AUTHENTIC VIDEO FEEDBACK FOR PRODUCT DESIGN STUDENTS

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ABSTRACT
Since the COVID-19 pandemic and due to living in a digital environment, video feedback has become more prominent in higher education. However, it has not been as well adopted on product design courses due to the subjective nature of creative disciplines, and the unique challenges this constitutes in making it an authentic experience for students. This paper takes an influential framework for creating authentic feedback experiences and uses it to design a video feedback exercise for product design students. The framework presents five criteria relating to Realism, Cognitive Challenge, Affective Challenge, Evaluative Judgment, and Enacting feedback. From each of these criteria, the authors derive a set of propositions for video feedback and translate them into design features including: the use of discursive language, proportionate discussion to assessment criteria, the use of sensitive and empathic language, making visual reference to student work onscreen, and explanations of constructive actions. The video feedback exercise was then delivered to a cohort of twenty-eight, final year, undergraduate product design students. Both quantitative and qualitative datasets were collected through Likert scale and free-text questions in a survey completed by all twenty-eight, students and semi-structured interviews with five students. A statistical and thematic analysis developed an understanding of the video feedback exercise as an authentic feedback experience, highlighting some of its strengths and limitations as a teaching tool. The paper concludes with several recommendations to improve and develop the design of the video feedback exercise.

Keywords: Authentic feedback, video feedback

1 INTRODUCTION
Video feedback has become more common place in a post-digital environment, with many seeing it as a necessity within higher level education due to the popularisation of hybridised courses [1] [2]. However, there are few examples of this type of feedback delivery on creative courses [3]. An explanation for this may be that creative courses face challenges when it comes to video feedback due to the subjective nature of creative disciplines [3].
Another explanation that the authors of this paper offer, is that it may be due to the difficulties in using video feedback to deliver an authentic experience. Authentic feedback is a growing field of research within pedagogy, that posits the importance of embedding feedback practices that replicate those used in the broader professions of the subject [4]. The belief behind this pursuit is that delivering authentic feedback 'creates a measurable connection between the academic context of the subject and the practical application of the subject in a professional context, improving lifelong learning skills of students' [5].
Through assimilating concepts within literature addressing design pedagogies and authentic feedback, the authors of this paper have developed a video feedback exercise to try and create a method that embeds authenticity in the delivery of this type of feedback.

2 AUTHENTIC FEEDBACK AND DESIGN PEDAGOGIES
2.1 A Framework for Authentic Feedback
Dawson et al. [4] developed an influential framework for authentic feedback that can be used to embed authenticity into processes and practices involving feedback. The framework has five criteria:
- Realism: that the feedback is authentic to, and represents, the reality of the life graduates of the discipline will face and prepares the students accordingly.

- Cognitive Challenge: that the feedback supports engagement with high order thinking, problem-solving, and decision-making.
- Affective Challenge: that the feedback promotes engagement with challenging and potentially critical responses to work, recognising the occurrence of such practices in the workplace.
- Evaluative Judgement: that the feedback supports the development of capabilities to make decisions about the quality of your own, or other people's work.
- Enactment of feedback: that the feedback is engaged with constructively to support development of either the object of feedback, future approaches to work, or both.

The following sections will relate each of these criteria to design pedagogies and describe how the authors have used this assimilation to guide the design of video feedback creation and delivery.

2.2 Relating this Framework to Design Pedagogies

When considering Dawson's [4] first criteria for authenticity, 'Realism', there is much literature in the field of Design Pedagogy that examines the practice of design and posits understandings of its nature. Notably, Orr and Shreeve [6] suggest that design is a community of practice where standards of quality are arrived at through discussion. This posts various challenges when trying to embed design features into a video feedback exercise, as the assessor may be an individual reading from a script, as opposed to entering a discussion with a community. However, there are characteristics belonging to more discursive language that can be employed to emulate the type of conversation that occurs in a discussion. For example, Henderson and Philips [7], in their recommendations for creating video feedback within higher education, suggest the use of timely and plain language, due to its informal and discursive nature, and subsequent ability to project a more supportive and caring tone.

With respect to embedding design features in video feedback that look to support Dawson's [4] second criteria for authenticity, 'Cognitive Challenge', it is logical to consider methods that relate critique to specific assessment criteria, and that emphasise the need to use feedback as a means to consider alternative approaches to future work that may better meet the assessment criteria. This sentiment is also echoed by Henderson and Philips [7] in their recommendation that video feedback should be proportionate to criteria and phrased as an ongoing dialogue rather than an end point.

