

ZARB, M. and BIRTLESKELMAN, J. 2020. Through the lens: enhancing assessment with video-based presentations. In *Proceedings of the 25th Association for Computing Machinery (ACM) Innovation and technology in computer science education conference 2020 (ITiCSE '20), 15-19 June 2020, Trondheim, Norway*. New York: ACM [online], pages 187-192. Available from: <https://doi.org/10.1145/3341525.3387376>.

# Through the lens: enhancing assessment with video-based presentations.

ZARB, M. and BIRTLESKELMAN, J.

2020

© 2020 Association for Computing Machinery. This is the author's version of the work. It is posted here for your personal use. Not for redistribution. The definitive Version of Record was published in *Proceedings of the 25th Association for Computing Machinery (ACM) Innovation and technology in computer science education conference 2020 (ITiCSE '20), 15-19 June 2020, Trondheim, Norway*, <https://doi.org/10.1145/3341525.3387376>.  
<https://doi.org/10.1145/3341525.3387376>.

# Through the Lens

## Enhancing Assessment with Video-Based Presentations

Mark Zarb

School of Computing Science and Digital Media  
Robert Gordon University  
Aberdeen, UK  
m.zarb@rgu.ac.uk

Jen BirtlesKelman

DELTA  
Robert Gordon University  
Aberdeen, UK  
j.birtleskelman@rgu.ac.uk

### ABSTRACT

This paper discusses a video-based approach trialled within Robert Gordon University. Students are typically asked to formally deliver presentations (either individually, or in groups) for summative assessment. Timetabling issues, large student numbers and staff availability can prevent these presentations from being conducted in effective learning environments. Marking is often completed after the presentations, with markers referring to shorthand notes in order to award a grade, potentially missing out specific feedback and action points. Furthermore, students are sometimes reluctant to present, and feel that they only have one chance to "get it right".

Students were asked to film their presentations and submit them digitally for grading. This assessment style was trialled over four modules across two semesters and showed a number of benefits: students gave positive feedback about the experience and indicated that they appreciated the fact that they could review and rehearse their submission multiple times, thus submitting their best version for assessment. Staff found that marking time was reduced and they were delivering more specific feedback, as they were able to review the work multiple times.

### CCS CONCEPTS

• **Applied computing** → **Interactive learning environments**;  
Media arts.

### KEYWORDS

video assessment, video presentation, presentation skills, professional skills, student experience

### 1 INTRODUCTION

Too often, assessment in learning and teaching seems to follow the same tried-and-tested methods; essays, exams and presentations are the trifecta. However, there are disadvantages with these forms of assessment. In the case of presentations, surveyed students reported that they were typically asked to present back-to-back in slots of around 20 minutes. They have one chance to present to the best of their ability and staff sit for hours trying to mark the final presentation with as much enthusiasm as the first. Similarly, essays require a lot of time to mark and may be more advantageous to an academically-inclined student.

There is an opportunity to align these assessments more accurately with industry. Presentations in industry are increasingly expected to be delivered virtually via software platforms (such as Skype for Business or Zoom) or pre-recorded pitches (such as crowd-funding campaigns). Predictive statistics indicate that 80% of all internet traffic will be video-based [1]. Are traditional boardroom-style presentations or repeated essay submissions preparing our students for the jobs they will be fulfilling in industry? It is worth considering if these methods of assessing students are the most appropriate. More suitable forms of assessment should be considered to more accurately align the intended learning outcomes with students' practical skills.

This study arose from the authors' coordination on four modules at Robert Gordon University, where existing assessments and student feedback highlighted a number of issues. These identified the research problem: that students feel that presentations and essays tend to be over-used in their assessments. Whilst these are valuable skills, by using video and filming techniques students can be better prepared with digital skills, which are highly desirable in industry.

The purpose of this study is to reflect on case studies that took place at Robert Gordon University. The case studies explore a video-based approach to discover the effect on assessment and the student learning experience when adjusted to incorporate a video-based submission.

### 2 LITERATURE REVIEW

#### 2.1 Curriculum

Our students' needs evolve throughout their education, with university forming the final stage. Race [11] suggests that we need not only be aware of what learning outcomes we wish to teach, but also of the students' 'learning incomes', what do they bring to the table from previous education? This also suggests students should be building upon learning, therefore in later stages of university, students should be assessed on more than a presentation or essay

---

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from [permissions@acm.org](mailto:permissions@acm.org).

