ascilite

What counts as educational video?: Working toward best practice alignment between video production approaches and outcomes.

Greg Winslett
University of New England, Australia

The twenty years since the first digital video camera was made commercially available has seen significant increases in the use of low-cost, amateur video productions for teaching and learning. In the same period, production and consumption of professionally produced video has also increased, as has the distribution platforms to access it. Furthermore, advances in social media technologies and learning management systems have changed the ways in which video materials can be used in teaching and learning. These developments have, among other things, brought about a complexity in the decision-making behind the production of video materials for higher education teaching and learning. Before we can begin to systematically describe and recommend certain video materials and production approaches for specific learning outcomes, it is useful to consider the existing body of research that describes how video is being used in higher education teaching and learning. This paper uses a landscape literature review of higher education video usage to identify and compare the range of production types and related educational outcomes. The paper concludes by calling for a refreshed research agenda that will assist in identifying the parts of university curricula well suited to being supported by video materials.

Introduction

There is a long history of using video materials and technologies for teaching and learning. This has taken many forms, from recording live instruction, to producing documentaries, and dramatising real life processes and interactions. Similarly, video materials have been used for a variety of purposes, providing exemplars of best practice, triggering discussion and enriching blended learning environments. In recent times, there is a sense that cheaper access to technologies such as videophones and desktop editing software and new distribution and social networking platforms such as YouTube and Vimeo has dramatically increased the possibilities for using video materials for teaching and learning. At the same time, university courses in film and TV production, editing and scriptwriting continue to attract students, and the availability of free, high quality film and TV continues to set high expectations of quality. Furthermore, advances in learning technologies have the potential to transform understandings of what counts as educational video. It is therefore reasonable to explore a history of video usage in higher education teaching and learning, in order to prepare for future policies and practices.

Despite the notion that video production is now cheaper and easier, there remains a considerable investment in the professional production of video materials for teaching and learning. In 2011 alone, Australian revenue for film and TV production of educational materials was estimated to amount to 138 million dollars, or 6% of the entire 2.3 billion dollar revenue generated by the film and TV industry (Allday, 2011). If the costs of producing these materials by personnel internal to the tertiary sector were added, this national investment in producing video materials for teaching and learning would be considerably larger. If video materials are, as is often argued, so easy and cheap to produce, then why are academic teaching teams continuing to enlist the services of professional film and TV personnel? To take this question further, are there learning outcomes that are well suited to particular video productions and can this determine what skill sets are required for the best possible outcome? This paper presents a conceptual framework that may be useful for future research into alignments between video materials and learning outcomes.

It is likely that the complexities in selecting appropriate ways to embed video materials into the tertiary curriculum will remain for some time. This large scale literature review avoids generating a list of best practice principles and instead restricts itself to categorising and describing the kinds of video materials and technologies that are being used in high education and for what purpose. It is hoped that this review will lay a foundation for assisting in the future decision making behind selecting certain styles of video over others for teaching and learning. The following section outlines the methodology and data, followed

by a literature review. In the final section, observations and concluding remarks are made.

Methodology, data and assumptions

The review presented in this paper was conducted in two phases. The first phase commenced with identifying the data useful to explore video usage in higher education teaching and learning. Once identified, the data was collected and then assembled in a way that allowed for meaningful categorisation to occur. The second phase categorised the data in a way to allow observations, trends and themes to be presented.

The intention of this paper was to provide a description of video usage in higher education and as such it was critical to select data that would enable a broad representation of this usage to be provided. Twenty-three journals specialising in higher education teaching and learning were selected as the primary corpus of literature (as used by Tight 2003, 2007) for this exploration. Tight's methodology was designed to provide a landscape review, and was adopted here for similar reasons of scale. An additional 229 other journals that feature higher education teaching and learning research were also included. In these journals, higher education features as part of a primary focus on other topics such as educational technology in the *British Journal of Education Technology* or discipline specific topics such as found in the *Journal of Creativity in Mental Health*. These journals are a source of scholarship for the entire higher education sector and therefore provide a suitably wide foundation to construct a landscape review of video usage. Once the journals were identified, articles from each journal covering a 15 year period (1997-2011) were selected to be part of the data, if they contained the term *video* in the title or abstract. A total of 703 articles were found, 25 of which were from the journals specialising in higher education.

The categorization process followed. This activity involved iterative readings of each abstract in order to allow meaningful categories to emerge. Each article was assigned two categories: (i) the video production type, and (ii) the declared outcome. Descriptions of the categories that emerged are presented in the following section. Instances in which categorisation was completely impossible to infer were categorised as *unclear*. Special emphasis was given to discover any explicit teaching and learning outcomes identified as achievable with video usage, but this was not always clear from the title or abstract. As such, the categorisation of declared outcomes feature some groupings that are not part of a teaching and learning taxonomy, but rather reflect the most dominant reason why the video material or technology was used.

The methodology adopted and data selected for this study are built on a number of conceptual assumptions and assertions. The first assumption is that the scholarly literature that explicitly refers to video represents an importance source of information from which to infer a description about its usage in higher education teaching and learning. Also, this assumption does not mean that research about educational video usage does not exist in other locations or indeed that these locations are not having some effect on higher education teaching and learning practices. Furthermore, this paper assumes that the quantity of research on specific production types and declared outcomes may correlate with the amount of activity in these areas. To put it another way, if there is considerable research on video-conferencing it is reasonable to assume that there is also a lot of activity in this area as well. This paper does not in any way assume that a high frequency of articles that involve one particular style of video production approach means this approach is more educationally sound than others. Similarly, it does not assert that any high frequencies of particular declared outcomes means that this outcome is better suited to using video materials than others.

