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An inquiry into the current and future uses of digital video in University teaching

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Abstract Research indicates that student use of digital video has increased dramatically in recent years, both for personal and academic use; suggesting an opportunity to further incorporate its use in education. Educators too have recognised this trend, and see the value in providing students with academic video content. This inquiry begins by examining current uses of digital video in a wide range of educational settings, to establish the role it plays in supporting and enhancing student learning. Following this, some of the challenges present in the literature are outlined, specifically the challenges of providing relevant video content, and developing teaching and learning methodologies for use with digital video. Future opportunities and directions for the use of video in education are then examined and discussed, with attention given to the prospect of academic online video platforms. In the methodology section, the process of integrating digital videos into lectures is explained, along with some of the challenges and obstacles faced. Findings presented indicate that students value the use of digital video in lectures, and would like to see its use become more ubiquitous in education. Finally, students' readiness for an online video platform for viewing, sharing, and discussing content is outlined, indicating a predominantly positive disposition for such a platform.

Keywords Digital video · Interaction · Engagement · Discussion · Technology · Online learning

1 Introduction and context

Recent technological advancements have resulted in a dramatic increase in the availability and accessibility of digital video content across multiple platforms. This has prompted a substantial increase in students' use of video as a source of information, with over half of all internet users watching, and often sharing video content online (Snelson

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2008). While much of this viewing is for social and personal use, Kaufman and Mohan (2009) suggest that increased availability has resulted in students sourcing and discussing video content related to their academic studies. There has also been a marked increase in students requests for video as a tool to support their learning, with some authors suggesting there is a danger that not providing video content in education may result in 'artificial' learning for students, leaving them to find relevant material elsewhere (Smith and Caruso 2010:56–94; Donnelly et al. 2011). Educators too are eager to provide quality video content in class (Kaufman and Mohan 2009), seeing particular value in providing short, focused video clips that enhance the teaching and learning achieved in specific learning segments.

Video can be used in a variety of teaching and learning contexts to alter and enhance the experience provided for students. In classrooms and lecture halls, educators are generally employing video as a whole class activity, where content is viewed together in large groups. In schools, content is predominantly sourced from subscription based services such as '*unitedstreaming*'. However, free digital repositories such as Teacher Tube are gaining popularity with teachers (Mardis 2009). In Universities, lecturers are more likely to incorporate self-curated content that is drawn from documentaries or films (Kaufman and Mohan 2009). Educators cite a number of reasons for bringing video content into their learning environments. Video can be used to vary instructional strategies, offering the ability to provide multiple forms of information for students. Video can also be used to expose students to a variety of teaching scenarios, viewpoints, and experiences, which would otherwise be difficult to access (Astleitner and Wiesner 2004:11; Denning 1992; Choi and Johnson 2010:217; Karppinen 2005:242; Crow and Ondrusek 2002). Video can be particularly powerful in bringing 'real world' scenarios to the classroom or lecture hall, enabling students to link concepts learned during class to the real world (Koumi 2009:34–45; Donnelly et al. 2011). For example, in learning about language and communication, video is being used to better illustrate the dynamics of human interaction. Using video in this way has resulted in an increase in students ability to pick up on the subtle queues of face-to-face communication (Karppinen 2005:242), and so gain a deeper understanding of how language and non-verbal communication combine. In the natural sciences, video is being used for many purposes, such as showing how animals behave in their natural habitat, resulting in increased student understanding and appreciation of the animals and their ecosystems. In history teaching, video is being used to bring the past to life by presenting footage of historical events, allowing students to experience moments of history for themselves, resulting in a deeper understanding of concepts and a more concrete appreciation for what they mean (Snelson 2008). Using video segments in these ways can have a number of positive impacts. First, it gives educators a tool to reinforce concepts, by allowing students to witness rather than calculate the meaning of material covered in class (Choi and Johnson 2010). Second, it can provide an engaging and informative means of introducing, elaborating, or summarising topics. Third, these video segments can be used to encourage discussion and debate between students, their peers, and educators (Mardis 2009; Snelson 2008).