*ITiCSE '20, June 15–19, 2020, Trondheim, Norway*

© 2020 Association for Computing Machinery.

which may only achieve the 'apply', 'analyse' and 'evaluate' stages when applying Bloom's Taxonomy [9]. The revised Bloom's Taxonomy uses 'create' at the highest level - this could be achieved through the use of video artefacts:

"The uses of video technology that may produce the most active learning situations are those that require students to use the technology in combination with theory to produce a tangible intellectual product. Students benefit from not simply passively watching videos but also actively producing their own videos" [12].

In an effort to discourage strategic learners from missing the opportunity to engage in skills taught within a module, we know that a constructivist approach, aligning assessment with intended learning outcomes is ideal [11]. This allows students to construct meaning and learn through practice [2]. Race also advocates assessing students through multiple forms of assessment, to ensure accessibility. This allows students who are not as accomplished at essays, presentations or exams to thrive through different forms of assessment, showing that variety is key to good assessment practice.

## 2.2 Industry as a Consideration for Assessment Design

A consideration for assessment design is to look at what industry expects of new graduates. Many graduate level job adverts indicate an expectation of digital skills. Graduates are increasingly expected to be adept with technology [10]. Is the way in which university prepares students for industry through assessment also adequately preparing them for employment?

In today's digital age, the workplace is not simply limited to physical presentations. With the rise of crowdfunding sites, such as Kickstarter, an alternative way to pitch products is for proposers to create a video presentation. The same key skills of a traditional presentation are still required, such as choosing relevant content and presenting in a way that gains traction - however, skills in the use of digital technology are also necessary.

Business start-ups are increasingly reliant on capital raised by crowdsourcing campaigns such as Kickstarter [13]. It therefore follows that a working knowledge of the best practices, do's and don'ts of authoring a pre-recorded business presentation or pitch is fundamental to a graduate's success in industry. It is recommended that the template of a crowdfunding campaign should be integrated into business school coursework, updating the traditional business plan [14]. It is further suggested the assessment should require all elements needed to launch a successful Kickstarter campaign and students should develop and present their promotional video, either to the class or as a written element of their final business plan:

"Kickstarter may provide a more efficacious environment for distilling experiential learning in entrepreneurship students" [14].

Students may have skills in technology-enhanced learning that many lecturers may not [10]. Digital skills are now taught consistently in primary school, for example use of iPads, and techniques such as stop motion and filming [3, 5]. Higher education should be focused on honing these skills into more professional uses.

## 2.3 Video-based Assessment Practices

Many studies have examined the benefits of video-based assessment in terms of the medical professions. Video is used as a way of recording OSCEs (objective structured clinical examinations) and used for formative assessment to develop clinical skills [16]. Some studies have also been conducted into the benefits of video as a form of student reflection, or language learning [4, 15]. Whilst using video, this common use is a more simplistic integration of video in assessment, in that a recording is made live for later analysis. Little has been researched into the production of enhanced video presentations. However, Kickstarter [8] and Smart Insights [1] have articles which discuss best practice and the importance of communicating with your client via video.

JISC [6] stated that mobile and audio-visual technologies would play a larger part of e-assessment by 2017, with the expectation to become mainstream. However, despite students becoming more technology literate in the past decade, higher education institutions are not using technology such as video assessment in innovative ways.

"As educators, we need to be thinking about how to teach both Legacy and Future content [...]. The first involves a major translation and change of methodology; the second involves all that plus new content and thinking. It's not actually clear to me which is harder - *learning new stuff* or *learning new ways to do old stuff*. I suspect that it's the latter" [10].

Though students are technologically savvy, the average student does not possess skills or experience in creating engaging videos, therefore providing a gap in their education [7].

## 2.4 Summary

The literature shows that there is a need to make changes to better prepare our students for industry. Whilst legacy skills such as presentations and essay writing are essential items in the curriculum, these students need to be prepared for a workforce that has already adapted itself to certain expectations and technologies. The authors posit that all students could benefit from certain transferable skills; in this case, video-making, and that these skills could be placed in existing curricula with ease.

## 3 METHOD

It is important to understand the perception that students have of both stand-up presentations, and video-based ones. A survey was designed and distributed to better understand the students' experience of these two styles of presentation through the collection of both quantitative and qualitative data.