A second assumption operating in this paper is that there is sufficient information contained in the journal article titles and abstracts to identify video production approaches and declared outcomes. By only using titles and abstracts, the intention was to (i) identify the scholarship in which video was deemed important enough by the authors to warrant emphasis, and (ii) to emulate a preliminary literature review conducted by an academic who is new to using video materials in the teaching of their discipline. One of the consequences of this approach was that the approaches and outcomes of certain articles were impossible to infer from the titles and abstract alone, but the frequency of these articles is in itself a valuable observation and relevant to this research.

A third and related assumption is that it is possible to infer from certain declared outcomes, the learning activities most likely to be applied to that type of video material or technology. Simply put, if the stated

outcome was to *provide an exemplar* of best practice, then it is reasonable to infer that a resource that shows this is most likely to trigger learning activities that would focus on the learner applying the behaviours and practices modelled by the exemplar. Viewing exemplary procedural practices seems more likely to generate activities such as using the viewed techniques in some applied way, carrying out the same sequence of actions, or responding to stimuli in the same way as the exemplar. These likely learning activities are described in each of the learning objective categories in the following section. Of course, there is no one-to-one mapping of any video production type with a particular learning outcome, but it is asserted that there are relationships that are more likely between certain styles of video and certain kinds of learning outcomes and activities.

The final caveat is that this paper does not provide any explicit recommendations on what production approaches are suitable for certain learning outcomes and educational topics. Nor does it outline how production costs and discipline-specific needs could be factored in to a decision making process. The paper does however provide a framework useful to conduct a systematic investigation into effective alignment between approach and outcomes, cost of production and discipline context. There is also scope to use this framework to explore how the *needs talk* (Fraser, 1989) of video materials in the curriculum may better inform current understanding of curriculum reform within higher education.

This section has described a two-phase methodological approach to select and make sense of the data. The assumptions and conceptual assertions have also been presented, and these caveats should be considered when reading the findings in the following sections.

Literature review

It is important to distinguish this literature review from others that purport to provide explicit guidance on how to design effective educational video. Arriving at a clear set of design principles was however the initial impetus for embarking on this research activity. This intention was troubled early on by a sense that key questions in the selection and design of video remained unanswered in the literature giving such advice. Why one style of video and not another? Why was video used for this outcome and not another? Furthermore it became clear that educational video was not a genre in and of itself, but rather a meta-genre, incorporating a range of production styles, techniques and conventions for the purposes of education. To therefore arrive at a clear set of design principles applicable to all outcomes and approaches seemed too ambitious a task. For this reason the literature review that follows limits itself to identifying and describing the outcomes videos are being used to address and the production styles currently at play.

Declared video outcomes

The declared video outcome categories are divided into two styles; the outcomes that can be described in terms of specific *learning objectives* and the *outcomes achievable* with video usage that address educational topics more broadly.

Learning objective categories

a) Show factual and procedural content: This category emerged to accommodate the research that used video materials to assist students in remembering a range of factual, conceptual or procedural content (e.g., Collins, Thomas, & Salzberg, 2009). This type of outcome is likely to generate the simplest of learning activities. Subsequent to viewing the material, likely tasks could include listing the key points made in the video, identifying and recognizing important equipment and functions and recalling the sequence of actions in a given process.

b) Directly instruct/describe: In some articles, the declared outcome of the video material or technology was to convey factual, conceptual or procedural content. Here the intention of providing video material was so the viewer can understand how a certain phenomenon was occurring (e.g., Cherney, 2008). This outcome is most likely to generate activities such as summarising the steps viewed, classifying these steps into categories, and making predictions about similar contexts and applications.

c)   Provide exemplars: This category groups the research that focuses on the provision of showing what competency, best practice or mastery looks like (e.g., Kurz & Batarelo, 2010). Here the intention of providing video material was aspirational, an opportunity to describe a set of practices and capabilities worthy of emulation. An exemplar is likely to be accompanied by the activities that require the learner to carry out similar procedures in a range of different situations with slightly different variables at play. This outcome may involve activities such as providing advice to novices, carrying out the same processes and using similar procedural techniques in different settings.

d)   Show real life practices and contexts: In this grouping the declared outcome of the research was to use video material in order to provide learners with an opportunity to conduct some form of analysis (e.g., Karsenti & Collin, 2011). It is reasonable to assume that video materials designed to foster analytical skills are more likely to generate particular kinds of activities such as differentiating data into conceptual categories, deconstructing biases and integrating disparate facts and conditions within unexpected or unusual contexts.

e)   Show complexity and trigger better practices: An explicit link is made in some articles between the value in using video to show complexity for learning and how this can be linked to higher-order learning activities such as reflection and making judgements (e.g., Leijen, Wildschut, Robert-Jan Simons & Admiraal, 2009). In this category, the articles identify how video materials are particularly well-suited to higher order learning tasks such as determining relevance of an argument and locating and describing patterns of logic and argumentation. In this category video materials are used as a trigger to make value judgements that can be substantiated and argued at a scholarly level.

f)   Democratise video production: In this category the affordability of video equipment and ease of use of editing software is often invoked as the reason for providing students with the capacity to produce their own materials (e.g., Cox, Vasconcelos, & Holdridge, 2010). However, this body of research does not just investigate student productions. It also includes many exhortations and guidelines for lecturers to produce their own videos as well. This democratisation of production is concerned with creation, the value of both students and teachers alike to achieve the capacity to design, assemble and produce video materials.