Concerning Dawson's [4] third and fourth criteria for authenticity, 'Affective Challenge' and 'Evaluative Judgement', it is reasonable to consider empathic approaches to feedback that invite students to acknowledge and take ownership of criticisms about their work, providing them with an accessible means to see why they have achieved their awarded grade and rationalise why others may have achieved the grades they have. Brown and Fridman [3] reference many pedagogies that align with this reasoning, in their assimilated list of recommendations for the creation of video feedback. They include Jones et al.'s [8] assertion that an assessor should be in the right frame of mind before recording feedback, and Cruikshank's [9] suggestion that styes familiar to students should be encompassed. They also highlight Hyde's [10], Williams and Askland's [11], and Orlando's [12] recommendations of providing visual examples where possible when creating content for video feedback.

Finally, when considering the design of video feedback to meet Dawson's [4] final criteria for authenticity, 'Enactment of Feedback', parallels can be drawn to his second criterion 'Cognitive Feedback'. It is the development of an understanding of how better to meet assessment criteria that will provide students with the means to act on feedback. Therefore, to build on the previous suggestion that feedback should be proportionate to criteria and phrased as an ongoing dialogue, it is also logical to suggest that this phrasing should also be constructive and explicitly reference action that can be taken the next time students are creating work for assessment.

3   DESIGNING AND DELIVERING THE VIDEO FEEDBACK

The following table sets out the basic design for the video feedback exercise as derived from the previous section's literature review. The 'Theme' column references the criteria in Dawson's [4] feedback framework, the 'Proposition' column references the consequent intention for the students' experience, and the 'Design' column references the subsequent feature embedded in the video feedback exercise.

Table 1. Video Feedback Design

Theme	Proposition	Design
Realism	Students should associate the exercise with the experiences of practicing designers.	Set a discursive tone through using accessible language common in professional practice.
Cognitive Challenge	The exercise should encourage problem solving and decision making.	The length of discussion should be proportionate to the weightings of assessment criteria. Use phrases to indicate that feedback is an ongoing dialogue.
Affective Challenge	The exercise should support engagement with challenging and critical responses to work.	Sensitive and empathic language should be used when discussing critical responses to the student's work.
Evaluative Judgment	The exercise should help students to judge the quality of their own work and others.	An assessment of quality should be made against each criterion and referenced visually through indicating the relevant aspect(s) of the student's work onscreen.
Enactment of Feedback	The exercise should develop students' future approaches to their work.	An explanation of constructive action should follow each point of criticism.

To achieve each of these design features, onscreen recordings were created using Panopto [13], capturing the student's assessed work with a semi-scripted voice over delivered by the assessor. The cursor was used to reference the aspect(s) of the student's work being discussed onscreen. For consistency in approach, the same assessor constructed all the video feedback in this study. The assessed work submitted by the students was for the UK's Royal Society of the Arts competition briefs [14]. The video feedback exercise was delivered to a cohort of twenty-eight, final year, undergraduate product design students. Following the exercise, the students were asked to complete a survey to gather data on their perception of it. A survey is a well-established method for collecting data on social characteristics such as those present during feedback exercises; delivered with the intention of impacting future behaviour [15]. The survey included five closed questions to address each of the criteria in Dawson's [4] authentic feedback framework. They were phrased as 'to what extent' style questions, accompanied with a Likert scale response option of one to five, with one meaning 'not at all' and five meaning 'completely.' For example, question number one read: 'To what extent do you think video feedback is authentic to the design discipline? By authentic, we mean representative of experiences you may have as a practicing designer.' As well as this quantitative data, qualitative data was also collected through the survey with a final, free-text question, asking the students to describe their experience of the video feedback exercise, inviting both positive and negative points of reflection. The benefit of using a survey such as this meant that student perception could be captured in a consistent way across the entire cohort, allowing analysis of subjective opinion against the criteria used to design the video feedback exercise. However, limitations of this approach include 'dishonest or unanswered questions, issues with understanding and interpretation, and respondent bias' [16]. Therefore, to complement the survey, semi-structured interviews were conducted with five students, using the topics within the criteria of Dawson's [4] authentic feedback framework as prompts for discussion. A thematic analysis was carried out on the free-text question of the survey and transcriptions of the interviews. Deductive analysis such as this is appropriate where conceptual frameworks are adopted, and a series of propositions are used to test effectiveness [17] [18]. The combination of these data sets and their analysis will provide insight into the student perception of the exercise's authenticity, and how and why they hold these perceptions. This will develop an understanding of the exercise's effectiveness in providing an authentic feedback experience and suggest steps that may be taken to improve its delivery.

4   FINDINGS AND DISCUSSION

4.1 Realism

As stated previously, in testing the first proposition of the video feedback design, students were asked to what extent they believed the exercise was authentic to the design discipline. The mean score (m) across the cohort was 3.86, with a standard deviation (SD) of 1.19. This indicates that a small majority of students agreed that video feedback exercise is authentic to the design discipline. However, the high degree of variability across the cohort demonstrates that there is a considerable number of students who do not believe video feedback is authentic to the design discipline.