### 3.1 Study Design

Robert Gordon University is based in Aberdeen, Scotland and currently has 14,000 students and 1500 staff<sup>1</sup>. Four study modules were identified from within the School of Computing Science and Digital Media and the School of Creative and Cultural Business, where assessments involving traditional stand-up presentations were replaced with the submission of video-based presentations.

<sup>1</sup><https://www.rgu.ac.uk/about/facts-figures>

Students on these modules were invited to participate in an optional survey following completion of the module.

Whilst a discussion on module content and learning outcomes is outwith the remit of this paper, the four assessments that asked students to submit a video-based assessment were centered around the following topics, related to computing:

- Presenting the completed solution to an external project management client, having worked in an agile manner.
- Presenting a minimum viable product (MVP) for a start-up, including a coded prototype.

In each module, the video-based assessment consisted of students asked to research a new topic related to their degree, and explain it through a presentation.

From informal conversations with students during the creation of this process, it became apparent that they engage with situations which require the use of video on a daily basis (e.g. creating and consuming video content on social media such as Snapchat, Facebook, Instagram, YouTube, etc...). This, as well as the subject matter of the chosen modules, led to an expectation that students would be familiar with the process required to produce a video. It was decided that specialised training in video-making and editing would not be given as an addendum to the module, as it would exceed the learning outcomes.

It was emphasised to all students that the video would not be graded on its technical merits, but would be used as a conduit for the presentation. Teaching staff provided a document with technical guidance on video production, and provided support sessions for students to get technical assistance. No students attended these support sessions.

**3.1.1 Survey.** The survey was designed by the researchers in conjunction with module leaders to be completed individually by each participant on an online platform.

The first two questions were *Have you had any prior experience of traditional/stand-up-and-speak presentations as a form of assessment?* and *Have you had any prior experience of video-based presentations as a form of assessment?*. These were used to determine whether participants were eligible for the study, as any participant who did not have experience of both was not perceived as being able to reflect and compare the two styles appropriately.

A set of five-point Likert scale questions queried students on their perceived stress levels and enjoyment levels when preparing a stand-up presentation, using the phrasing *When asked to prepare and present using a traditional/stand-up-and-speak presentation, can you rank your stress levels on a scale from 1 (very stressful) to 5 (not stressful)?*, and *When asked to prepare and present using a traditional/stand-up-and-speak presentation, can you rank your enjoyment levels on a scale from 1 (not enjoyable) to 5 (very enjoyable)?* The participant was also given space to elaborate further using a free-text box.

A second set of five-point Likert scale questions queried students on their perceived stress levels and enjoyment levels when preparing a video-based presentation, using the phrasing *When asked to prepare and present using a video-based presentation, can you rank your stress levels on a scale from 1 (very stressful) to 5 (not stressful)?*, and *When asked to prepare and present using a video-based presentation, can you rank your enjoyment levels on a scale from 1*

*(not enjoyable) to 5 (very enjoyable)?* The participant was also given space to elaborate further using a free-text box. Students were also asked the question *Do you think any skills gained with this style of presentation may be useful for your upcoming career?*.

These questions were designed to better understand the student experience throughout these styles of presentation.

Finally, students were asked to indicate what prior experience (if any) they had with video recording and editing, through the questions *What prior experience of video recording did you have prior to this module?* and *What prior experience of video editing did you have prior to this module?*.

The Likert scale data was analysed to determine whether there were any statistically significant differences within the students based on their experience with stand-up presentations and video-based presentations. The following null hypotheses are tested: (1) H0: There is no statistical difference in the students' stress levels when reporting on stand-up presentations, as opposed to video-based presentations. HA: There is a statistical difference in the students' stress levels when reporting on stand-up presentations, as opposed to video-based presentations. (2) H0: There is no statistical difference in the students' enjoyment levels when reporting on stand-up presentations, as opposed to video-based presentations. HA: There is a statistical difference in the students' enjoyment levels when reporting on stand-up presentations, as opposed to video-based presentations.

## 3.2 Participants

Adjustments were made to four modules across the School of Computing Science and Digital Media and the School of Creative and Cultural Business at Robert Gordon University, so that they would incorporate video-based presentations in lieu of stand-up presentations as part of their assessment. The changes were made in conjunction with the relevant course coordination team.