Educational topic categories

g)   Assistive or accessible delivery: Articles assigned to this category made explicit reference to how the video material or technology can specifically help in the teaching of visually-impaired and hearing-impaired students as well as students with other disabilities (e.g., Fajardo, Parra & Canas, 2010). These articles identify certain technical features of video technologies such as descriptive transcripts and captioning as a main reason for advocating adoption. Other articles in this category focus on how video can be used to raise awareness about disability.

h)   Flexible delivery: It is perhaps unsurprising to find that many articles co-locate video usage for teaching and learning with the move to deliver tertiary courses flexibly (e.g., Horspool & Lange, 2012). The drive toward flexible delivery relies heavily on the provision of online environments, environments that allow for video materials and technologies to be leveraged for teaching and learning. In these articles the references to video are not specifically about pedagogical strategies and activities, but rather about how video can help enrich a change in delivery mode.

i)   Research pedagogic processes: The use of video technologies to capture research data for teaching and learning scholarship has been applied to a range of themes including patterns of teaching practice, literacy and the teaching of particular disciplines (e.g., Knewstubb & Bond, 2009). Similarly, this category includes the work that uses video materials as a way to present and disseminate research activities.

j)   To assess: This category includes the research that explores how video material can be used to trigger assessment tasks in both formative and summative ways (e.g., Hertenstein & Waywand, 2008).

k)   To engage learners: Alongside the many articles that specify an outcome in terms of cognitive ability (to analyse, to evaluate), are the articles that instead explore how the video materials or technologies

can serve to motivate learners (e.g., Malin, 2010). These articles explore how video, irrespective of discipline area and pedagogic approach, can be used to engage and motivate students to take a deeper interest in specific content.

l) To move from shallow to deep learning: In some articles, the focus on video materials and technology as a teaching and learning resource was much greater than in others (e.g., Mitra, Lewin-Jones, Barrett, & Williamson, 2010). These articles tended to compare a range of teaching and learning approaches, some of which included the use of video. Furthermore these articles focused on illuminating how certain configurations of resources and activities could help move from shallow to deep teaching and learning approaches (Biggs, 1999).

m) Research social dynamics: This category groups together the articles that use video materials and technologies as a data source for researching a range of socio-cultural themes such as violence and aggression, gender and health (e.g., Bushman, Rothstein, & Anderson, 2010).

The categories of declared outcomes describe and partially answer the question of why video materials and technologies are being used in higher education teaching and learning. The review now turns to the related question of what kind of materials and technologies are being used.

Video production types

a) *Fly on the wall* - Capturing real life practices and context: These videos take a fly-on-the-wall approach in which the emphasis is on producing material as seen from the perspective of a neutral observer, a faithful, unscripted snapshot of real life practices (e.g., Cross, Hicks, & Barwell, 2001). These productions can capture a single event of only a few minutes in length to a chronicle that last days, months and even years. Recording exchanges between professionals at work and the people they work with are common subject matters in this category. In this approach, the camera and camera crew are not acknowledged by any of the people filmed.

b) *Mashing up* - Manipulating, re-using and modifying existing video materials and repositories: This category is used to group any research that involves using or modifying video materials beyond their original intended purpose (e.g., Journell, 2009). This opportunistic approach to video production also includes research on the new platforms to deliver and distribute video materials such as vodcasting and social-networking platforms. This category includes the many ways existing video can be modified, transmitted, re-displayed and annotated for teaching and learning.

c) *Presenting to the camera* - Explanations, instructions and stories: The research in this category group together the productions that, in different ways and degrees, explicitly acknowledge the existence of the camera as proxy for the viewer (e.g., Blom-Hoffman, O'Neil-Pirozzi, Volpe, Cutting, & Bissinger, 2007). To put it another way, the viewer knows that the subject knows that they are being filmed. This category often includes simple *head and shoulder* shots of the subject as they give instructions to the camera as well as richer, documentary-style productions that draw upon voice over narration, interviews, overlay footage, motion graphics and other techniques common to free-to-air television.

d) *Dramatic works* - Dramatising, stylising or modelling real life practices and contexts: The research in this category involves video material that has been purposefully performed in some way. Here, the material could be either scripted or scaffolded and feature professional actors or enthusiastic amateurs. Similarly, the material might be presented as showing authentic contexts or highly stylized. Whatever technique or approach adopted, the video materials in this category of the research are extensively designed (e.g., Sancho, Sidener, Reeve, & Sidener, 2010) rather than simply captured and edited as in the *Fly on the wall* category.

e) Interviews, testimonials and vox pops: This production approach is often used as a primary scaffold for the *Presenting to the camera* category already described. There are a number of stylistic variations on what is really a very simple concept in this category – filming a person's head and shoulders as they speak to the camera or interviewer (e.g., Robson, 2011). Final productions in this category may or may not include the interviewer questions or prompts.

f)   Producing video games: This category stands apart from the others for the reason that producing a video game does not require the use of a camera and the other crew and equipment usually associated with video, film and TV media and technologies. That being said, the term *video* is frequently co-located with the term *gaming* and as such appears often in the higher education teaching and learning literature (e.g., Mathis, 2010). It is beyond the scope of this paper to explore this category in depth, however it is perhaps noteworthy that this category emerged due to frequent connections made between the term video and gaming entertainment in the research.

