make them appear more approachable.

Written feedback may be perceived as unfair or harsh, as the staff member is unable to effectively convey their tone of voice in handwritten or typed comments, and so cannot minimise individual emotional reactions (Dowden et al. 2011). However, with its ability to convey tone, emotion and encouragement, audio feedback may mitigate against possible negative emotional reactions to feedback. Lizzio and Wilson (2008) discovered in a large sample of students, the most effective written feedback was believed to be that which stimulates learning development, and is fair and encouraging. The potential for criticism to be delivered in an encouraging tone of voice is therefore a benefit of audio feedback over written feedback. Hennessy and Forrester (2013) conceptualise this aspect of audio feedback as invoking the *enhanced presence* of the tutor compared to written feedback.

Rodway-Dyer, Knight, and Dunne (2011) demonstrated that first year undergraduate students were more likely than more experienced students to perceive audio feedback negatively due to the perception that it is overly severe. Nonetheless, 76% of students thought the audio feedback they received would help them in future assignments. Thus, receiving audio feedback may encourage students to seek additional face-to-face feedback and guidance from academic staff, despite initial scepticism.

Jones et al. (2012) found that student reactions to written feedback were related to grade achieved in that assignment, such that lower performing students were less satisfied than higher performing students with the feedback. However, this did not impact upon their motivation to try hard in their future assignments, perhaps because most participants felt the feedback they received, whilst sometimes disappointing, was fair. Jones et al.'s findings are interesting as they reflect the student's initial reactions to receiving their feedback, rather than subsequent to a time delay as in most research. A final advantage of this audio feedback is it is often more accessible than traditional handwritten comments which can be illegible to

students (Merry and Orsmond 2008). However, as previously highlighted, whether it has advantages over electronic written feedback which does not have legibility issues, is unknown. In general, a range of benefits associated with audio feedback has been noted regardless of whether the research assesses initial or delayed reactions to the feedback.

Justification for the present study

To date, few studies have examined expectations and attitudes towards audio feedback amongst individuals who have yet to receive this type of comment on their work (for exception see France and Wheeler 2007). As audio feedback becomes increasingly common within HE institutions, students may now expect and desire more technological feedback than traditional handwritten or typed comments on their work. Despite the widespread use of VLEs within HE institutions (Nortcliffe and Middleton 2007), and the strengths of audio feedback, research has failed to evaluate the student experience of audio feedback that is embedded within VLE (Merry and Orsmond 2008). However, McGarvey and Haxton (2011) suggest that technology could be used to enhance feedback quality and, ultimately, student learning. This paper addresses the gap in current research by assessing the student experience of audio feedback delivered through a familiar VLE. Moreover, negative expectations of audio feedback may influence participant responses when completing post-feedback questionnaires. For this reason, the current study examined students' expectations of audio feedback (pre-feedback measure, time-point 1) as well as experiences of this type of feedback (post-feedback measure, time-point 2). In addition, much of the research evaluating audio feedback does so in isolation from other forms of feedback with only a few studies looking at both mediums of feedback within a single cohort on a single assessment (see for example Ice et al. 2007; Ice et al. 2010; Chalmers et al. 2014). In addition, much of the research is arguably dated, given its use of handwritten feedback as the comparison group. Nonetheless, Cavanaugh and Song (2014) suggest that further empirical research that directly compares student perceptions of written and audio feedback is required to inform the appropriate use of audio feedback.

Summary and hypotheses

The present study provides a direct comparison of expectations and experiences of audio and written (electronic typed) feedback individually, as well as direct comparisons of audio and written feedback within the same student cohort and assignment. This gives a clear illustration of students' experiences of feedback and indicates the most effective approach to

engaging students in staff comments on their work. It was hypothesised that participants would have less positive expectations of audio feedback compared to written feedback, but that the experience of audio feedback would be evaluated more positively. Additionally, it was expected that experiences of both written and audio feedback would surpass expectations due to high quality feedback on the course. Finally, in accordance with the findings of Dowden et al. (2011), it was hypothesised that grade achieved for the assignment would be a positive predictor of feedback evaluations.

Method

Overview

The study reported here examined student expectations and experiences of audio and written feedback. To do this, all participants completed two questionnaires rating their expectations of written and audio feedback at time-point 1. Following random allocation to receive either audio or written feedback on their work, participants completed a single post measure questionnaire at time-point 2 to evaluate the type of feedback they received.

