SHORT-PAPER

Propaganda or Exposure? A Video-Based Group Assessment Exploring Ethics in a Fictional Technological Society

OLGA PETROVSKA, Swansea University, Swansea, West Glamorgan, Wales, U.K.

CASEY HOPKINS, Swansea University, Swansea, West Glamorgan, Wales, U.K.

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Olga Petrovska
Swansea University
Swansea, United Kingdom
olga.petrovska@swansea.ac.uk

Casey Hopkins
Swansea University
Swansea, Swansea, United Kingdom
c.l.hopkins@swansea.ac.uk

Abstract

Motivated by the increasing societal impact of technology and the emphasis on ethics within computing education, this paper presents the development and evaluation of a video-based assessment designed to improve students' understanding of legal, social, ethical, and professional issues while simultaneously developing soft skills such as teamwork, time management, researching information, and communication. Using a mixed-method approach, we explore the impact of this assessment on students' self-reported skill development across both their understanding of ethical issues and soft skills. Findings indicate that the video-based assessment was well received by students and supported not only the understanding of ethical concepts but also improved collaboration and communication skills.

CCS Concepts

• **Social and professional topics** → **Computing education**; **Student assessment**.

Keywords

video, student assessment, ethics, hidden curriculum, soft skills, software engineering, education

1 Introduction

As technology and digitalisation become deeply integrated into everyday life, incidents with significant negative societal impact (e.g. 2013 Snowden Revelations, 2016 and 2020 US elections, 2018 Cambridge Analytica, 2000-2020 UK Post Office Horizon Scandal), have been exposed. As a result, ethics has emerged as a critical issue, prompting scrutiny of the professionalism of those working in computing [2, 15].

Since its initial publication in 1968, the ACM Computer Science Curricula has placed growing emphasis on ethics, which is now recognised as a core competency. In the latest guidelines, the interweaving of "Society, Ethics, and the Profession" (SEP) across all

knowledge areas is explicitly highlighted in the most recent guidelines *'to make them unavoidable in a curriculum'* and *'highlight their importance'* [12].

Whilst several studies have explored the pedagogies utilised to teach ethics [3, 6], many have highlighted the difficulty of evaluating students' understanding of ethics.

In addition to the SEP knowledge required within the ACM guidelines, there is also a requirement for the development of Professional Dispositions (otherwise known as soft skills).

This paper discusses the motivation, implementation and evaluation of a video-based assessment that aimed to support both the understanding of legal, social, ethical, and professional issues (LESPi) and the development of transferable skills such as teamwork, time management, digital literacy, and communication.

2 Background

Whilst UK academics perceive ethics to be an important topic to teach [14], there are a number of challenges documented when it comes to incorporating it into CS courses. One challenge that is mentioned recurrently, is the lack of guidance on how to teach and assess the topic effectively, as well as measuring the students' development of understanding of ethics [3, 14].

The use of videos have been suggested as an effective resource for teaching ethics across several other subject areas. Itani [10] investigated the use of Hollywood films and documentaries to teach ethics in engineering. Surprisingly, students perceived the Hollywood style movies to be more effective than documentaries or hypothetical videos. Producing videos has also been explored and reported as an effective method of not only developing ethical knowledge but also interest [18]. Furthermore, Graul et al. [9] reported how the creation of a video for an assessment also helped to develop other skills that students felt would be useful either in other classes, or in their personal or professional lives.

Whilst a range of pedagogies are seemingly employed to teach ethics within computing, the majority focus on discussions, lectures and written assignments with very few utilising video [3]: Applin [1] discuss how they encouraged students to watch video and films before writing a reflective journal on when they encountered ethical decisions being made. Goldsmith and Mattei [8] describes an assignment in which students select and watch films including AI content, before writing an ethical analysis of the technology; Mihail et al. [13] utilised short videos as supplementary material with blog posts, in class discussions and creative writing as assessments; Whereas Turk and Wiley [16] utilised the PBS video High Stakes in Cyberspace in the very first lecture as a method to motivate students to participate in the course. Whilst these courses use video, they are used as supplementary teaching material rather than a means of assessment.

Video-based assignments are not new to computing. The creation of instructional videos has been documented, where students learn and revise concepts in the process of teaching others [5, 7, 17]. Zarb and BirtlesKelman [19] conducted a comparative analysis of presentations versus video creation as assessment methods in four modules within the School of Computing Science and Digital Media and the School of Creative and Cultural Business. The video-based assessments were perceived by students as being less stressful and more enjoyable.

A team-based, video assessment aims to develop several soft skills required for computing professionals, whilst also allowing students to think creatively and critically by developing scenarios in which ethics must be considered. This method of assessment could be viewed as new to the field of teaching ethics within CS.

3 Context & Motivation

This study was conducted within the Applied Software Engineering programme in Wales. Students are employed and attend university for one day a week during term time. Similar to the ACM guidelines, the programme's framework and accrediting body, together with the employers involved with the programme, insist that as well as developing technical skills, the students must also develop their understanding of ethics and the impact of their actions, alongside soft transferable skills such as teamwork and presentation skills, to become well-rounded professionals.