In skills based teaching scenarios, video is a powerful tool for demonstrating practical examples and models for students. For example, in health care education, video is being used to introduce students to 'real life' patient scenarios. Video segments of real issues are being used to help students plan complex interactions with patients without putting them at risk. The use of video in this manner is successful at teaching students important

skills in a controlled environment, where mistakes can be learned from, and situations can be repeated. Video is also being used as a form of professional development, where students can view examples of best practice, and model their behaviour accordingly (Crow and Ondrusek 2002). Similarly, video is emerging as a superior tool in teacher education, where educators can clearly demonstrate and critique skills such as: communication, presenting, and classroom facilitation and mediation skills, again allowing students to view these skills, and model their own actions (Choi and Johnson 2010). Additionally, video is being used in Physical Education and Sports Education as an advanced teaching instrument to promote the understanding of sophisticated skills and abilities, enabling students to view demonstrations of complex actions. Video enables these actions to be paused, repeated, and broken down into step by step processes, empowering students to understand more fully the intricacies of human motion during exercise (Mohnsen 2008; Papastergiou 2010; Ladda et al. 2004).

Video can be used in a number of ways to improve the quality of learning provided for students, placing them at the centre of the learning process. From a pedagogical perspective however some educators are reluctant to bring technology into the classroom without first blending it with more traditional teaching and learning methodologies, believing that doing so results in a passive learning experience (Ferreira 2010; Tiernan and Gurrin 2012a). Holland and Judge (2013) argue that one of the biggest challenges facing higher education is the successful blending of technology with innovative pedagogic practices. To achieve this, teaching techniques such as discussion questions, highlighting important video segments, and preparing follow-up activities, may be incorporated in video supported learning (Denning 1992). By combining traditional teaching techniques with the inherent benefits of video as an instructional tool, it is possible to reimagine the learner centred, social, and discovery based learning environment espoused by educators such as Vygotsky (1978) and Bruner (1967). This gives scope to provide students with opportunities to reflect on module content, deal with social issues that arise from video segments, and incorporate real life scenarios into academic learning; stimulating critical thinking, and improving students understanding of complex issues, processes and concepts (Donnelly et al. 2011; Toppin 2010; Choi and Johnson 2010:217).

From a content perspective, many educators have indicated that consistently providing students with access to quality, relevant video content is a difficult process to manage. Finding, editing, and presenting up to date material is time consuming, and may take educators away from other important duties (Kaufman and Mohan 2009; Mardis 2009). Many educators, including the author's previous work, have suggested that providing students with an online repository of related video content that can be viewed, updated and discussed outside class time, has potential pedagogical benefits. For example, students may gain a better understanding of concepts by viewing content at their own pace, and in their own time. Also, this approach may offer students important collaborative opportunities by sharing opinions and content amongst their peers (Kaufman and Mohan 2009; Mardis 2009; Tiernan and Gurrin 2012b). Universities have been experimenting with approaches to providing video content such as Video on Demand services (Mustillo et al. 2010; Toppin 2010), and providing video content on Learning Management Systems (LMS) (Kelsey 2000; Davis and Niederhauser 2005). Recent developments in video technology and related web technologies have increased the potential for the production of personalised, online video repositories that can be used for collaborative online approaches to video supported learning (Gurrin 2009; Gurrin et al. 2004; Smeaton 2001; Ferguson et al. 2009).

While much theoretical work has been published on the educational value of video, along with works on its value within third level education, second level education, and online learning; relatively few studies have been published that deal with the practical implementation of video within University lectures. Fewer still have been published that deal qualitatively with students attitudes and perceptions of video as a learning medium in lectures. In fact, some authors have been calling for more practical, hands on research in the area (Snelson 2008; Karppinen 2005). Additionally, while many educators have put forward the desire for students to have access to online video content platforms, little information has been garnered from students as to their appetite in this area. As such, this paper aims to add to the discussion in this field in the following ways. First, the paper aims to provide further data on the implementation and impact of the use of digital video in lecture halls for student learning. Second, the paper examines student perceptions of the use of digital video as a learning medium; including current uses and future potential. Finally, the paper will gather student opinions on the potential use of an online video platform for viewing, updating, and discussing academic content, and their willingness to adopt such a platform.

2 Methodology

2.1 Sample

This inquiry was carried out in the School of Education Studies at Dublin City University (DCU), Ireland, with a class of seventy eight (n=78) undergraduate students. Students were completing the module 'Social and Personal Development with Communication Skills' during semester one of their BSc Degree in Education and Training. This was a compulsory module, taught by the author, 2 h each week.

