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THE USE OF SCREENCAST FEEDBACK IN UNDERGRADUATE DIGITAL DESIGN TEACHING PRACTICE

M. Green

University of Kent (UNITED KINGDOM)

Abstract

Feedback is an integral component of learning and pedagogic practice in higher education. However, it often relies on more traditional written and face-to-face methods of communication. With the current student populace being immersed in a digital society, it is important to continually evaluate whether these feedback methods remain the most appropriate and engaging for this demographic.

This paper discusses the findings of a pilot study into the use of screencast feedback on visual assessment within a digital design undergraduate curriculum. In particular, it reports on perceptions and attitudes towards both written and screencast feedback methods on a substantive design and development assessment amongst 59 undergraduate students. The findings reveal how students feel screencast feedback is more personal and more useful in their learning and development process. Furthermore, the study demonstrates how this feedback mechanism can be beneficial to any visual assessment on undergraduate digital design courses.

Keywords: digital design, pedagogy, higher education, feedback.

1   INTRODUCTION

Despite being in a technological driven society, feedback in higher education tends to rely on more traditional written and face-to-face methods, negating a deeper understanding of the current student demographic. The so-called YouTube generation, or Gen-C, which consists of 80% of millennials [1], have been immersed in a digital society since birth. Particularly, Internet streaming and short-video services have gained popularity, with figures from the U.K.s Office for Communications indicating 16 to 24 year olds are watching over 70 minutes worth of YouTube videos a day [2]. With this in mind, it is worth considering whether or not written feedback is the most suitable feedback method amongst current undergraduate students. Therefore, the aim of this study was to identify whether a screencast approach is a useful, and well received, method of providing feedback on digital design assignments.

2   LITERATURE REVIEW

The provision of written feedback, which outlines key strengths and areas for improvement in future work, is reported to be an essential feature of feedback practice in higher education [3]. However, if the feedback is too vague or the language used unclear, this can lead to student disengagement with the feedback process [4, 5, 6]. Previous scholarly work has identified dialogue to be a key element of the written feedback process [3, 4, 5, 7]. However, it has also been recognised that written feedback is often just treated as a product rather than an ongoing process [4]. Therefore, any feedback mechanism needs to embed the principle of personal dialogue if it is to be more highly valued by students [5, 8]. Furthermore, when considering art and design pedagogy, it has been reported that a blend of written, verbal and audio feedback methods can provide clearer reference points for students [7, 9, 10].

The use of audio-visual feedback has been identified as a method to more effectively engage students with the feedback process [11]. This is supported by a growing body of research into the use of online video and screencast feedback [9, 11, 12, 13, 14, 15, 16]. In addition, Pink [17] expressed that audio-visual communication offers a rich source of data, allowing the viewer to obtain greater information than purely text-based methods. With written feedback it is up to the reader to interpret meaning, allowing for misinterpretation to occur. However, with audio-visual feedback verbal expression can aid understanding. In a study with 37 undergraduate students, McCarthy [14] found screencast feedback to enhance students' learning experience. Particularly, the feedback was considered more beneficial as it provided more depth. This is supported by earlier work, which also found students to understand video comments in a more meaningful way to written feedback [18]. Furthermore, in their study of 299 undergraduate students, West and Turner [16] reported that video feedback was felt to establish a better rapport between academic and student, and was less ambiguous. Moreover, video feedback was

preferred to written feedback by almost three times as many students. This extended their earlier work, in which respondents indicated video feedback to be more motivating and more likely to enhance future work [19]. A further reported benefit to video feedback is that it encourages reflection [20], this is of particular importance in the creative industries where reflection on the process of creation is a critical component of a professional practitioners' development [7]. However, there appears to be little research into the use of screencast feedback specifically within undergraduate digital design teaching practice, and this warrants further exploration.