Considering this, it was decided to create an assignment for first-year undergraduate students ($n = 13$) that develops these skills in preparation for their later academic and professional lives. This forms part of the assessment for the stand-alone compulsory Professional Issues module. By doing this in first year, the students develop key skills required for their workplace early on in the programme, and also build skills needed for later in the programme. This assignment replaces a previous essay-based assignment where students were requested to research a topic and critically reflect on it. This resulted in a more diverse method of assessment within the module: this assignment (weighted 15%), a group debate (15%), an individual short report (10%), and an end-term test (60%).

3.1 Assessment Overview

A 5-week-long video-based group assessment was assigned requiring students to produce a news reel consisting of 4 one-minute videos linked by a common theme. These themes included various social, ethical, or professional issues related to technology in a fictional technologically developed country plagued by issues stemming from technology misuse. Students could choose from a list of suggested issues (e.g. e-waste, AI in healthcare) or come up with their own relevant topics. This was done to promote engagement, as the students could choose topics that were most interesting to them. Moreover, it was up to the students whether they would create a reel exposing the underlying issues, or ostensibly supporting the government propaganda.

The students were divided into groups of 4 or 5, which were formed by the lecturer to ensure a skill balance. Groups were required to meet at least once a week during compulsory lab sessions. At the end of each week, the group's appointed secretary, a rotating role, submitted meeting minutes and a group contribution report.

This served several purposes: to ensure accountability, assist with marking allocation, and help avoid work overload towards the final deadline.

The assessment brief provided a suggested plan for video production throughout the 5 weeks. Each student had to act as either a director of a one-minute video, or a news anchor who linked all short videos through a coherent narrative. The expectation was that everyone worked together, finding relevant information and digital resources, and agreeing on the style of the videos to ensure consistency throughout the reel.

Considering the wide availability of Generative AI (GenAI), its use was permitted to help students research, build a narrative, and generate digital content. However, the requirement was that use of generated content in the final video should not exceed 25%. With the wisdom of hindsight, the instructor should have avoided setting this limit due to difficulty of determining the exact percentage in this case.

4 Methodology

This section details the data collection and analysis procedures. This study was approved by the Swansea University Science and Engineering Ethics Committee on June 5, 2025 (Ref. no. 2 2025 13533 13022).

4.1 Data Collection Methods

The study used a mixed-methods approach, combining an online survey ($n = 13$), follow-up interviews ($n = 3$), and analysis of student-produced video artefacts.

4.1.1 Survey. A short optional survey was distributed to the entire cohort of students taking a Professional Issues module. The cohort size was rather small ($n = 18$). The survey consisted of one open-ended question on skill development and several Likert-scale questions asking students to self-report their skill levels pre and post assessment.

The skill acquisition level follows the Dreyfus model [4]: *novice* (N), *advanced beginner* (AB) *competent* (C), *proficient* (P), and *expert* (E). These skills included *video editing* (VE), *researching information* (RI), *teamwork* (TW), *minute taking* (MT), and *time management* (TM). These skills were a more fine-grained version of transferable skills that this module aims to develop (i.e., video editing and experience of team working). Additionally, since the module aims to teach students about LESPi in Software Engineering, they were also asked whether their understanding of these issues has developed as a result of this assignment. Finally, students were also asked whether they would be interested in a follow-up interview.

The survey was analysed using a combination of inductive thematic analysis for qualitative data together with quantitative methods for numeric data. The analysis took place after the module was completed, so that there was no risk of negative impact on students assessment marks.

4.1.2 Interviews. Following the survey, semi-structured 30-min long interviews were conducted with those students who expressed interest in a follow-up. The purpose of the interviews was to obtain a deeper insight into students' 1) experiences within this assignment, specifically working as a group, and 2) perceived skill development.

Table 1: Self-reported skill development pre and post assignment per student

id	VE_{pre}	VE_{post}	RI_{pre}	RI_{post}	TW_{pre}	TW_{post}	MT_{pre}	MT_{post}	TM_{pre}	TM_{post}
S1	N	AB	N	N	C	P	N	C	C	P
S2	N	N	C	P	P	P	AB	C	AB	C
S3	C	C	AB	C	P	P	AB	C	P	P
S4	C	C	P	P	C	C	AB	C	C	C
S5	N	AB	C	C	C	C	N	AB	C	C
S6	P	P	P	P	E	E	C	C	AB	AB
S7	AB	AB	AB	AB	AB	C	AB	AB	AB	AB
S8	E	E	AB	C	P	P	AB	C	P	P
S9	AB	C	C	C	AB	P	C	C	C	C
S10	P	P	C	P	E	E	AB	C	P	P
S11	N	AB	C	C	C	C	N	N	P	P
S12	N	AB	C	C	C	C	C	C	C	C
S13	N	AB	C	C	P	P	P	P	P	P

The lecturer fulfilled the role of interviewer. Interviews were conducted only after all marking for the module was completed to ensure that students were not disadvantaged in any way. Qualitative data obtained via interviews was analysed using inductive thematic analysis. Both the lecturer and a second independent researcher, not involved directly in the module delivery, produced an individual codebook before collaborating to establish the themes.