2.2 The module

The module 'Social and Personal Development with Communication Skills' is a practical, skills based module; designed to increase students readiness and preparation for engaging fully with the University experience and academic life. The overall aim is to provide students with the skills for independent learning, and social and personal interaction, while giving a foundation for developing critical thinking skills. It also facilitates the beginning of reflective practice, recognition of learning strengths, and identification of communication skills necessary for working effectively in a range of learning situations. Module topics were 'goal setting', 'time management', 'learning styles and learning strengths', Creativity and creative thinking', 'communication skills', 'conflict management' and 'stress management'.

2.3 Description of process

Throughout the module a commitment was made to provide a minimum of one (n=1) video segment per lecture. In order to do this, searches were conducted on popular Video Sharing Sites (VSS) and repositories such as YouTube (http://www.youtube.com), Vimeo (http://www.vimeo.com), Google video (http://www.google.com/videohp), and

TED (http://www.ted.com). Once a number of videos were located, they were viewed in full multiple times, and evaluated in terms of their content quality, relevance to subject, and relevance to learners. This involved finding content that provided different perspectives, viewpoints, and information for students; or contained information that was visually stimulating, or would prompt discussion. This process was very often the most time consuming part of preparation for lectures, as finding suitable content proved difficult in some cases.

After appropriate content was located (samples provided in Table 1), preparation for use in lectures began. This involved a number of stages. First, important sections of the video were selected which could be highlighted to emphasise important points, or encourage discussion. Many videos needed editing so that only the most relevant sections were kept for class viewing. An open source programmed called 'MPEG Streamclip' (available from http://www.squared5.com/) was used to edit clips into short, concise segments. After editing, content was sequenced with existing lecture notes, and integrated into the introduction, development, or conclusion of a topic or section. Following this, a number of pre and post questions were developed. These questions formed an integral part of how videos were incorporated into the lectures. Before each video was played, students were given a number of questions to focus their attention. During each play through, videos were paused at important sections, and discussion took place with the class. After videos finished, group discussions reflected on important points, and provided space for students to elaborate on any issues noticed in the video.

For example, during the communication skills lecture, students were first given an overview of communications i.e. the relevance of visual and vocal aspects, and the content of the message. They were then introduced to prominent models of communication, to establish the importance of encoding and decoding messages, field of experience, and audience feedback. Following this, an edited version of 'the surprising science of happiness' (available from www.ted.com, see Table 1) was played for the students. Before playing the video, students were asked to look out for the following questions: 1) Do you think Dan Gilbert is an effective communicator? Why? Why not? 2) In what ways did he use visual material to support his presentation? Do you think this was effective? 3) What techniques did he use to make his content interesting? Do you agree with all the methods used? 4) How important was audience feedback to the flow of this presentation? During the play through, the video was paused at a number of key locations, for example after the first use of humour, to allow students to gather their thoughts and talk about what they were witnessing. Finally, when the video segment finished, some review questions were asked to promote discussion amongst the group. In this case, questions were asked such as: 1) Did you find that presentation interesting? Why? Why not? 2) What presentation style do you think was used? 3) Which of the methods witnessed would you use in your presentations? Why? 4) Which of the methods witnessed would you not use in your presentations? Why?

2.4 Instruments

Data collection was carried out using a written questionnaire. Data gathered was predominantly qualitative in nature, with three quantitative questions gathered for statistical note. Although certain information such as gender and age was elicited,

Table 1 Sample videos (Unedited)

Topic	Title	Web address
Goal setting	Life Purpose	http://www.youtube.com/watch?v=XBGYktREhUI
Time management	Time Management: What it is and why it's important	http://www.youtube.com/watch?v=T7h4jUvqm6I
Time management	How to create a to do list that really works	http://www.youtube.com/watch?v=rpjSTPlEDLQ
Learning styles	Find out your learning style	http://www.youtube.com/watch?v=-Jwz_h0zXsY
Creativity	What is creativity	http://ecorner.stanford.edu/authorMaterialInfo.html?mid=1187
Creativity	Schools kill creativity	http://www.ted.com/talks/ken_robinson_says_schools_kill_creativity.html
Communication skills	The surprising science of happiness	http://www.ted.com/talks/dan_gilbert_asks_why_are_we_happy.html
Listening skills	Five ways to listen better	http://www.ted.com/talks/julian_treasure_5_ways_to_listen_better.html
Conflict	Productive V's Unproductive conflict in a group	http://www.youtube.com/watch?v=6ggykHMpEhE
Stress management	The single most important thing you can do for your stress	http://www.youtube.com/watch?v=I6402QJp52M