Design

At time-point 1 there was a single within-participants variable of expectations of summative coursework feedback (written, audio). At time-point two, there was a single between-participants variable, experience of feedback (written, audio). Participants were assigned to either the audio or written condition at time-point 2 depending upon the type of feedback they had actually received for their summative academic assignment (written, audio).

Participants

One-hundred thirty-seven participants were recruited through an opportunity sample of psychology students studying on a single unit in the first year of their degree at a University in the North of England. Twenty-one participants were male, ninety-three female and the remaining twenty-two participants did not answer this item. Students were provided with credits which gave them access to research participation recruitment database in return for participation. Use of the database was advantageous to students as it facilitated participant recruitment for the research projects they conducted as part of their degree course. In accordance with ethical guidelines (BPS, 2011) no other inducements were provided.

Materials

At time-point 1 expectations of written feedback were assessed by means of a 13-item Written Feedback Scale (WFS; Cronbach's alpha = 0.949). The items were developed from previous literature on the features and functions of feedback and were all scored on 5 point Likert scales rated from 1 (*strongly disagree*) to 5 (*strongly agree*). Items assessed aspects of feedback including, ease of access, individuality, enhancing motivation to improve and usefulness in identifying participant's strengths and weaknesses. Example items included; *I believe that written feedback will help me to improve my performance*; *I believe that written feedback will be practical to access*; *I believe that written feedback will make it easy to receive criticism on my work*. The possible range of scores was between 13 and 65. Participant's expectations of audio feedback were assessed with the Audio Feedback Scale (AFS) which utilised the same 13 items as the WFS although in relation to audio feedback (Cronbach's alpha = 0.960). The AFS included one additional item assessing expectations of the sound quality of audio feedback (*I believe that audio feedback will provide feedback with high sound quality*). The possible range of scores was 14 – 70.

At time-point 2 experiences of feedback on a recently returned assignment were assessed again using the WFS and AFS. Participants completed either the WFS or the AFS, depending on the type of feedback they had received for their assignment. The 13 items (or 14 in the case of the audio feedback) were however, phrased in past tense to gage a measure of actual experiences of these types of feedback. For example; *The audio/written feedback I received on this unit helped me to improve my performance* and *The audio/written feedback I received on this unit helped me identify the strengths in my work*. As participants may not have been familiar with the terms audio feedback, a definition was provided on the AFS at both time-points 1 and 2 (Audio feedback refers to receiving feedback on your assessed work in the form of an audio recording of your tutor talking about your work).

Participants also indicated their gender, whether they had received previous audio and written feedback and, when completing the WSF or ASF at time-point 2, their assignment grade (expressed a percentage mark).

Procedure

All participants submitted an in-course 2000 word essay assignment approximately two weeks prior to the commencement of the study. The assignments

were a compulsory part of their psychology degree programme and were submitted through the online assignment submission and plagiarism checking system *turnitin* via the online learning environment Moodle. All students studying the unit were informed prior to submission that they would receive either written or audio feedback on their assignment.

Two weeks after submitting this assignment, participants were asked to complete the ASF and WFS within their scheduled lecture. Participation was voluntary and only those who signed the consent form completed the WFS and AFS at time-point 1. These questionnaires took approximately 5 minutes to complete and assessed their expectations of audio and written feedback.

The 211 assignments for the unit were evenly distributed between four experienced members of academic staff. Marking staff were randomly allocated which feedback method (written, audio) to use for each assignment; all staff provided audio feedback for half of their allocation and written feedback for the other half, thus ensuring that individual differences in marking style did not affect student experiences of audio feedback. A random number generator randomly assigned the numbered assignments to a marker and type of feedback (audio or written). Typed written feedback was created within through *turnitin for iPad*® and consisted of annotations on the electronic copy of the assignment as well as approximately 120-150 words of general feedback provided through the *turnitin* comments function. Audio feedback consisted of solely an audio file of up to 3 minutes in length in which staff talked through the strengths and weaknesses of the completed assignment. Audio feedback was recorded through the *turnitin for iPad*® app which embeds the feedback (up to 3 minutes long) within an existing VLE. This meant that the both the written and audio feedback to students was located alongside written feedback for other assignments submitted by that student and accessible through the *turnitin* application within the Moodle VLE.

Time-point 2 occurred in scheduled lectures one week after receiving the feedback for their work. Here, participants were allocated either the WFS or ASF depending upon which form of feedback they had received. Following completion of this questionnaire, participants were thanked and debriefed. Differing attendance at the lectures and student's right to decline participation in the research meant that some individuals participated in only one of the two data collection sessions.