3   METHODOLOGY

Digital Portfolio is a 30-credit, level 5 module comprising of 4 assessments: a Design Mock-up, Prototype, Report, and Online Portfolio. Students receive 1-to-1 verbal feedback for the first two assignments in a lab critique, and written feedback for the Report and Online Portfolio. However, given the visual and interactive nature of the Online Portfolio, this assignment was selected to pilot the use of screencast feedback.

The cohort consists of 61 students, 2 of which failed to submit the Online Portfolio component leaving 59 students in the study sample. In order to increase the reliability of the results, the study sample was split into two groups. The first group (n=29) received written feedback only and acted as a control group. The second group (n=30) received screencast feedback in addition to the written feedback. Written feedback for all students was produced first and the work graded, a sample of work across all grade bands was then selected for screencast feedback, thus ensuring it was provided to students of varying academic ability.

The screencast feedback was recorded using QuickTime Player screen recorder functionality. This method was chosen as it allowed for only a section of the screen to be selected for recording. In addition, QuickTime Player produces a .mov file which can be easily played on different operating systems meaning no editing or file conversion would be required. Each screencast video started with the student's name before 'walking-through' their online portfolio submission, narrating feedback about the design and functionality. Specific issues were shown in situ, for example coding errors, and details of how these could be resolved demonstrated. Furthermore, care was taken with tone of voice, to help students view the feedback constructively [11]. It was decided not to re-record any videos where mistakes were made and subsequently corrected, for example mispronounced words, as the videos were to appear natural and not come across as rehearsed or artificial.

To obtain student feedback Google Forms was selected as it allowed question logic, the method by which questions display based on a previous answer, in a free plan. This was an integral requirement in the survey design as it would allow for different questions to be displayed to students based on the method of feedback that they obtained (i.e. written only, or written and video). In addition, it allowed for survey results to be downloaded for further analysis. The survey questions were designed to not only ascertain students' perception of how useful the feedback was to them, but also whether or not the feedback felt personal and was actionable. Furthermore, open-ended questions sought to gain insight as to how students learnt from the feedback, and whether they had any further comments concerning the feedback methods. Finally, the survey was designed to collect data anonymously, with no identifiable questioning, therefore, encouraging students to be as honest as possible.

Written and screencast feedback was uploaded to the students' Virtual Learning Environment (VLE) and students were emailed via mailing list to indicate marks and feedback had been released. The email also outlined the nature of the pilot study and encouraged participation in the survey. This yielded little response and was subsequently followed up through an in-class announcement and personalised emails to each student. As a result, the response rate increased by almost 35% within a 24-hour period. The survey remained open for a period of 14 days to enable as much feedback to be captured as possible.

Following the closure of the survey, Likert data was analysed to identify the most frequent responses. Where appropriate, the Chi-Square Test was used to ascertain statistical significance. Where frequencies fell below 5, due to the small sample size, the Fisher's Exact Test was used as an alternative measure. A thematic analysis [21] of open-ended responses to learning experience and feedback methods was also conducted.

4   FINDINGS & DISCUSSION

The online survey obtained a response rate of 57.6% (n=34); of these, 41.2% (n=14) were from those who obtained both written and screencast feedback. However, it is important to note that whilst feedback was provided for 59 students, VLE statistics indicate only 49 students accessed the feedback activity. Therefore, when considering just those who accessed the feedback, rather than all those eligible, the response rate is 69.4%. The majority of those who responded to the survey obtained an upper second class mark (79.4%, n=27), which aligns with the mark distribution which saw 66.1% (n=39) of students obtain this classification. There were no responses from those who obtained a first or third class mark, however, these accounted for less than 10% (n=5) of the overall mark distribution. It should be noted that one student in the control group indicated that their work was marked in the 0-39 range. However, no work obtained such a grade. This could indicate that the mark may not be clear to the student, that there is a limitation in the survey design, or simply a lack of attention in responding.