g)   Recording and/or transmitting a teaching event: Similar to fly on the wall, this category emerged due to the frequency with which lectures, tutorials and other formal teaching events appear in the research (e.g., Odhabi & Nicks-McCaleb, 2011). There is an emerging logistical difference between this category and the fly-on-the-wall approach as many formal teaching and learning spaces now have automated and less intrusive audio and visual capture technologies and workflows.

h)   Multiple production types and technologies: A number of scholarly works focused on video materials and technology much more specifically than others. One characteristic of this work was the tendency to analyse more than one production type and its relationship to teaching and learning (e.g., Chowdhury, Hambly Odame, & Hauser, 2010). This category features comparisons of technology, stylistic principles and authorship.

i)   Simulating/modelling/representing/capturing and capturing *hard to see* processes and contexts: This research category emerged as a result of the video production types that draw upon techniques used to create 2D and 3D animation (e.g., Farrelly, Joy, & Luxton, 1999) as well as video capture technology that has become increasingly precise and affordable in recent years (e.g., Eshach, 2010). Although technically different from an equipment and workflow point of view, simulating and capturing production styles are put together in this category as they share a design intent to make visible processes and phenomenon that are hard to see and visualise.

j)   Video diaries: From a production point of view, this category is perhaps one of the simplest to create. The introduction of webcam, audio-capture and simple desktop editing software has made possible the design and research of teaching activities that use these technologies and the materials they generate (e.g., Boske, 2011).

k)   Video enabled communication and collaboration: Similar to the above category, the growing availability of desktop computer video and audio capture hardware along with the various software that enable transmission and editing has made possible a range of communication and collaboration activities to be brought into higher education teaching and learning (e.g., Gibbs & Larson, 2007; Smyth, 2011). This body of research includes explorations of how video-conferencing in large lecture classes operates as well as teamwork and learner-to-learner interactions.

The categorisations of the video production approaches were discussed at length with a number of professionals within the film and television industry. Those discussions confirmed that this suite of categories is a meaningful way for the layperson to understand the range of production approaches possible. As with similar analyses (Tight 2003, 2007), other researchers could follow the same methodology and devise other categories, but this does not compromise the analysis presented in this paper.

The video production and declared outcome categories that emerged are summarised in Table 1 and 2. Having described each of the categories generated by this process, the paper now turns to present a series of diagrams that assists in visualising the frequency of articles that are found in and within each category.

Table 1
Summary of video production categories in higher education teaching and learning research

Video production types categories	No. of articles
Fly on the wall: Capturing real life practices and contexts	118
Interviews, testimonials and *vox pops*	9
Multiple production types and technologies	47
Producing video games	124
Recording and/or transmitting a teaching event	25
Simulating, modelling or capturing *hard to see* processes and contexts	25
Unclear	26
Video diaries	9
Video enabled communication/collaboration	27
Dramatic works: Dramatising, stylising or modelling real life practices and contexts	63
Mashing up: Manipulating, re-using & modifying existing video materials & repositories	84
Presenting to the camera: Explanations, instructions and stories	146
Total	**703**

Table 2
Summary of declared video outcomes categories in higher education teaching and learning research

Declared video outcomes	No. of articles
Learning objectives	
Show factual and procedural content	29
Directly instruct/describe	67
Provide exemplars	75
Show real life practices and contexts	87
Show complexity and trigger better practices	47
Democratise video production	58
Educational topic	
Absent or other	5
Assistive or accessible delivery	10
Flexible delivery	93
Research pedagogic processes	67
Research social dynamics	33
To assess	14
To engage learners	67
To move from shallow to deep learning	51
Total	**703**

Comparing the categories

Figures 1 and 2 display the proportion of video production types and declared outcomes found in the literature. Figures 3 & 4 and 5 & 6 represent two comparative data sets: (i) Figures 3 & 4 are displayed over 2 pages and present how each production type is used for which outcomes, and (ii) Figures 5 & 6 are also displayed over two pages and show how each outcome is supported by which production types. Figure 3 shows, for example, the frequency and range of declared outcomes identified as achievable with a presenting to the camera production approach. In a similar way Figure 6 shows the range of production