questionnaires were kept anonymous. The questionnaire contained one closed ended question, which used a five-point scale to judge students overall feeling on the use of video as a learning tool (1=not effective at all, 2=somewhat ineffective, 3=neither effective nor ineffective, 4=somewhat effective, 5=very effective). Following this, students were asked a series of open questions with the following three themes in mind; 1) What are students' impressions of the current use of video as a learning tool in class? 2) How would students like to see video implemented in class in the future? 3) What are students' thoughts on using an online video platform to view, share, and discuss academic content?

In the first category, students' impressions of the current use of video, specific open questions were asked, detailing the perceived benefits and drawbacks of video as a learning tool. In the second category, future implementation, students were asked to outline how they would like to see video integrated in the future, and what would make this effective. In the third section, students were asked if they would like to access academic video content using an online platform, and if they would like the ability to share and discuss academic video content with their peers, using such a platform. In both cases students were asked to justify their responses. It is important to note that all questions were intentionally left as open as possible, so that students

were free to express their own understandings and implications of the current, future, and potential uses of video in lectures (Patton 1990:290).

A research journal was used to gather the author's ideas, thoughts, and concerns noted during the inquiry. These formed an integral part of the research process (Lincoln and Guba 1985; Taylor and Bogdan 1984) and are later used to support data presented from student responses.

2.5 Procedure

Students attended the module over one Semester as part of their overall study. The questionnaire was distributed at the end of semester, and students completed this anonymously. Out of the seventy eight (n=78) students, fifty nine (n=59) completed questionnaires were returned, giving a response rate of 76 %.

2.6 Data analysis

The data collected for this inquiry was analysed in two ways. Quantitative data (closed questions) were analysed using simple statistical analysis. In an effort to understand how students interpret the world (Maykut and Morehouse 1994), qualitative data was analysed using the constant comparative method (Glaser and Strauss 1967 in Maykut and Morehouse 1994:126). This process involved analysing the data for patterns in the keywords and phrases present in student responses. Responses often contained multiple pieces of data, which were coded and grouped together as initial categories. As categories emerged, rules of inclusion were developed to ensure consistency in each category. If a piece of data did not meet the rules for inclusion, a new category was created. This process was repeated until clear categories were present. Finally, propositional statements were developed to capture the essence of each category they represented.

In an effort to test the viability and credibility of these categories and the findings within them, the author drew on Guba's (1978:56–57) work for testing the robustness of qualitative data. First, data was checked for internal and external plausibility, ensuring consistency within categories and cohesion among separate categories. Second, the data was checked to ensure it was inclusive of the data and information that was available for study. Third, data was tested to establish connections to previous work in the field, and its contribution to this enquiry. Finally, a detailed record of the analysis, coding, categorising and presentation of data was kept so that the data was reproducible by another competent judge.

3 Findings and discussion

Key themes and findings are now presented using quantitative data and extracts from qualitative responses, to address the three themes outlined previously. Extracts from the author's own reflective diary will also be used to provide an additional perspective to the inquiry. This is followed by overall conclusions and recommendations drawn from the inquiry. As stated in the methodology section, data were analysed using the constant comparative method, and as such will now be presented using propositional statements in an effort to portray the overall meaning of the data categories.

3.1 Students' impressions of the current use of video as a learning tool in lectures

In this section, students' impressions of the current use of video as a learning tool in lectures are presented and discussed. The impact of video on students' engagement with lecture content will be considered first, followed by its impact on contextualising learning for students, and finally its impact on different learner preferences.

3.1.1 Video has a predominately positive impact on how students engage with lecture content

Student responses contained many comments relating to their engagement with lectures. The most prominent of these, with thirty three (n=33) comments, was that video provides a unique and interesting way for students to engage with lecture content. Students found that it 'encouraged them to engage with the class' because it helped to 'catch their attention', 'kept it interesting', and provided a 'more enjoyable' and 'entertaining' take on the content being delivered. This is summed up well by one student who said, 'it was entertaining, and people paid attention while watching videos'. The data also suggests that video helped to 'break the class up', provide 'a change in delivery method', which made it 'easier to stay focused'. Again, this is summed up well by one student who said, 'it makes the content of the lecture much more interesting, and gives you a break from the usual PowerPoint slides'.