Ethics

The study was conducted in accordance with British Psychological Society (BPS) Code of Human Research Ethics (BPS, 2011) and the University Research Ethics Committee granted local approval. All participants provided their informed consent to participate.

Results

The number of participants completing each aspect of the project varied based on the type of feedback they received, and whether the participant opted to participate at both of the two data collection points (see Table 1). Participants were excluded if they had more than 50% of the data from one time-point and 100% of the data from the other time-point missing (one participant). Fifty-nine participants completed both the ASF and WFS at time-point 1 and the relevant questionnaire (either the WFS or AFS) at time-point 2. Of these participants, 32 had received audio feedback so completed the ASF at time-point 2, and 26 had received written feedback and had completed the WFS at time-point 2.

Insert table 1 here

Due to absence or declining to complete the questionnaire at one data collection point, additional participants completed their expectations of audio feedback at time-point 1 (74), expectations of written feedback time-point 1 (86), experiences of written feedback time-point 2 (13) experiences of audio feedback time-point 2 (9) only. In the remaining dataset, twelve instances of missing data appeared to occur randomly across items and were substituted with the participant's mean score for that scale.

Insert Table 2 here

The descriptive statistics for these participants are presented in table 2. The first analysis examined whether there was a difference in positive expectations of the written and audio feedback quality at time-point 1 – a within participants analysis. A paired samples t-test was conducted to assess whether there were significant differences between participants'

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WSF and ASF scores at time-point 1[1]. The results indicated that participant's positive expectations for written feedback (M = 3.69, SD =0.87) were significantly greater than their positive expectations for audio feedback (M = 3.41, SD = 0.96), $t (102) = -2.252, p =.026,$ 95% CI [-0.52, -0.03]. An effect size was calculated using Cohen's d, which produced a figure of 0.31, equivalent to a small effect (Cohen 1992).

The second analysis assessed whether there was a difference in the experience of the written and audio feedback quality at time-point 2 – a between participants analysis. An independent samples t-test was conducted to assess whether there were significant differences between participants' experiences of feedback quality from audio and written measures at time-point 2. The results indicated that experience of written feedback (M = 3.63, SD =0.87) was not significantly more positive than the experience of audio feedback (M = 3.38, SD = 0.82), $t (78) = -1.344, p =.183,$ 95% CI [-0.63, 0.12].

A third set of analyses investigated whether experiences of feedback (measured at time-point 2) surpass expectations of feedback quality (measured at time-point 1). Two paired samples t-test were conducted to assess whether there were significant differences between participants' experiences and expectations of feedback quality from those within the written condition and then those within the audio condition[2]. The results indicated that participants expectation for written feedback (M = 3.65, SD =1.02) was not significantly greater than their experience of written feedback (M = 3.56, SD = 0.91), $t (25) = 0.475, p$ =.639, 95% CI [0.29, 0.47. The results also indicated that participants expectation for audio feedback (M = 3.55, SD =0.88) was not significantly greater than their experience of audio feedback (M = 3.47, SD = 0.86), $t (31) = 0.475, p = .638,$ 95% CI [-0.28, 0.44].

A fourth set of analyses aimed to show whether there is a greater change between expectations (time-point 1) and experiences (time-point 2) of written feedback compared with the change across these time-point for audio feedback. An independent samples t-test was conducted to assess whether there were significant differences between participants' change scores (experiences – expectations) of written feedback compared with participants' change scores (experiences– expectations) of audio feedback. The results indicated that the mean change score for written feedback (M = -0.087, SD = 0.94) were not significantly greater than

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[1] Due to the within samples design this analysis was conducted with the 103 participants who had completed both measures. As such mean scores are different from those shown in table 2 which were calculated for each measure individually.

[2] Due to the within samples design this analysis was conducted with the 26 participants who had completed the WFS at both time 1 and 2, and 32 participants who had completed the AFS at both time 1 and time 2. As such mean scores are different from those shown in table 2 which were calculated for each measure individually.

the change scores for audio feedback (M = -0.085, SD = 1.01), t (56) = 0.010, p = .992, 95% CI [0.51, 0.52].

The effect of type of feedback (written, audio) upon grade awarded was also assessed by means of an independent t-test. This showed that there was no significant differences in grade awarded depending upon whether the marker used audio (M = 58.75, SD = 9.96) or written feedback (M = 59.90, SD = 6.51), t (77) = -.604, p = .547, 95% CI [-4.93, 2.36].