Following the completion of the four modules, an e-mail was circulated to students who had sat one of these modules inviting them to participate in a survey. A total of 82 participants were recruited. All participants were undergraduate students in their third year of study. No gender data was collected at this point. Ethical approval was obtained for the study, and informed consent was obtained from all participants.

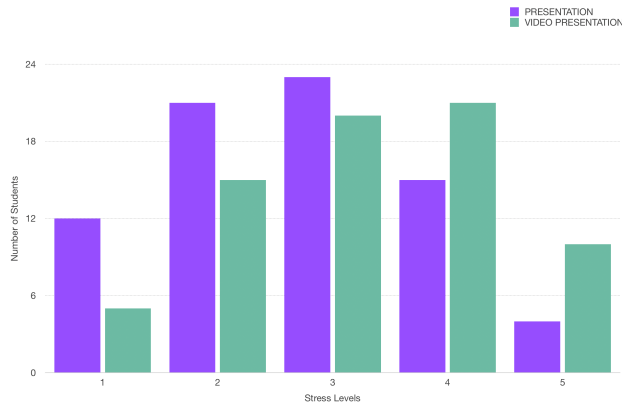
## 3.3 Results

The survey data was analysed to determine whether there were any significant statistical differences reported between students' reported experiences of stand-up presentations and video-based presentations.

**3.3.1 Data Analysis.** A preliminary analysis was performed to ensure that all participants had experience of both stand-up presentations and video-based ones. Seven participants were excluded from the final results due to a reported lack of experience, leaving a total of 75 participants. All remaining participants reported having had experience with both styles of presentation.

**3.3.2 Stress Levels.** Statistical tests were carried out to establish whether the reported stress levels of the students were significantly different depending on the style of presentation used. Students were

asked to report their stress levels for each of these items on a 5-point Likert scale ranging from 1 (very stressful) to 5 (not stressful). The results can be seen in Figure 1.



**Figure 1: Reported stress levels ranging from 1 (very stressful) to 5 (not stressful) for traditional presentations and video-based presentations.**

The reported result after a paired t-test analysis is  $t(74) = -3.241$ ,  $p < .005$ . Due to the reported means of the two presentation styles and the direction of the t-value, we can conclude that there was a statistically significant improvement from  $2.7 \pm 1.12$  for reported stress levels in stand-up presentations to  $3.2 \pm 1.22$  for reported stress levels in video-based presentations. The null hypothesis was therefore rejected.

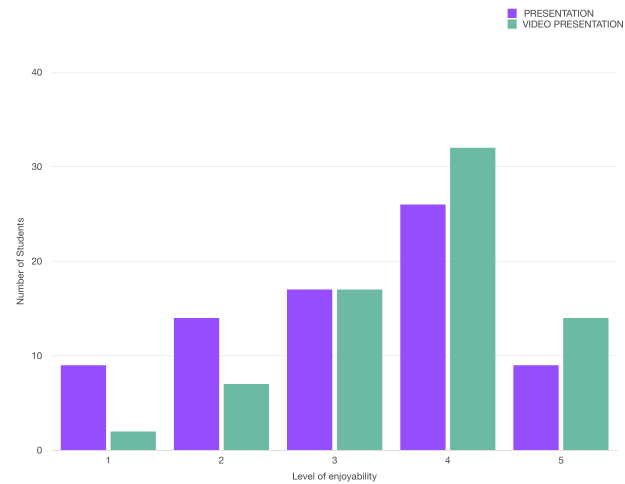
**3.3.3 Enjoyment Levels.** Statistical tests were carried out to establish whether the reported enjoyment levels of the students were significantly different depending on the style of presentation used. Students were asked to report their enjoyment levels for each of these items on a 5-point Likert scale ranging from 1 (not enjoyable) to 5 (very enjoyable). The results can be seen in Figure 2.

The reported result after a paired t-test analysis is  $t(71) = -3.181$ ,  $p < .005$ . Due to the reported means of the two presentation styles and the direction of the t-value, we can conclude that there was a statistically significant improvement from  $3.2 \pm 1.13$  for reported enjoyment levels in stand-up presentations to  $3.6 \pm 0.98$  for reported enjoyment levels in video-based presentations. The null hypothesis was therefore rejected.