approaches used in order to engage learners.
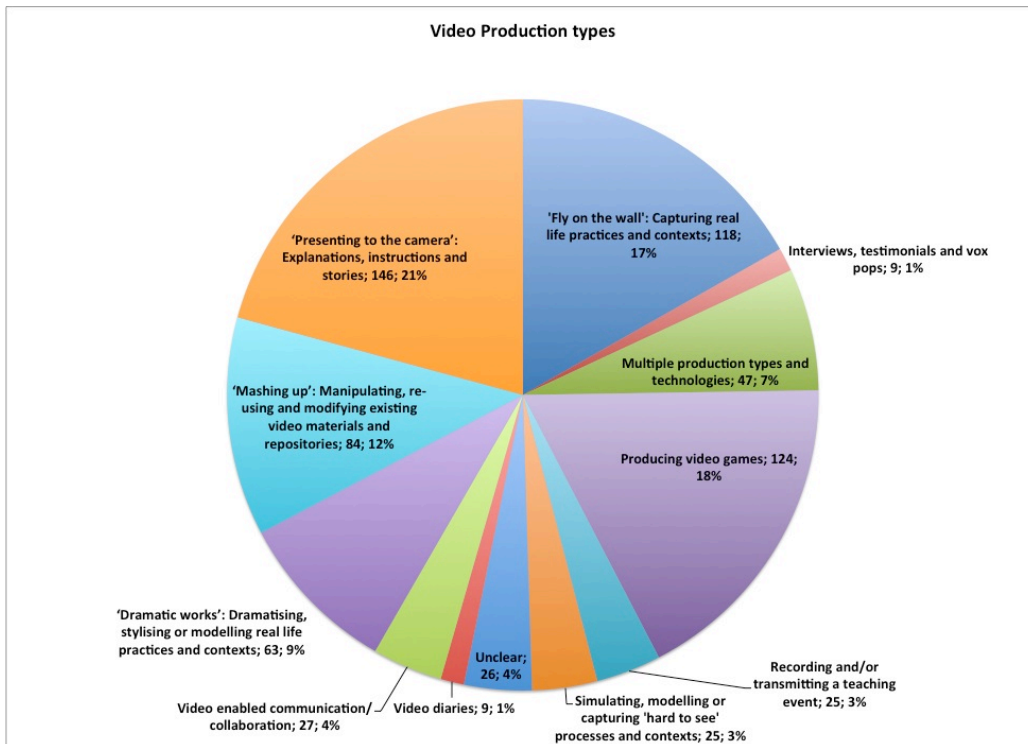
Figure 1. Video production types: 1997-2011 articles about video usage in academic higher education teaching and learning journals via production approach
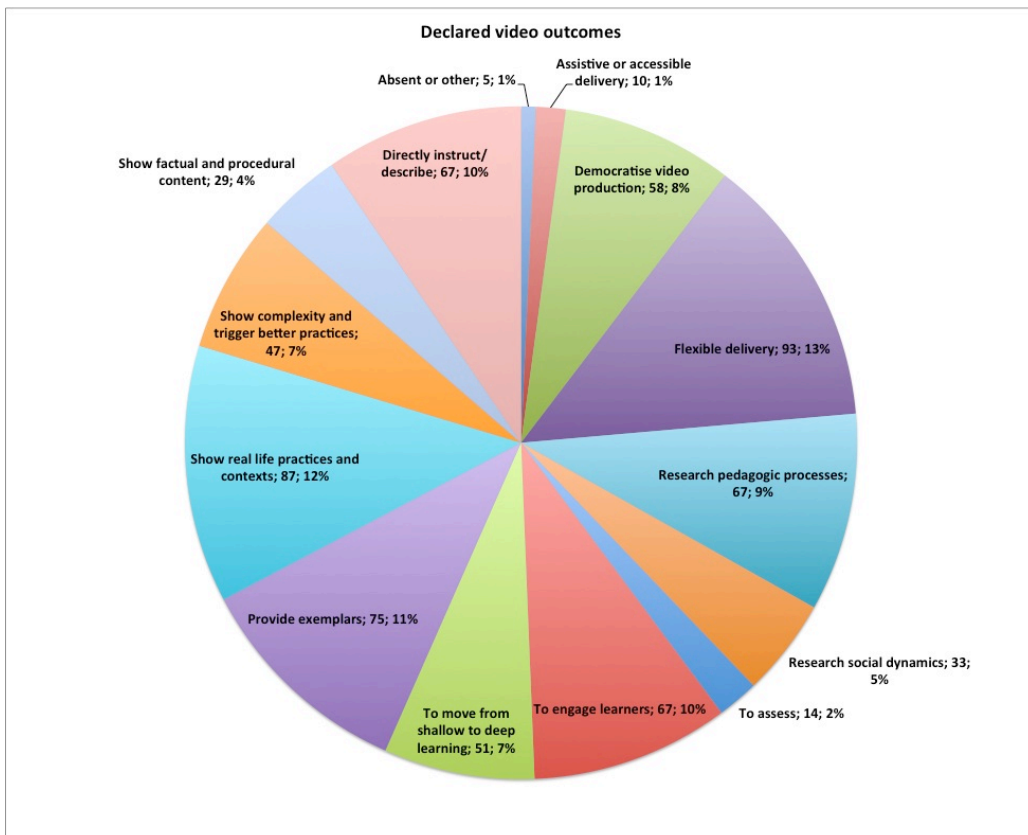
Figure 2. Declared video outcomes: 1997-2011 articles about video usage in academic higher education teaching and learning journals via declared outcomes

Breakdown of production types into declared outcomes

Number of articles per declared video outcomes

Video production type

'Presenting to the camera': Explanations, instructions and stories
- Directly instruct/describe, 65
- Show factual and procedural content, 1
- Show complexity and trigger better practices, 9
- Show real life practices and contexts, 20
- Provide exemplars, 4
- To move from shallow to deep learning, 13
- To engage learners, 4
- To assess, 1
- Research pedagogic processes, 3
- Flexible delivery, 2
- Democratise video production, 23
- Absent or other, 1

'Mashing up': Manipulating, re-using and modifying existing video materials and repositories
- Show complexity and trigger better practices, 11
- Show real life practices and contexts, 17
- To move from shallow to deep learning, 6
- To engage learners, 3
- Research pedagogic processes, 7
- Flexible delivery, 28
- Democratise video production, 5
- Assistive or accessible delivery, 7

'Dramatic works': Dramatising, stylising or modelling real life practices and contexts
- Show complexity and trigger better practices, 1
- Show real life practices and contexts, 2
- Provide exemplars, 48
- To move from shallow to deep learning, 3
- To assess, 2
- Research pedagogic processes, 3
- Democratise video production, 4