4.1.3 Student-Produced Videos. Videos produced by the survey participants were analysed to identify topics that students selected, as well as to determine the 'flavour' of the videos: *propaganda* or *exposure*.

5 Results

This section presents results of the analyses described previously.

5.1 Survey

The optional survey had a completion rate of 72% ($n = 13$). Most students agreed that their understanding of LESPi in computing had largely developed as a result of this assessment ($n = 8$), with 1 neutral, 3 disagreeing and 1 strongly disagreeing.

5.1.1 Skill Development. Table 1 provides an overview of each student self-reporting their skill acquisition level pre and post assessment. We use colour gradient to visually enhance representation of the skill levels: the darker the colour, the more developed the skill is. Since some of our students have substantial working experience, it is not surprising that some of them are already proficient or even expert in some of the targeted skills.

Table 2 shows how often students reported skill level improvement, with minute taking and video editing skills being reported as the most improved. Table 3 indicates that the majority of students (92%) reported improvement of at least one skill, with 54% reporting improvement of two or more skills. In most cases, improvement was by one level up from a novice or an advanced beginner level, although *S*9 reported that their teamwork skills improved by two levels from absolute beginner to proficient.

Table 2: Overview of improvement per skill

Skill	#	Distribution (out of 13)
Video Editing (VE)	6	
Researching Information (RI)	4	
Teamwork (TW)	3	
Minutes Taking (MT)	7	
Time Management (TM)	2	

Table 3: Overview of number of skills improved by students

Number of skills	#	Distribution (out of 13)
4 skills improved	1	
3 skills improved	1	
2 skills improved	5	
1 skill improved	5	
No skills improved	1	

5.2 Interviews

The three students interviewed each came from a different group, providing insight into a range of group experiences. Several codes were identified by both researchers from the interviews. Some brief examples can be seen in Table 4. Four over-arching themes were established.

5.2.1 Engagement and Learning Experience. Students generally described the module as enjoyable, interesting, although initially challenging. One participant noted, *"bit daunting at first...became much better and more fun,"* highlighting the trajectory of their experience.

5.2.2 Collaborative and Interpersonal Skills. Many students emphasised the value of teamwork, reporting that working as a group facilitated learning. As one student explained, *"work with the team went far better than I was expecting"* and that they *"learned a lot through working with others".* However, it should be noted that all interviewees referred to working on their individual video segments and then gluing them together afterwards rather than completing all tasks as a team.

5.2.3 Practical and Transferable Skills. Students recognised the acquisition and application of both technical and professional skills, such as communication, video editing, and connecting tasks to real-world contexts. This illustrates the module's role in developing the soft skills relevant beyond the classroom.

5.2.4 Ethical and Professional Awareness. As should be expected with this module, engagement with ethical and societal issues was evident in discussions. Students reflected on human behaviour and broader ethical implications, with comments such as *"you can control how people behave through your design... maybe you need to focus on the ethics",* demonstrating their growing awareness of professional responsibility.

5.3 Student-Produced Videos

The majority of videos ($n = 9$) were 'state-sponsored' ranging from deliberately enhanced propaganda to relatively neutral segments. These videos covered topics such as social scoring systems, surveillance, disinformation, and cybersecurity. The remaining videos

Table 4: Examples of codes

Code	Definition	Example
Sentiments	Feelings toward the assessment or module	"enjoyable", "bit daunting at first", "became much better and more fun", "really interesting module"
Teamwork	Discussion of working as a team	"work with the team went far better than I was expecting", "learned a lot through working with others", "some people were more keen to do certain tasks than others, which is only natural in a group"
Skills	Skills described as being acquired or used	"very communicative", "using video editing software", "I actually started using the meeting minutes skills"
LESPi	Reference to LESPi issues	"you can control how people behave through your design. And uh… it also brings ethical issues", "there's people like Elon Musk going…sticking chips in people's brains or wanting to…and it's like, well… yeah maybe you need to focus on the ethics"

($n = 4$) were exposure videos, addressing topics such as location tracking, use of AI and robots in medical care, the impact of social media on mental health, and cybersecurity. It was also observed that the videos submitted within the propaganda category were more 'playful' and imaginative in nature. For example, one such video demanded that happiness was now obligatory and the state were introducing emotion surveillance technology.

6 Conclusion

This paper has presented an evaluation of how a video-based assignment can be used to teach LESPi whilst also developing other soft transferable skills. Students found the assignment engaging and reported an improvement across a number of skills. This assignment could be used in any module to assess LESPi in a particular context and introduce group work.

Whilst the findings are positive, there are a few limitations. The sample size could be considered small, with 13 completing the optional survey and only 3 of these agreeing to be interviewed. Additionally, self-reporting skill level although useful, can be inaccurate as students may not have the expertise to evaluate themselves (unskilled and unaware [11]) or they may simply report what they think is acceptable to the lecturer.

Future Work. It would be beneficial to re-run this study and map the skills to the Professional Dispositions outlined in the ACM guidelines. This along with repeating with a larger sample and completing the survey pre and post assessment could result in improved confidence in this method.

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