### 3.4 Discussion

The results section of this paper and its subsequent analysis has shown that the surveyed students indicated a clear preference for video-based presentations in terms of it being perceived as less stressful and more enjoyable than traditional stand-up presentations. In order to better understand these results, the qualitative data was thematically analyzed. When students were asked to elaborate further on their perception of stand-up presentations, they broadly spoke about nerves and public perception:

- "Standing up in front of a crowd of people [...] was probably the most stressed I have ever been." "I have limited experience [...] but I felt I was mocked when presenting."



**Figure 2: Reported enjoyment levels ranging from 1 (not enjoyable) to 5 (very enjoyable) for traditional presentations and video-based presentations.**

A minority of respondents indicated that as their confidence grew, so did their ability at delivering these styles of presentations; for example:

- "I am very confident and happy to speak in front of people, so I don't mind this kind of presentation."

When students were asked to comment on their perception of video-based presentations, students indicated that they enjoyed the ability to present a carefully curated final version of their work, and also appreciated the ability to be more creative with their presentations:

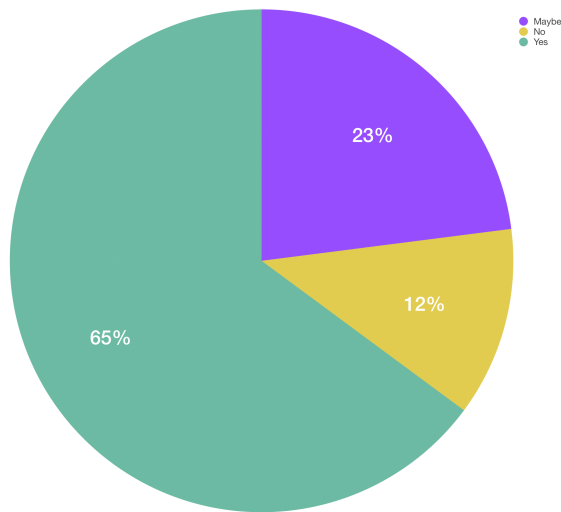
- "To make a video presentation gives you a second chance to fix yourself when your brain freezes."
- "I find that there is more scope to be more creative in video presentations."

14.8% of participants indicated that they had had prior experience of video recording, and 22.2% indicated that they had prior experience of video editing, suggesting that most students were complete novices to the area. This is important to note, as it may have been assumed that prior experience in video-making is essential before including this style of assessment in the curriculum.

Whilst no hypothesis has been proposed with regards to students' perception of video-based presentations being beneficial towards their future careers, this question was still posed to them in order to better understand whether they simply perceive video-based presentations to be the 'fun' antithesis to stand-up presentations.

Figure 3 shows the student response to the question Do you think any skills gained with this style of presentation may be useful for your upcoming career? Whilst the initial results are positive, it is clear that a quarter of the surveyed cohort are unsure as to whether these skills are transferrable into their future career path.

If a video-based approach is therefore used in the curriculum, care must be taken to explicitly contextualise its relevance to students, and show how the skills gained from such an approach may be beneficial to their future career. For example, students may be asked to create and submit a video pitch as part of a job application



**Figure 3: Student response to "Do you think any skills gained with this style of presentation may be useful for your upcoming career?"**

or being involved in crowdfunding or social media campaigns for future employers.

**3.4.1 Staff Perception.** Following informal conversations with teaching staff (n=4) on these modules, it was indicated that video-based presentations had allowed students to be able to deliver more content in a shorter space of time. This was partly due to the students being able to optimise their use of time through a reflective manner, and also due to having multiple sources of media at their disposal (e.g. combining visuals with voice-over).

Staff also commented on the fact that the presentations that were delivered in a video-based manner were more interesting, as the use of multimedia allowed students to be creative in ways that would not be possible in a traditional stand-up pitch; for example, some students created adverts to supplement their final deliverable within their delivered presentations.

## 4 CONCLUSION

The modules analysed are across different Computing-related disciplines within Robert Gordon University: programming, project management and entrepreneurial studies. Whilst it was anticipated that students across disciplines may react differently to the concept of video-based presentation, the results within each discipline were largely similar and do not warrant independent investigation in this paper. A follow-up paper could consider differences specific to each discipline after more data has been collected.

### 4.1 Benefits to Students

This approach affords several benefits to students, such as the following:

- Students are able to watch presentations from previous cohorts to better understand what is expected of the assessment - this is not easily achievable with a typical stand-up presentation.
- It allows for students to re-watch their presentation after receiving feedback, allowing them to contextualise their comments.
- Students are presenting the best version of themselves and are not disadvantaged by nerves on the day of presentation, or lack of confidence with public speaking.
- Students gain practice with a technical skill that is very relevant to today's workforce, but not necessarily present in some degree streams.