Video enabled communication/collaboration
- Show complexity and trigger better practices, 1
- Show real life practices and contexts, 1
- Research pedagogic processes, 1
- Flexible delivery, 22
- Democratise video production, 1
- Assistive or accessible delivery, 1

Video diaries
- Show complexity and trigger better practices, 4
- Research pedagogic processes, 3
- Democratise video production, 2

Unclear
- Show factual and procedural content, 1
- Show complexity and trigger better practices, 2
- Provide exemplars, 1
- To move from shallow to deep learning, 2
- To engage learners, 1
- To assess, 7
- Research pedagogic processes, 3
- Flexible delivery, 4
- Democratise video production, 4
- Absent or other, 1

Figure 3. 1997-2011 Video production types categorised via declared outcome (Part 1)

Figure 4. 1997-2011 Video production types categorised via declared outcome (Part 2)

Breakdown of declared outcomes into production types

Absent or other
'Presenting to the camera': Explanations, instructions and stories, 1

Unclear, 1
Simulating, modelling or capturing 'hard to see' processes and contexts, 1

Producing video games, 1

'Fly on the wall': Capturing real life practices and contexts,1

Assistive or accessible delivery
'Mashing up': Manipulating, re-using and modifying existing video materials and repositories, 7

Video enabled communication/collaboration, 1

Multiple production types and technologies, 2

Democratise video production
'Presenting to the camera': Explanations, instructions and stories, 23
'Mashing up': Manipulating, re-using and modifying existing video materials and repositories, 5
'Dramatic works': Dramatising, stylising or modelling real life practices and contexts, 4
Video enabled communication/collaboration, 1
Video diaries, 2
Unclear, 4
Simulating, modelling or capturing 'hard to see' processes and contexts, 1

Producing video games, 1
Multiple production types and technologies, 10

'Fly on the wall': Capturing real life practices and contexts,7

Flexible delivery
'Presenting to the camera': Explanations, instructions and stories, 2
'Mashing up': Manipulating, re-using and modifying existing video materials and repositories, 28
Video enabled communication/collaboration, 22

Unclear, 4
Simulating, modelling or capturing 'hard to see' processes and contexts, 4
Recording and/or transmitting a teaching event, 21
Producing video games, 2
Multiple production types and technologies, 7

'Fly on the wall': Capturing real life practices and contexts,3

Research pedagogic processes
'Presenting to the camera': Explanations, instructions and stories, 3
'Mashing up': Manipulating, re-using and modifying existing video materials and repositories, 7
'Dramatic works': Dramatising, stylising or modelling real life practices and contexts, 3
Video enabled communication/collaboration, 1
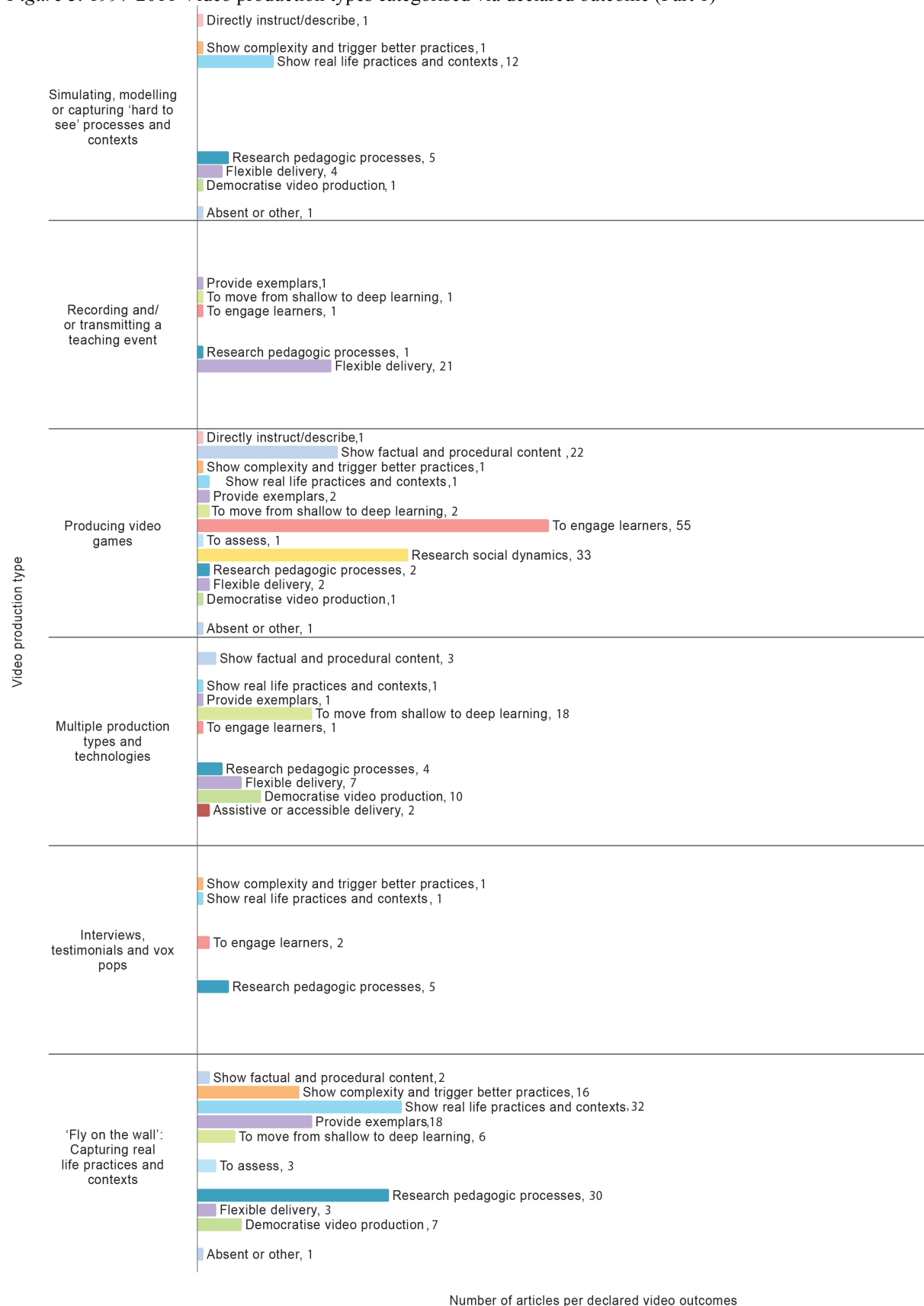Video diaries, 3
Unclear, 3
Simulating, modelling or capturing 'hard to see' processes and contexts, 5
Recording and/or transmitting a teaching event, 1
Producing video games, 2
Multiple production types and technologies, 4
Interviews, testimonials and vox pops, 5
'Fly on the wall': Capturing real life practices and contexts,30