Students also commented that video encouraged 'everyone to get involved' in the class, with a number of comments (n=15) indicating that the use of video contributed positively to class discussion. Students felt that video 'invoked discussion and new ideas', helped to broaden the debate by 'looking at the positive and negative points from the video', and helped students to work together to figure out problems by 'helping one another with questions and answers'. Although lower in numbers, these comments indicate that video had a positive impact on the content and context of discussions during lectures.

In contrast to the above, some comments highlight a potentially negative impact on engagement. Three (n=3) comments indicated that students saw the use of video as an opportunity to take a break and relax, a time when they did not need to pay attention and concentrate. For example, one student commented 'people like watching videos because it is a break from taking in information', another said it 'gives the class a break from writing, a bit of time to relax'. Similarly, some comments (n=3) suggest that the use of video may have a negative impact on students' concentration levels. Students said that it can be 'difficult to concentrate after watching videos', and that they sometimes 'lose focus' after video content is played.

The data above suggests that video has the potential to capture and hold the interest of the class. For the vast majority of students in this inquiry, it appears to have been successful at holding their attention on the topic, varying the instructional approach, engaging them in the lecture, and encouraging discussion and debate. However, it is also evident that some students view the use of video in class as a time to relax, and may find it difficult to refocus after watching video content. These comments suggest a need for a variety of active learning methodologies when incorporating video in class. The aforementioned use of discussion questions during videos, and pausing video segments at important points, may be insufficient at holding the attention of all students. Importantly,

it seems the use of follow up activities are vital in keeping students on track and focused on the task at hand when video content is finished.

3.1.2 Video provides students with access to alternative perspectives, contexts and examples

Student comments (n=11) also suggest that video content can offer alternative perspectives, contexts, and concrete examples, to support their learning. Six (n=6) of these comments suggest that video helped to solidify learning by enabling them to link lecture content to real world contexts and problems. Students commented that videos helped to 'reinforce theory', provide 'real life examples', and 'illustrate points' that were raised in class. One student commented that video provided 'active proof of a model shown on the topic'. Five (n=5) comments suggest that video broadened students understanding of topics, by providing multiple viewpoints and perspectives. Students commented that 'seeing the other side of the argument' and a 'variety of opinions', helped to give them a 'good insight into topics'. Comments in this section suggest that video can help students to root academic content in real life situations, while also offering alternative views than those held by a particular lecturer or author.

3.1.3 Video provides worthwhile learning opportunities, for a wide variety of learner preferences

Also present in the data are a number of comments (n=24) outlining students perceptions of video as a tool for teaching and learning, and in particular its implications for different learner preferences. Nine (n=9) of these comments suggest that as a learning tool, video is effective at providing students with concise, memorable, and easy to understand segments to support lecture content. Students commented that video provided them with an 'easy way of learning something', that made information 'stick in their heads longer', and 'easier to remember'. They also felt that the video segments presented information in 'easily assimilated and digestible' chunks, breaking 'topics down into simple terms', that help 'your mind get a picture of what is going on'. Students also commented (n=15) that video provides an alternative medium for learners, especially those with more visual and kinaesthetic preferences. Students appeared to value having a 'different way of gaining information', and a 'wider range of materials to learn from'. They commented that by 'catering for different learning styles', video was effective for 'visual learning' and providing 'different learning episodes'. One student commented, 'being a kinaesthetic learner, I was able to retain more information'. This data suggests that students view video as an effective learning resource, with comments indicating it helped them to process and retain information. This is true in particular, for those in the group who consider themselves to be visual and kinaesthetic learners.