### 4.2 Benefits to Staff

Staff members involved with this assessment style have reported that video-based presentation reduced their overall marking time, allowed them to give more specific feedback (i.e. by reviewing a single presentation multiple times), and allowed them to manage their time better. Furthermore, replacing stand-up presentations with a video-based approach allowed for rooms to be freed up, and for staff to optimise their student-facing time.

### 4.3 Recommendations for Implementation

Through the observations and data collection reported in this paper, as well as informal interviews with students following the video-based presentations, the authors recommend that technical guidance should be publicly available for students. It should be noted that whilst it is useful to present students with a technical demo of how to produce and edit videos, it was found that this was not necessary, and that through their daily consumption of technologies such as social media, students were already predisposed to these skills. The authors had organised drop-in sessions for technical support throughout these modules, but no students used this service.

In the technical guidance used for the modules discussed in this paper, the authors provided details and examples of three styles of video which would be accepted as assessment, acknowledging that not all students would feel comfortable speaking or appearing on camera. These are represented below:

- Full video showing the students present their assessment.
- The student's voice accompanying the presentation as a voice-over.
- Text over the video (without the student voice). Students were free to use one style or a mixture of all three.

To provide additional technical support, the technical guidance should consist of the following, at a minimum:

- That the student's existing smartphone, tablet or webcams can be used for video capture.
- Direction to any equipment hire available to the students through their department which will help video or audio capture.
- Any specialist software available to the students.
- A note about audio quality and copyright/ music policies.
- An explanation that video quality and technical ability are not being assessed (where applicable).

It should be noted that a number of items should be considered prior to adoption of this assessment style:

- For digital submission, most VLEs have size limits, which may not work for longer videos. In these assessments, students were encouraged to upload their videos to a cloud-based system if necessary, but this introduces other constraints (namely, that the student must keep their file uploaded until any relevant marking and ratification by assessment boards are completed, and that care must be taken by the assessor to ensure that the file had not been modified beyond the original submission date).
- Timing constraints differ from a stand-up presentation to a video-based one: students can fit more information into a 3-minute video than they can do in a 3-minute stand-up presentation, so timing should be adjusted accordingly.
- There may be copyright issues if students use certain footage or music files - but this can lead into a lecture on professionalism and codes of conduct.
- Students may use obscure file formats for compression, leading to some additional software or codecs being required on the marker's machine. (This can be avoided by being more prescriptive as to what files students are expected to submit).

#### 4.4 The Value of Presentations

It is important to note that the authors are not attempting to devalue stand-up presentations - this assessment style provides students with a useful and important skill-set for employment and personal development. The video-based presentation discussed in this paper is seen as something that could be used as an alternative or enhancement, especially if students are inundated with a number of stand-up presentations in the assessment period or thought their education.

#### 4.5 Threats to Validity

As the survey was anonymous, it was not possible to correlate student's experience of stress and enjoyment with their grades. All students passed across all modules, but it is not possible to compare and contrast grades for traditional presentation and video-based presentation at this time. It should be noted that the survey was distributed to students following their grades, so reception of positive grades may have biased them towards the assessment style used.

#### 4.6 Future Work

This case study considers the adoption of video-based presentation into summative assessment and considers how staff and students have reacted to this adoption across a number of disciplines. It is an area that is ripe for further data collection, which will allow for further work and study.

Furthermore, data needs to be collected on the time spent by students preparing and editing the video, contrasted with rehearsing for a traditional presentation. Whilst the authors and the markers ensured that the technical quality of the video did not correlate to the final grade in these cases, further work needs to be done to explore whether there may be a subconscious bias, where the quality of the work presented may correlate with the awarded grade.

Currently, the authors are looking at the students' level of attainment and achieved grades when comparing video-based presentation and stand-up presentation. Furthermore, studies are being planned considering the adoption of this assessment technique within specific disciplines.