Research social dynamics

Producing video games, 33

To assess
'Presenting to the camera': Explanations, instructions and stories, 1

'Dramatic works': Dramatising, stylising or modelling real life practices and contexts, 2

Unclear, 7

Producing video games, 1

'Fly on the wall': Capturing real life practices and contexts,3

Declared video outcomes

Number of articles per video production type

Figure 5. 1997-2011 Declared outcomes categorised via video production types (Part 1)

Declared video outcomes

To engage learners
- 'Presenting to the camera': Explanations, instructions and stories, 4
- 'Mashing up': Manipulating, re-using and modifying existing video materials and repositories, 3
- Unclear, 1
- Recording and/or transmitting a teaching event, 1
- Producing video games, 55
- Multiple production types and technologies, 1
- Interviews, testimonials and vox pops, 2

To move from shallow to deep learning
- 'Presenting to the camera': Explanations, instructions and stories, 13
- 'Mashing up': Manipulating, re-using and modifying existing video materials and repositories, 6
- 'Dramatic works': Dramatising, stylising or modelling real life practices and contexts, 3
- Unclear, 2
- Recording and/or transmitting a teaching event, 1
- Producing video games, 2
- Multiple production types and technologies, 18
- 'Fly on the wall': Capturing real life practices and contexts, 6

Provide exemplars
- 'Presenting to the camera': Explanations, instructions and stories, 4
- 'Dramatic works': Dramatising, stylising or modelling real life practices and contexts, 48
- Unclear, 1
- Recording and/or transmitting a teaching event, 1
- Producing video games, 2
- Multiple production types and technologies, 1
- 'Fly on the wall': Capturing real life practices and contexts, 18

Show real life practices and contexts
- 'Presenting to the camera': Explanations, instructions and stories, 20
- 'Mashing up': Manipulating, re-using and modifying existing video materials and repositories, 17
- 'Dramatic works': Dramatising, stylising or modelling real life practices and contexts, 2
- Video enabled communication/collaboration, 1
- Simulating, modelling or capturing 'hard to see' processes and contexts, 12
- Producing video games, 1
- Multiple production types and technologies, 1
- Interviews, testimonials and vox pops, 1
- 'Fly on the wall': Capturing real life practices and contexts, 32

Show complexity and trigger better practices
- 'Presenting to the camera': Explanations, instructions and stories, 9
- 'Mashing up': Manipulating, re-using and modifying existing video materials and repositories, 11
- 'Dramatic works': Dramatising, stylising or modelling real life practices and contexts, 1
- Video enabled communication/collaboration, 1
- Video diaries, 4
- Unclear, 2
- Simulating, modelling or capturing 'hard to see' processes and contexts, 1
- Producing video games, 1
- Interviews, testimonials and vox pops, 1
- 'Fly on the wall': Capturing real life practices and contexts, 16

Show factual and procedural content
- 'Presenting to the camera': Explanations, instructions and stories, 1
- Unclear, 1
- Producing video games, 22
- Multiple production types and technologies, 3
- 'Fly on the wall': Capturing real life practices and contexts, 2

Directly instruct/ describe
- 'Presenting to the camera': Explanations, instructions and stories, 65
- Simulating, modelling or capturing 'hard to see' processes and contexts, 1
- Producing video games, 1

Number of articles per video production type

Figure 6. 1997-2011 Declared outcomes categorised via video production types (Part 2)

Video usage in higher education teaching and learning

From this review a number of observations are made possible. Firstly, there are a number of patterns within the mappings between specific production types and declared outcomes that are of interest. Why is it for example, that a declared outcome of *showing complexity* has such a range of video production types featuring in the research whereas an outcome of *providing exemplars* is mostly supported in the research with the *dramatic* video production approach. Furthermore why are exemplars being provided via dramatic, scripted productions, rather than fly on the wall of actual best practices? Similarly, why are the video materials that record teaching events overwhelmingly about flexible delivery, than say moving students from shallow to deep learning? Similar questions can be asked of each and every category breakdown. These questions do not presume that these journal articles are in any way flawed, but it does perhaps indicate that the mapping of certain video production approaches and outcomes is perhaps being influenced by other factors.