4.1   Perceptions of Written Feedback

The control and screencast groups expressed varying views with regards to the written feedback, see Figures 1 and 2. In the control group, 70% (n=14) or more of students indicated agreement (agree or strongly agree) with the statements pertaining to the written feedback being useful, allowing them to understand their performance, and being actionable for future assignments. However, the screencast group's level of agreement in these areas scored lower, 57.1-64.2% (n=8 to 9). Despite this, the Fisher's Exact test shows that the difference is not statistically significant in any of these three statement areas (p=.458 to p=.704). In contrast, 78.6% (n=11) of students in the screencast group expressed agreement (agree or strongly agree) that the written feedback helped them to see where they could have improved, compared to just 65% (n=13) of students in the control group. Although this is also not statistically significant (p=.467), it suggests that the written feedback alone is not sufficient in explaining where the work could be enhanced. Furthermore, even though the question was asking students to just focus on the written feedback, it could suggest that the written feedback gains clarity as to the points of improvement when considered in conjunction with the screencast feedback.

Stronger agreement was found between both the control and screencast groups with regards to the statement "the written feedback felt personal to me". In both groups, just over one-third of students felt the written feedback was personal. A lack of feeling as though the feedback is personal to the individual concerned may influence overall perception of how useful and actionable the feedback is. However, the findings presented here would not suggest this to be the case for the study sample, rather students are more neutral rather than strongly opposed to the statement. In addition, low levels of agreement may also be an indicator as to why some students did not engage with the feedback activity via the VLE. If they have previously found feedback to be impersonal they may now be disengaged from the feedback dialogue.