3.1.4 Author's reflections

In addition to the student feedback outlined above, the author's own reflections paint a similar picture of the current use of digital video in lectures. Students appeared to engage more with lectures when video content was introduced, and in particular, noted increased discussion and debate. However, the level of this increase differed somewhat depending

on the type of video content used. Increases were particularly noticeable when segments of video were used as examples of concepts covered in class. For example, when 'the science of happiness' was used to support the lecture on communication skills, students were readily able to identify key characteristics and traits of good communicators. Students also engaged in enthusiastic and heated discussion around the use of humour, with conversations getting very detailed around Mr Gilberts use of paraplegics in a humorous way. This led to interesting discussions about how important it is to know your audience and tailor your message accordingly. Similarly lectures that were backed up by segments from well-regarded speakers with thought provoking material seemed to increase engagement greatly. For example, when 'schools kill creativity' was used to support the lecture on creativity, students were able to make connections between creativity and the education system, recognising ways creativity could be improved in their own classrooms, in the future. Video segments also appeared to pique students' interest when they offered an unusual or unique take on the information being discussed. For example, when the talk show segment on 'life purpose' was used to support the lecture on goal setting, students found the extreme views on goals uneasy at first. However, this allowed the group to tease out important issues and gain a better understanding of what goal setting meant to them. In contrast, certain types of video segments were not as successful in increasing student engagement and developing discussion amongst the group. For example, when the 'Time management: what it is and why it's important' segment was used to support the lecture on time management, engagement and discussion were not as pronounced, while there are many potential reasons for this, the simple 'talking head' nature of the video, did not seem to pique the interest of the group.

3.2 Students' thoughts on the future use of digital video in lectures

In this section, students' thoughts on the future use of digital video in lectures is presented and discussed. This section presents two linked themes: (1) student attitudes to the volume, and sources of video content, and (2) the ways in which this content should be integrated into lectures.

3.2.1 Students would like to see more widespread integration of video content

Analysis of student responses reveals that the most prominent theme for the future use of digital video is more ubiquitous integration into lectures. Comments (n=17) indicate that students value the use of video, and would like to see its integration become more widespread across academic lectures. Students said 'the more often it is used, the better', and that they would like to see video become 'part of every module', with at least 'one video per lecture'. In terms of content students suggest that videos should be directly 'related to the topic', however content should be gathered from 'more varied material and sources, citing in particular the use of YouTube as a source and an 'educational tool'. This data suggests that students value video as a medium that can be used across subjects and academic areas, with a variety of sources available for content, especially YouTube.

3.2.2 Students have varying opinions of how this increased integration should look

Students also provided insight into how video content could be incorporated in the future. While the majority of students seemed happy with the current structure as outlined in the methodology (see Fig. 1), students had a number of suggestions. Seven (n=7) comments related to the video content itself, suggesting that in future, segments should be concise and immediately relevant to the topic. Students said that they would like 'short videos' that were 'straight to the point', warning that content that is 'too long' would demotivate and reduce student interest in the topic saying, 'it could get boring' and 'some people may lose interest and start talking' or 'tune out'. In terms of the facilitation of learning, student comments (n=12) contained a number of suggestions. The most prominent of these (n=8) suggested that a more pronounced use of questions would have a positive impact on their learning. Students commented that 'having more questions', using 'worksheets throughout the video', and asking more questions 'after the video is finished' would improve the learning achieved. The remaining comments (n=6) in this area suggested various techniques for using video in class. Two (n=2) suggested using video to show concrete examples, two (n=2) suggested using video content to facilitate and promote group work, one (n=1) suggested using content to break up longer lecture, and one (n=1) suggested making video content available before class for students to view in advance.

While the data suggests that varying student opinions on how digital video can be used in the future, a number of prominent themes have emerged. First, students appear to value short, concise segments of content that succinctly explain concepts. Second, students appear to value the use of structured questions in order to gain the most from video content. The use of questions before, during, and after video content, may help students to draw out the required information.

3.3 Student attitudes towards accessing, sharing, and discussing academic video content using an online platform

In this section, students' thoughts on being able to access, share and discuss academic video content using an online platform, will be presented and discussed. First, access to academic video content will be reviewed, outlining students' willingness to adopt this approach, and the perceived reasons for this. Second, the ability to share and

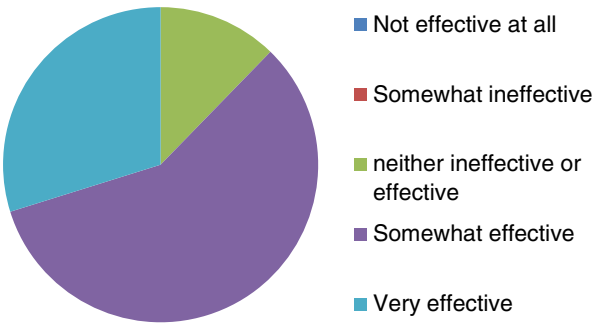

Fig. 1 The effectiveness of video in current lectures (n=57)

discuss academic video content online will be examined, again outlining students' readiness to engage in this manner, and the perceived reasons for this.