## REFERENCES

- [1] Robert Allen. 2016. Video to account for 80% of internet traffic by 2020. Retrieved 2020-01-09 from <http://www.smartinsights.com/digital-marketing-platforms/video-marketing/video-account-80-internet-traffic-2020-chartoftheday>
- [2] John B Biggs and Catherine Tang. 2011. *Teaching For Quality Learning At University*. 137–139, 141–142 pages.
- [3] Leo Casey and Bertram C. Bruce. 2011. The practice profile of inquiry: Connecting digital literacy and pedagogy. *E-Learning and Digital Media* 8, 1 (2011), 76–85. <https://doi.org/10.2304/elea.2011.8.1.76>
- [4] Hsueh-hua Chuang and Marcia Harmon Rosenbusch. 2005. Use of digital video technology in an elementary school foreign language methods course. *British Journal of Educational Technology* 36, 5 (2005), 869–880. <https://doi.org/10.1111/j.1467-8535.2005.00509.x>
- [5] W Clark and R Luckin. 2013. iPads in the Classroom: What the Research Says. Retrieved 2020-01-09 from <http://hpsict.global2.vic.edu.au/files/2015/08/ipads-in-the-classroom-report-ikl-v24yz4.pdf>
- [6] JISC. 2007. Effective practice with e-assessment: an overview of technologies, policies and practice in further and higher education. Retrieved 2020-01-09 from <http://www.jisc.ac.uk/media/documents/themes/elearning/effpracessess.pdf>
- [7] Peter Kaufman, Chiharu Ishida Lambert, Leigh Anne Donovan, and Kristina Kaufman. 2017. The Creation of Videos by Marketing Students: An Exploration of Attitudes and Motivations in a Capstone Course. In *Creating Marketing Magic and Innovative Future Marketing Trends*, Maximilian Stieler (Ed.). Springer International Publishing, Cham, 1265–1273.
- [8] Kickstarter. 2015. A few tips on creating a good video. Retrieved 2020-01-09 from <http://kickstarter.com/blog/a-few-tips-on-creating-a-good-video>
- [9] Kathryn A. Marley. 2014. Eye on the Gemba: Using Student-Created Videos and the Revised Bloom's Taxonomy to Teach Lean Management. *Journal of Education for Business* 89, 6 (2014), 310–316. <https://doi.org/10.1080/08832323.2014.903888>
- [10] Marc Prensky. 2001. Digital Natives, Digital Immigrants Part 1. *On the Horizon* 9 (2001), 1–6. <https://doi.org/10.1108/10748120110424816> arXiv:arXiv:1011.1669v3
- [11] P. Race. 2015. *The lecturer's toolkit: A practical guide to learning, teaching and assessment*. Vol. 27. 278 pages pages.
- [12] Patrick L. Schultz and Andrew S. Quinn. 2014. Lights, Camera, Action! Learning About Management With Student-Produced Video Assignments. *Journal of Management Education* 38, 2 (2014), 234–258. <https://doi.org/10.1177/1052562913488371>
- [13] Kyle P. Vealey and Jeffrey M. Gerding. 2016. Rhetorical work in crowd-based entrepreneurship: Lessons learned from teaching crowdfunding as an emerging site of professional and technical communication. *IEEE Transactions on Professional Communication* 59, 4 (2016), 407–427. <https://doi.org/10.1109/TPC.2016.2614742>
- [14] Troy A Voelker and Robert McGlashan. 2013. What is Crowdfunding? Bringing the Power of Kickstarter to Your Entrepreneurship Research and Teaching Activities. *Small Business Institute Journal* 9, 2 (2013), 11–22. <http://ezproxy.umuc.edu/login?url=http://search.proquest.com/docview/1506891970?accountid=14580%5Cnhttp://sfx.umd.edu/uc?url%7B%7Dver=Z39.88-2004%7B%7Dval%7B%7Dfmt=info:ofi/fmt:kev:mtx:journal%7B%7Dgenre=article%7B%7Dsid=ProQ:ProQ:abiglobal%7B%7Datitle=What+is+Crowdfunding?+Bring>
- [15] Debbie Wagener. 2006. Promoting independent learning skills using video on digital language laboratories. *Computer Assisted Language Learning* 19, 4-5 (2006), 279–286. <https://doi.org/10.1080/09588220601043180>
- [16] Amanda Zick, Michael Granieri, and Gregory Makoul. 2007. First-year medical students' assessment of their own communication skills: A video-based, open-ended approach. *Patient Education and Counseling* 68, 2 (2007), 161–166. <https://doi.org/10.1016/j.pec.2007.05.018>