Examining the open-ended responses from the control group, themes of *usefulness*, *significance* and *actionability* emerge. Particularly, students noted that the feedback was useful as it highlighted the strengths and weaknesses in their work, was clear and direct. However, there is a desire for the feedback to have greater breadth and depth, particularly with regards to the commentary on how the work could be improved. In addition, one student indicated that they would appreciate greater justification for the mark awarded; providing a clearer connection to the marking/assessment criteria in the feedback as indicated by Weaver [6] may prove beneficial. Despite the desire for a richer narrative, students expressed that they would be able to action the points made when developing their work in the future.
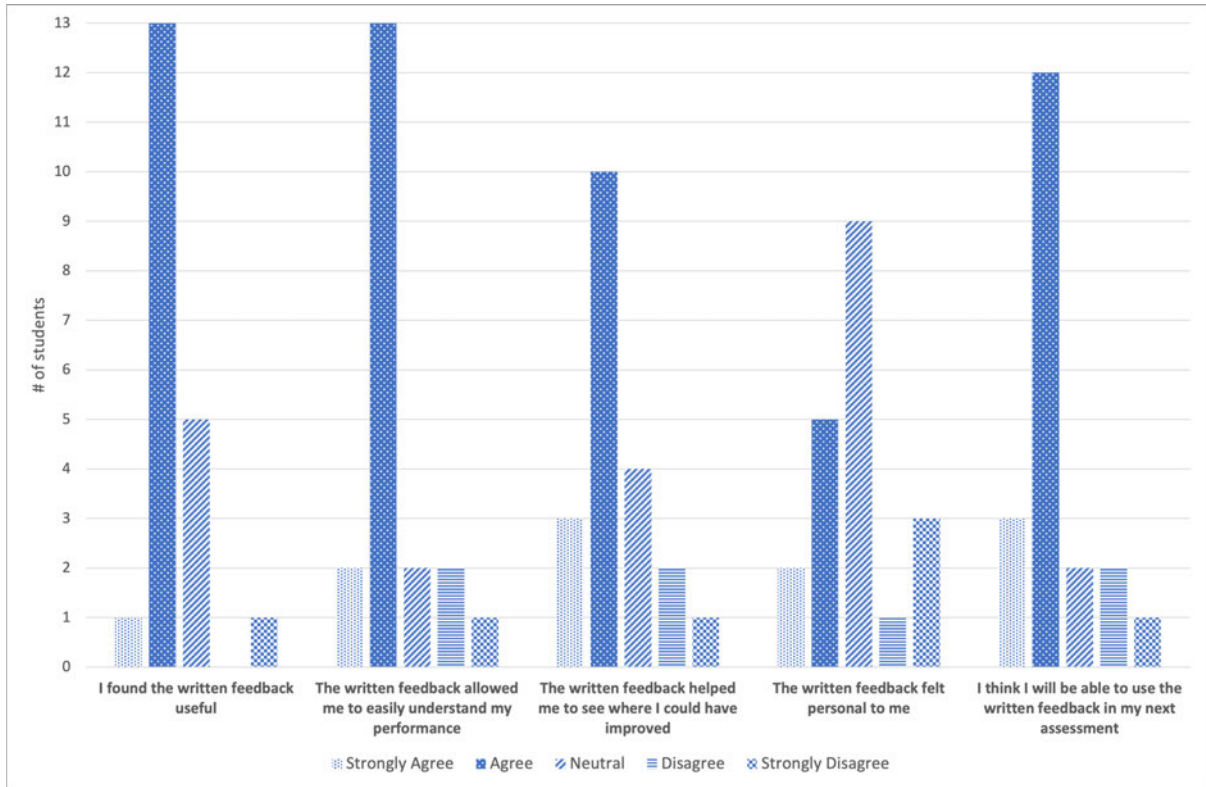
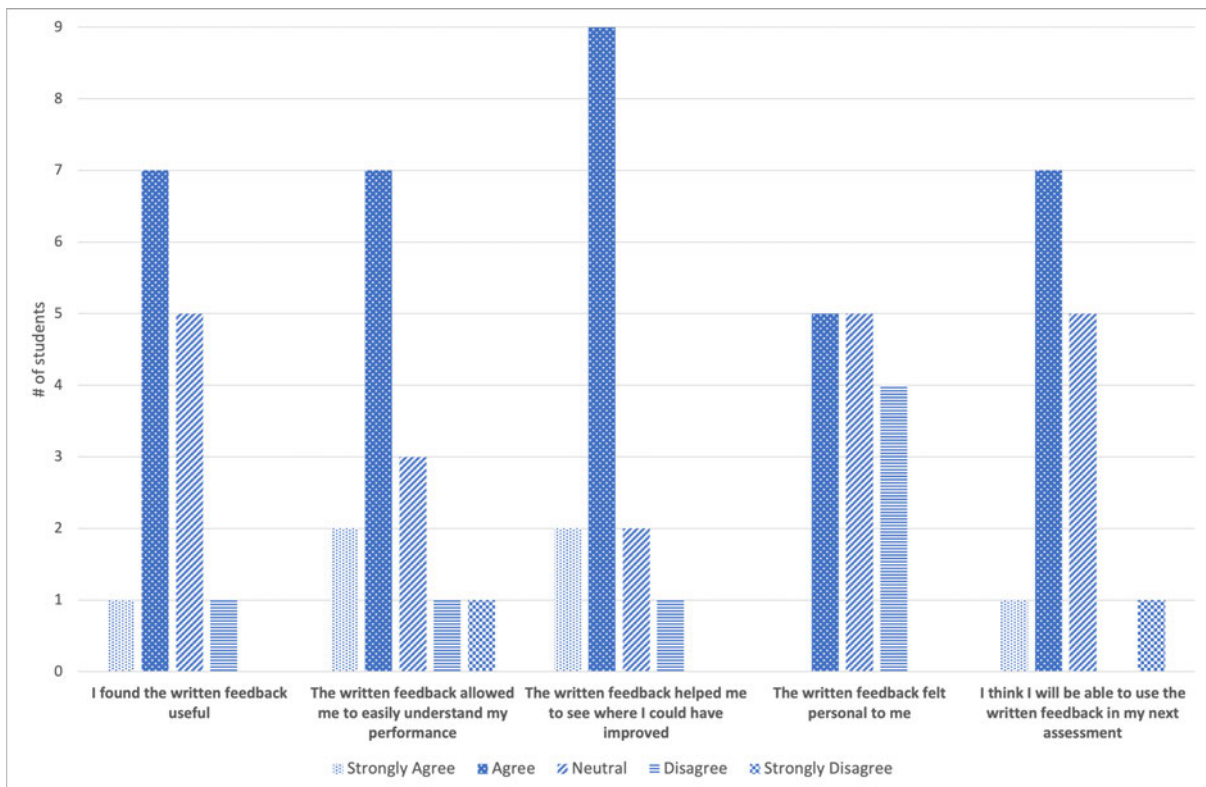*Figure 1. Control group students' level of agreement with statements concerning written feedback.*