The final set of analyses aimed to assess whether the students' grade for the assignment had any influence upon their response to feedback. For these analyses One-way ANOVAs were computed. Dependent variables were either written or audio feedback at time 2, with the independent variable being grade for the assignment. Grade boundaries were as follows; first (>70%), upper second (60-69%), lower second (50-59%), third (40-49%), and fail (< 40%). Frequencies of the different grades awarded through audio and written feedback are presented in table 3[3].

In the first ANOVA experiences of audio feedback comprised the dependent variable with the independent variable being grade category. There was no significant effect of essay grade on experiences of audio feedback at the p < .05 level for the four conditions $(F$(3, 36) = 0.886, p = .458.

In the second ANOVA experiences of written feedback comprised the dependent variable with the independent variable being grade for the assignment. There was a significant effect of essay grade on experiences of written feedback at the p< .05 level for the three conditions F(2, 36) = 3.573, p = .038. Post hoc comparisons using the Tukey HSD test indicated that the mean score for the *first* condition (M = 4.58, SD = 0.47) was not significantly different the mean score for the *lower second* condition (M = 3.63, SD = 0.90, p = .094), although it did significantly differ from the *upper second condition* (M = 3.32, SD = 0.69, p = .029).

Insert Table 3 here

Discussion

Summary of the results

In accordance with the hypothesis, the results revealed that participants' expectations of audio and written feedback were different, in that students demonstrated a significantly

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[3] The categories third and fail were combined due to low numbers within these groups

stronger preference for written feedback over audio feedback at time-point 1, although this difference only equated to a small effect size. Results also revealed that student experiences of quality of feedback at time-point 2 did not differ between those who had received it in an audio and written format, a finding that contradicted the hypothesised trend. In contrast to past literature and the hypothesis, experiences of feedback did not surpass expectations of feedback quality for participants receiving either audio or written feedback. Similarly, the mean change between expectations and experiences of written feedback was also not significantly greater than the change between expectations and experiences of audio feedback. Finally, students' grade for the assignment had no impact on their experience of audio feedback. However, amongst students receiving written feedback, those awarded a first class grade had more positive experiences of this type of feedback than those who received an upper second class grade.

The results show that at least initially participants had lower positive expectations of audio compared to written feedback. With only 16% of the current sample having prior experience of this form of feedback, lower expectations of audio compared to written feedback may reflect concerns about using this unfamiliar technology (JISC, 2009), rather than issues with the audio feedback itself. Support for this explanation comes from Rodway-Dyer et al. (2011) who found less positive reactions to audio feedback by first year, compared to more experienced students (Rodway-Dyer et al. 2011). Furthermore, Lilly (2010) found that ability to cope with criticism is greater amongst students further into their studies. This therefore suggests that year two and three students maybe more accepting of the enhanced presence of audio feedback than the year 1 students surveyed in the current study. Alternatively, Jones et al. (2012) suggest that year one students may be more satisfied with the quality of their (written) feedback than year two students because the first year of study does not affect final degree classification, leading to lower investment in their studies among year 1 compared to students at higher levels of study. However, the significant difference in expectations of audio and written feedback (at time-point 1) in the current research did not extend to a significant difference between student experiences of these two forms of feedback in time-point 2. Thus, both the current study, and past research demonstrate that, despite initial scepticism, students like audio feedback when they actually receive it.

No significant differences in the experiences of audio and written feedback were evident within the present study, which contradicts past research that generally shows a preference for audio over written feedback (Voelkel and Mello 2014). There are two explanations for this finding. Firstly, past research has commented that students found

handwritten and typed comments to be poor quality (Merry and Orsmond 2008; Voelkel and Mello 2014). However, the study data, and the relevant NSS (2013) data indicate that the written feedback provided on this course was of a good standard. Therefore, the fact that students were already receiving high quality written feedback could have prevented them from seeing a marked advantage of audio over written feedback. Alternatively, the experimental nature of the study could explain the lack of significant differences in the experience of audio and written feedback. This paper addressed the call by Cavanaugh and Song (2014) to conduct direct comparisons of audio and written feedback on the same assignment in order to gain a better insight into student experiences of these feedback mechanisms. With the exception of Chalmers et al. (2014) and Voelkel and Mello (2014) the present study is the only one to employ an experimental design in which participants were randomly allocated to receive either audio or written feedback on a single assignment. Although Chalmers et al. found greater satisfaction with audio than written feedback, they acknowledged that this may be due to ".. a tendency for tutors to be more generous when giving audio feedback" compared to written feedback (71). Similarly, Voelkel and Mello (2014) failed to provide support from inferential statistics for their participant's preference for audio over written feedback. Thus, the strong less robust research deign and staff bias in previous research (both absent in the current research) may account for the finding of a preference for audio over written feedback. Regardless, the current study findings suggest that the use of audio feedback will not negatively affect student evaluations and is therefore a suitable alternative.