3.3.1 Students appear ready to adopt an online video platform for accessing academic video content

The vast majority of students, 84 % (*n*=40), indicated that they would like access to academic video content via an online platform. Responses analysed revealed a number of key interlinked themes supporting the development of an online video platform.

First, comments (*n*=10) suggest that students would benefit from the flexibility provided by accessing video content online, allowing greater control over when and how material is accessed. For example, if students missed a lecture, online access would 'encourage them to catch up at home', where they could view the material they missed 'in their own time'. It could also be used as a means of looking over material covered during previous lectures. For example, while some students took it upon themselves to take 'note of the web address' of videos used during this inquiry, others suggested 'it would be beneficial to have one access point' where they could revise 'with no distractions'. In fact the ability to use a video platform for revision purposes was the most prominent theme in the data, with twenty (*n*=20) comments. These suggested that having access to an online video platform would help students to clarify information covered in class by 'verifying their notes', and checking 'in case they missed anything'. Comments also indicated that viewing content again would help students to remember more clearly what was covered by 'jogging their memory of the class' and refreshing the 'points that were made'. For assignments in particular, having 'access off campus would be beneficial', supporting students in their 'on-going study' and 'assignment work' by allowing them to 'catch up at their leisure' in an environment that provides 'more time to observe and reflect'. Students appear to value the potential of online video platform for revision purposes. Comments (*n*=11) suggest that video revision is 'more interesting than looking through books', making it 'easier to stay focused' when revising at home. Using video as a revision tool may also help students 'to understand concepts better', enabling them to 'learn more' than studying using notes and hand-outs alone. This data suggests that providing students with access to online video content related to their lectures, has a number of potential benefits. Students appear to value to the potential flexibility of accessing content in their own time, suggesting that accessing video content in this way would help to reinforce lecture content, and support them in their revision, and study for exams.

Sixteen percent (*n*=8) of respondents said they would not like access to academic video content online. Responses (*n*=3) suggested that the level of engagement offered by University at present was enough to satisfy the learning needs of students. Students commented that accessing video content online was 'too much hassle', and that having access to 'Moodle [LMS] was enough'. These comments suggest that for some students, access to academic video content online would need to present added value, to justify their participation.

3.3.2 Students see potential in being able to share and discuss academic video content with their peers, using an online platform

When students were asked if they would like the ability to share and discuss academic video content with their peers, using an online platform, 73 % of them (*n*=33) were

supportive of this. The reasons for this were identified as a) opportunities for peer learning, and b) increased opportunities for interaction.

Twenty one (n=21) comments indicated that an online video platform would encourage students to discuss content in a more in-depth fashion, while encouraging them to listen to, and learn from each other. Students commented that online discussion of content would provide 'time to discuss their points of view', offering them the opportunity to engage with 'other people's perceptions' and opinions. This time outside of lectures would not only offer 'further insight into the subject' that they 'might miss out on in class', but also give students the ability to 'explain concepts in the video' that 'others may not understand', to 'help each other learn' and to assist one another in working 'towards assignments'. Seven (n=7) comments related to the facilitation of greater levels of interaction and contributions from students who may not have contributed in class, resulting in better learning. Students commented that an online platform would enable them to 'engage and interact' with each other 'at home', allowing 'more opportunities for involvement', which would 'add to the off campus learning experience'. This data suggests that students value the potential ability to come together online to listen to each other's points of view, understand things from different perspectives, and assist each other in their learning.

27 % of students (n=12) said they would not like the ability to share and discuss academic video content using an online platform. Of the five (n=5) comments present, four (n=4) simply said they did not 'see a point to it', while one (n=1) indicated they would 'rather keep discussion to the class'. This suggests that students need to see the value of participating in discussion and sharing content online, when compared to discussion content in lectures alone.