Figure 2. Screencast group students' level of agreement with statements concerning written feedback.

4.2 Perceptions of Screencast Feedback

The 30 screencast videos had a total duration of 2 hours 8 minutes, with a mean video duration of 4 minutes 16 seconds. In contrast to the findings of McCarthy [14], there was no perceived impact to efficiency in providing screencast feedback compared to written feedback. In addition, verbally expressing ideas and concepts concerning a visual and interactive piece of work was found to be easier than explaining them in written format. As a result, more information was able to be communicated in a shorter period of time.

From the 30 students in the screencast group, just under half of them (n=14) responded to the survey. Of these, at least 85.7% (n=12) indicated agreement (agree or strongly agree) in all statement areas, see Figure 3. This represents an increase in agreement across all statement areas when compared to this group's responses to written feedback. In addition, 85.7% (n=12) of students indicated that they found the screencast feedback more useful than the written feedback (Figure 4), with 2 students expressing a neutral rather than negative view. This suggests that screencast feedback delivers higher quality information about student work and performance, which are recognised as principles of good feedback practice [22]. Of particular note is the level of agreement to the statement concerning the feedback feeling personal which saw a 57.1% increase in agreement. Chi-Square testing reveals this to be a statistically significant difference (X2 (1, N=28)=9.96, p=.002). This is further supported by all students indicating agreement (agree or strongly agree) that the screencast feedback felt more personal to them than the written feedback, see Figure 4. This supports the findings of McCarthy [14] who reported screencast feedback to be perceived as more personal. Moreover, the theme of *rapport* was also present in the open-ended responses from the screencast feedback group. It was found that it was not only the natural dialogue that made the screencast feedback feel more personal, but also the nature of seeing the work being interacted with during the assessment process. This finding supports the work of Turner and West [19] who concluded that online video feedback enhances the rapport between academic and student.

In total, 5 themes were identified from the open-ended responses from the screencast feedback group. The theme of *visually communicative* was identified alongside *rapport*, and the three themes already identified in the control group responses (see section 4.1). Whilst for the control group students identified a lack of significance, or depth, in the comments, for the screencast group there was a feeling that the videos, both as standalone forms of feedback and in conjunction with the written feedback, provided greater value. Furthermore, students indicated that the visual nature of the screencast helped to communicate the feedback more effectively, allowing them to see the problems, therefore, avoiding any misinterpretation of the written comments. Importantly, one student noted that screencast feedback was particularly useful to them as they suffer from Dyslexia, so the video made understanding the feedback easier. Given the number of students on creative programmes with varying learning needs, including Dyslexia, screencast feedback could be a valuable learning tool which enhances inclusion for these individuals.

Interestingly, the student who indicated disagreement in finding the video feedback useful, see Figure 3, indicated strong agreement to finding the written feedback useful and strongly agreed that the video feedback was more useful than the written feedback. This anomaly could be the result of statement (mis)interpretation as it was not elaborated on in their comments. Alternatively, there may be facets of both feedback mechanisms that they like and dislike, but when viewing both methods holistically preferred screencast feedback.