Jones et al. (2012) demonstrated that lower performing students were less satisfied than higher performing students were with the written feedback given upon an assignment. A similar trend was found within the present research, where those received a first class grade for the assignment were significantly happier with their written feedback compared with those receiving an upper second class grade. However, there was no difference between either of these conditions and the lower second condition. This suggests that staff may need to pay particular attention to the feedback provided to mid-level students in order to be as constructive and encouraging, as they are with the highest and lowest preforming students. It is interesting to note that grade had no significant effect on experiences of audio feedback, perhaps implying that staff effectively used their enhanced presence (Hennessy and Forrester 2013) to convey their critique in a supportive and encouraging manner. In support of this, Voelkel and Mello (2014) found that although students felt their written feedback predominantly focused on the negative aspects of their performance, this same criticism was

not levelled at audio feedback. Moreover, King, McGugan, and Bunyan (2008) found that staff had heightened awareness of language use within audio compared to written feedback and actively changed their language to appear more encouraging and less critical. This finding supports the tendency towards leniency when using audio compared to written feedback identified by Voelkel and Mello, but not evident in the present study.

Limitations

High levels of attrition are common within longitudinal research (Cohen, Manion, and Morrison 2011) and overall only 36.70% of the participants who completed their expectations of feedback at time-point 1 completed their experiences of feedback (either written or audio) at time-point 2. The resulting sample was therefore fairly small, although consistent with samples in similar studies assessing student experiences of audio feedback (Chalmers et al. 2014) and in excess of samples in several similar studies (Brearley and Cullen 2012; Cavanaugh and Song 2014). Nonetheless, respondents did receive a range of grades for the assignment and were therefore representative of the cohort in general, rather than merely high or low performing students.

Further work

Additional research is required to further validate the use of the AFS and WFS given that the present study is the only piece of research to date to utilise these measures.

Similar to past research (for example Voelkel and Mello 2014), the present study utilised a single written assignment to assess expectations and experiences of feedback quality. It would be beneficial to investigate student experiences of audio and written feedback on different types of assignments (such as group and individual presentations, practical research projects and reflexive accounts) to investigate whether the experience of feedback (audio and written) is influenced by the emphasis on micro, middle and global level feedback comments (Stern and Solomon 2006) within different forms of assessment. Furthermore, future research should qualitatively explore the experiences of students at differing levels of undergraduate study to assess whether they are more or less positive about audio feedback than first years (Jones et al. 2012; Rodway-Dyer et al. 2011).

Conclusion

The present study has contributed to the literature base within this area in providing a quantitative analysis to compare expectations and experiences of audio versus written

feedback within a group of first year university students. Although expectations of audio feedback were not as high as expectations for written feedback, the findings suggest that the use of audio feedback will not negatively affect student evaluations. Thus, the findings imply that audio feedback is a useful tool for providing feedback to students despite their initial scepticism of this technology.

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Table 1. Number of participants taking part in each stage of the project by condition

	AFS		WFS	
	n	*N*	*n*	*N*
Time-points 1 and 2	32	-	26	-
Time-point 1 only	74	106	86	112
Time-point 2 only	9	41	13	39

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Table 2. Mean, standard deviation and sample size for WFS and AFS at time 1 and time 2.

Variable	*n*	*M*	*SD*
AFS (Time-point 1)	106	3.40	0.95
WFS (Time-point 1)	112	3.70	0.85
AFS (Time-point 2)	41	3.38	0.82
WFS (Time-point 2)	39	3.63	0.87
Audio change score[1]	32	-0.85	1.01
Written change score[2]	26	-0.87	0.93

[1]Time-point t - Time-point 2 of audio feedback
[2]Time-point 1 - Time-point 2 of written feedback

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Table 3. Frequencies of grade boundaries for audio and written feedback conditions

Grade Boundary	Frequency	
	Written	Audio
First (>70%)	4	4
Upper second (60-69%)	12	16
Lower second (50-59%)	23	15
Third (40-49%)	0	4
Fail (<40%)	0	1