4 Conclusions and recommendations

The purpose of this inquiry was threefold. First was an examination of student perceptions of the current use of video as a learning tool in University lectures. Second was to establish student opinion on how video should be integrated into lectures in the future. Third was to gauge students' willingness to adopt an online platform for viewing and managing video content, and using such a platform to share and discuss academic content. In the first category, findings indicate that students' value the use of video in academic settings, and that its use has a predominantly positive impact on their University learning experience. The use of video in lectures appears to increase student engagement with topics by making them more enjoyable and interesting, holding student attention, and providing multiple contexts, perspectives, and viewpoints. Students also appear to value the digestible nature of video segments, believing these help to explain complex concepts in an easy to understand and concise way, while also appealing to a wide variety of learner preferences. Video also appears to encourage student debate in lectures by drawing out important issues for discussion. However, a small proportion of students either viewed the use of video as a time to relax, or found it difficult to concentrate afterwards. This suggests that while in and of itself video is a strong learning support, a variety of active learning methodologies must be blended with the use of video to maximise student interaction and engagement, and ensure the whole class are getting the most from the content. In

particular, students' comments about finding it difficult to concentrate after watching videos is an area for concern that should be addressed with follow up activities and teaching strategies.

In the second category, future use of video, it appears students not only value the continued use of video, but that they would like to its use to become ubiquitous across subject disciplines. In terms of how future integration of video should look, students want short, concise video content that is immediately relevant to the topic at hand. Content should be drawn from a variety of sources, with students making specific reference to the use of YouTube as an educational resource. Students see the most effective form of integration being one that blends video with the traditional teaching methodologies that help to guide and scaffold their learning. Specifically, students believe that the use of structured questions both during and after videos, and the use of 'worksheets' would help to focus their thinking, and ensure they can receive the most benefit from the video content.

In the third category, it seems students are predominantly positive and optimistic about the prospects of an online platform for viewing, sharing, and discussion academic video content. Students appear to value the potential flexibility of this approach, believing it will allow them to access content in their own time, where they can review content at their own pace. The ability to use an online platform to revise and study for exams seems to hold great potential for students. They value the ability of video to jog their memory, and explain concepts in a more engaging way, when compared to revising using hand-outs and books. A small number of students however, did not see the benefits in accessing content online, believing that viewing videos in lectures was enough, and going online was 'too much hassle'. This suggests that an online platform needs to contain a feature set that presents students with additional features and learning options, to make online access a worthwhile, and a beneficial addition to a suite of blended learning options. In terms of sharing and discussing video content online, that majority of students again appear optimistic about the prospects of this approach. They seem to feel that these interactive options would provide them with more space to share ideas and opinions with peers, while also allowing them to offer learning support to one another. In general, it appears that students would appreciate the increased opportunities to interact with each other that an online platform would offer. In contrast, a small number of students seemed happy to have this kind of interaction left inside the lecture room, saying that they didn't 'see the point' to additional online interaction options. This presents a challenge for educators looking to adopt a blended approach using such a platform. It appears that students must be provided with worthwhile features and interactive options so that they see the value in engaging with their peers and content online, while at the same time making the process academically worthwhile.

It appears that the integration of video content in lectures, is a teaching and learning approach that student value and would like to see strengthened and supported by a wider range of lectures, and a more robust set of teaching and learning methodologies. Students also appear to support the development of sophisticated online video platforms for learning that allow the consumption of content and worthwhile interaction amongst users and peers. However, in order to appeal to the widest range of students, such a platform must contain features and processes that support and enhance the current approaches being adopted in lectures.

5 Limitations

This inquiry has some limitations that should be mentioned in order to contextualise the findings and conclusions outlined above. First, the sample size from which the data were drawn is relatively limited in scope, focusing on one University class. The intention of the inquiry was to capture the use of digital video in its natural setting which limited the sample, however a larger scale study is needed to fully explore and develop these areas. Second, the data obtained were acquired from a single questionnaire that was distributed at the end of one academic semester. While this produced some interesting qualitative information, a longer term evaluation may yield more robust conclusions. Third, while students have given interesting and valuable data on their attitudes to using an online video platform to view, share, and discuss academic content, this is not based on actual use of such a platform. As such, these finding can only be used as a guide to students' attitudes, and further research is needed as these platforms become more widely available. Finally, academic literature on the use of digital video in lectures is relatively uncommon, and even more so on the use of online video platforms. It is possible that as research in these areas progresses, alternative themes may emerge that warrant study.

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