When looking to the qualitative dataset, an emergent theme in response to this proposition was that for it to feel more authentic, the feedback should include more comparison to other examples of work submitted. All five interview participants discussed how they believed that the culture of a design studio included discussion around the comparison of multiple concepts, and that "rarely are ideas talked about in isolation of others."

4.2 Cognitive Challenge

In testing the second proposition, students were asked to what extent they believed the exercise encouraged problem solving and decision making. The results of the statistical analysis were m=4.29 and SD=0.52. This indicates that most students agreed that the video feedback exercise encouraged them to solve problems and make decisions.

When looking at the qualitative dataset, emergent themes in responses to this proposition included the usefulness in having the ability to rewatch the video feedback, and how this can act as a prompt to thinking through problems and making decisions when creating future work for submission. One student described "I always have trouble with the communication bit, and my video talked through how I could take better photographs that explain how someone would use my product. I can't remember what it said exactly, but I am going to watch it again before I decide what to do next time." Similar statements were made across the interviews, and in six of the responses to the free-text question in the survey.

4.3 Affective Challenge

In testing the third proposition, students were asked to what extent they believed the exercise supported engagement with challenging and critical responses to work. The results of the statistical analysis were m=4.50 and SD=0.50. This indicates that most students agreed that the video feedback exercise supported their engagement with challenging and critical responses to their work.

When looking at the qualitative dataset, there are several emergent themes in discussion that contradict this finding. For example, one student proclaimed that "If [I had made] a big mistake, or overlooked something, I could say why face-to-face. With a video, you don't get a chance to explain yourself." Similar remarks were made in the other interviews. Although this is something we offered alongside the video feedback, this response is indicative of a need to emphasise that this is not the only opportunity for feedback, and that discussion around the critique can be followed up face-to-face should the student feel it necessary. Although this theme was apparent in the semi-structured interviews, it did not feature in the free-text responses to the survey question.

4.4 Evaluative Judgement

In testing the fourth proposition, students were asked to what extent they believed the exercise helped them to judge the quality of their own work and others. The results of the statistical analysis were m=4.61 and SD=0.49. This indicates that most students agreed that the video feedback exercise helped them to judge the quality of their own work and others.

When looking at the qualitative data set, emergent themes in discussion supported this finding. Similarly to the proposition for the theme 'Cognitive Challenge,' students re-emphasised the usefulness in having the ability to rewatch the video feedback. One student pointed out "Sometimes when you chat with a teacher, you forget what they said." Similar remarks were made in the other interviews, and as stated previously, in six of the responses to the free-text question in the survey.

4.5 Enactment of Feedback

Finally, in testing the fifth proposition, students were asked to what extent they believed the exercise helped them to develop future approaches to work. The results of the statistical analysis were m=4.75

and SD=0.43. This indicates that most of the students agreed that the video feedback exercise helped them to develop future approaches to work.

When looking at the qualitative dataset, emergent themes were similarly supportive of this proposition. Many students across both the interviews and free-text question included in the survey referenced the specific design feature derived from the proposition. For example, one student wrote "I liked that every time you pointed out something that I didn't do well in, you told me what I could do next time." Similar reference to the constructive actions suggested in the video feedback exercises were made by all interviewees and seven other responses to the free-text question in the survey.

5   CONCLUSIONS

This study provides a meaningful contribution to understanding video feedback, more specifically, the perception that the cohort of product design students had of it with respect to its ability of delivering an authentic feedback experience. When considering the quantitative dataset across all propositions that derive an authentic feedback exercise, we can see that although not immediately identifiable as authentic to the discipline (Realism), it was unanimously perceived as authentic for Cognitive and Affective Challenge, Evaluative Feedback and Enactment of Feedback.

When considering the qualitative dataset across all propositions that derive an authentic feedback experience, further support was discovered in its perception as authentic to Cognitive Challenge, Evaluative Feedback and Enactment of Feedback.

However, despite this positive perception of the video feedback exercise, there are several considerations that can be made in bolstering its perception as authentic to Realism and Affective Challenge. Several observations were made that suggested concepts being discussed in isolation was not reflective of typical disciplinary practices. Several observations were also made that referenced the benefits of face-to-face feedback to provide an opportunity to respond to critique. Taking these findings into consideration, the following recommendations are designed to develop the video feedback exercise in the hopes of strengthening its perception as authentic to Realism and Affective Challenge:

- Include examples of previous cohorts work in the video, to draw comparisons between the work the student has submitted.
- Record group feedback with multiple assessors, that compare various pieces of work submitted by the students.
- Include reference to other forms of feedback that will be delivered, highlighting the opportunity for further face-to-face discussion around the video feedback.

Further iterations of this research project will include these modifications to the video feedback design and seek to include greater sample sizes of level six undergraduate product design students, from a wider range of cohorts belonging to a wider range of national and international higher education institutions.

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