These findings support those of West and Turner [16] who found video to be preferred over written feedback amongst first year undergraduate students. Moreover, the current study indicates the same is true for second year students. However, it is important to note that this is the first-time students in the present study have been provided with screencast feedback on their course. Therefore, there may be an element of the novelty effect present. Continuing to use screencast feedback to see how it is perceived over a longer period of time would help to address this.
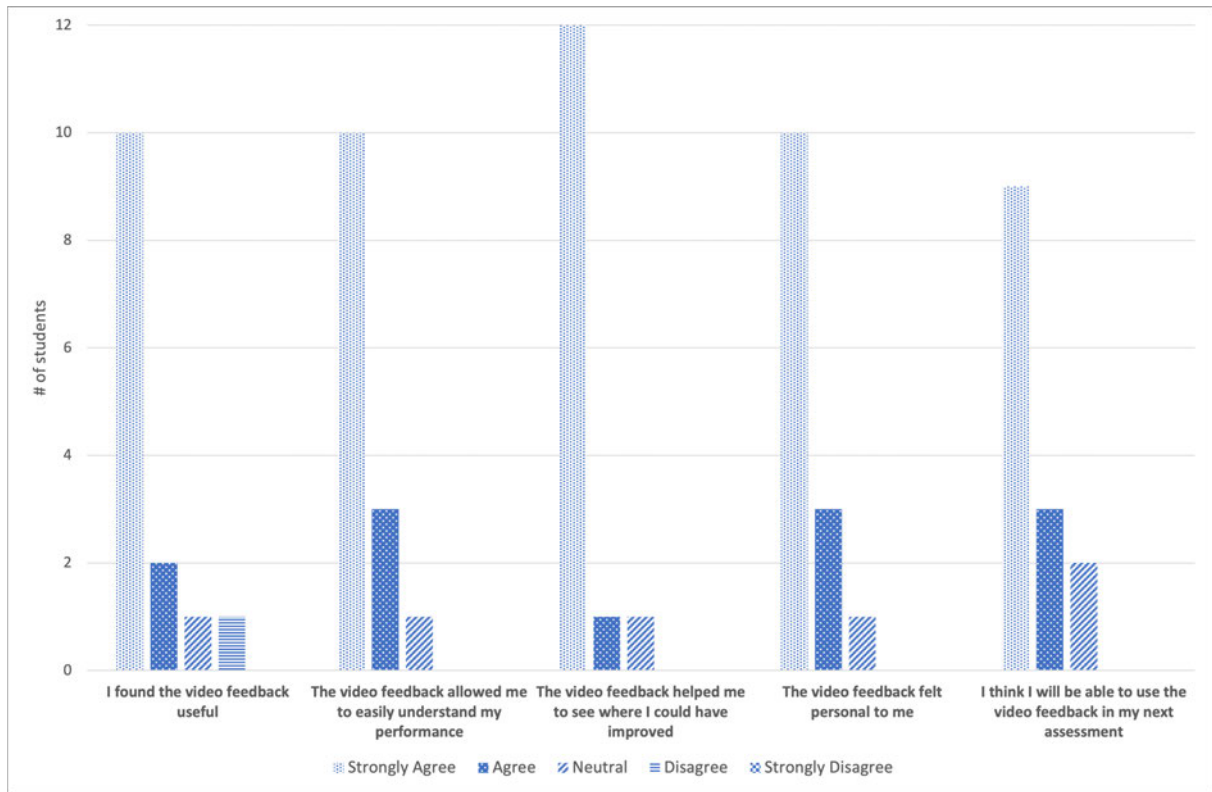
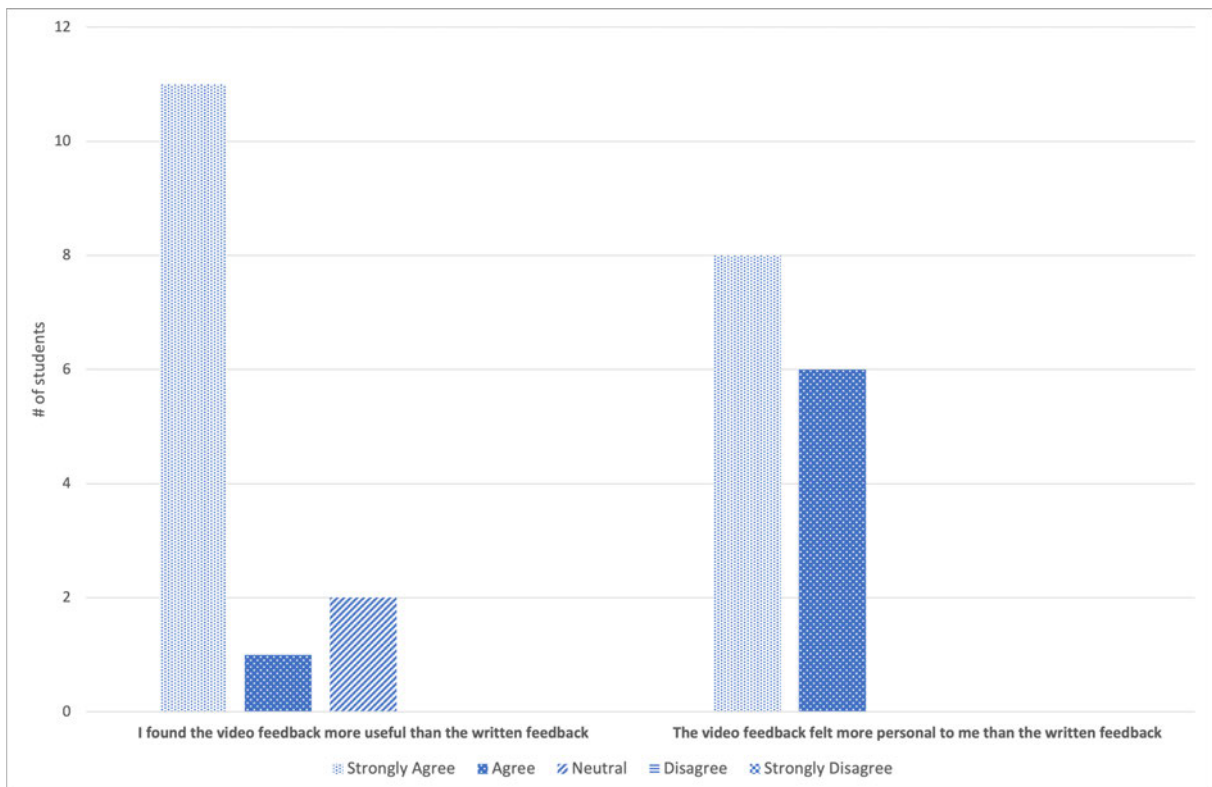*Figure 3. Students' level of agreement with statements concerning screencast feedback.*

Figure 4. Responses to statements comparing written to screencast feedback.

5   CONCLUSIONS

This pilot study has identified screencast feedback to be a beneficial method of providing feedback for digital design projects. Compared to written feedback, screencast feedback was felt to be more significant and useful. Particularly, students highlight that it adds clarity to the feedback and brought a personal dimension to the assessment process, offering a richer feedback experience. As a result, screencast feedback can assist students in developing an analytical eye through being able to view feedback in context and better understand how their work could be enhanced, which is integral to their development as a digital design practitioner. Given the diverse student body it may be appropriate to ascertain which method of feedback a student would like, offering a tailored solution rather than a one-size fits all approach. Importantly, the act of recording screencast feedback does not appear to impact negatively on time and is an efficient feedback method, allowing for a greater degree of information to be imparted in a short period of time.

Given no students responded who obtained third and first class marks it is difficult to ascertain whether this feedback method is as highly valued for those at the far ends of the grading system. Therefore, further investigation with a larger sample size is required for validation of the results presented. Nonetheless, this pilot presents the potential for larger scale screencast feedback in undergraduate digital design programmes.

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