Secondly, the relatively high frequency of *presenting to the camera* productions indicates that educational video is mostly understood as a genre in which content is explained. This is in contrast with a film and TV culture in which much content and concepts are shown not told. Furthermore, genre categories such as comedy, documentary and drama form part of an everyday vocabulary of free-to-air video consumption for entertainment, but do not feature in the research about video usage in higher education teaching and learning. If it is widely accepted that video provides a powerful way to evoke a range of emotional responses, then the question is raised: Why is there an apparent reticence to explicitly identify these strengths in higher educational video materials? Instead, descriptions of video material tend to focus on content-delivery. That being said, there would seem to be some interest in the more emotive elements of video usage, particularly if a link is made between these emotive features and the drive toward engaging students. The trope of engagement, among other things, stands proxy for an interest in the conditions that motivate students to undertake learning activities that are challenging and time-consuming with outcomes that may not be immediately apparent. This silence may represent an opportunity to explore other areas of scholarship that have perhaps engaged more deeply in how video materials may help generate a range of useful emotive states; from whimsy and curiosity, to outrage and provocation. Applying the thinking discovered in these areas to the design of video materials and technology within a university-learning context would resonate with the need and value of providing tertiary students with rich and authentic learning environments.

Thirdly, the high frequency of video materials used to enable an outcome of *flexible delivery* perhaps reflects changes in what video materials and technologies can now be used for. Others have already indicated that certain technologies represent an opportunity to re-think learning experiences and opportunities for students. McGarr (2009) for example sees the advent of podcasting as both a new way to do an old thing (information transmission) and an opportunity to transform the ability for students to actively create and engage with discipline knowledge (knowledge construction). The fact that flexible delivery features so highly amidst the research on video usage could indicate we are approaching a turning point in how video materials could be produced and for what.

Fourthly, the literature seems to be suffering from an *everything works* syndrome. Generally, video usage was reported on favourably, perhaps indicating a tendency to compare video usage against not having the video materials at all rather than comparing one set of materials against other style of production, or considering alignment between video materials and a range of other outcomes. Given the expense of producing some video materials this is perhaps unsurprising.

Fifthly, the vocabularies of film and TV production appear conspicuously absent. Video materials are by their nature visual and a great deal of thought and research has gone into considering how different production techniques convey different messages. For example, a mise-en-scène understanding of educational video offers a shared vocabulary to consider how lighting, proxemics, framing, depth of field, camera angle, lens and film stock, composition and form may be used to support particular outcomes and signify specific learning activities. Not considering these vocabularies or ways of thinking is to risk conveying a visual element that runs contrary to the desired outcome. For example, poor consideration of these elements may result in a person who is considered an expert in their field being filmed as if they were a novice, unsure of their experience or position. Although much of the literature reviewed does

describe the process of design and pre-production, specific mention of production techniques appears mostly absent.

Sixthly, and perhaps most significantly, is the almost total lack of attention given to the costs related to certain video production types. Issues of scalability, sustainability and return on investment are conspicuously absent in this body of research and must be addressed if produced video materials are to play a part in the teaching and learning experiences of higher education students.

Finally, it may be that the decision making that supports selection of particular video material styles does not come primarily from teaching and learning scholarship but a range of other, more local factors such as funding, availability of appropriately trained staff and presage exposure to other experiences of what counts as educational video.

Concluding remarks

What then counts as educational video? Clearly, there exists an extensive range of what can be considered as educational video and appropriate outcomes achievable with video. Perhaps a better question is what counts as an effective educational video? The categories in this review provide one possible framework to consider types of video production and technologies and what they may be used for. Implicit in these categories is the likelihood of needing professional video production personnel at some level to create or guide its design. Given the speed of technological advances, this too is likely to change over time. How academic teaching teams decide between the array of video production staffing approaches and styles remains complex, as does the methods by which parts of the curricula are deemed videogenic and therefore represent an appropriate return-on-investment. This paper cannot answer these questions definitely, but it is hoped that the review presented here provides some of the groundwork necessary in answering these questions and also contributes to on-going research in this area. It may be that there is some merit in devising a decision-making framework that helps align educational outcome to production approaches, specific techniques and cost. Until such time, it is hoped that the categories used in this review provide some exposure to the range of production styles and learning outcomes available with video usage. Among other things, this paper has demonstrated that there are opportunities to build on the existing scholarly literature by, for example, investigating differences between amateur and professional capabilities, exploring how discipline specific teaching and learning outcomes are well suited to certain types of productions, by more deeply engaging with the scholarship that maps video materials to emotive states. Finally, and perhaps most importantly, there is an opportunity to pursue quality metrics and evaluation techniques that assist in determining the cost benefits that video materials, from all economies of scale, can provide. Given the changes in social networking technology, video production and on-line learning, the imperative to engage in this area of research is only increasing in importance.

References

Allday, A. (2011). IBISWorld Industry Report P9111. Lights, camera, action: Continued government support helps revenue growth. Retrieved from IBISWorld database.

Blom-Hoffman, J., O'Neil-Pirozzi, T., Volpe, R., Cutting, J., & Bissinger, E. (2007). Instructing parents to use dialogic reading strategies with preschool children: Impact of a video-based training program on caregiver reading behaviors and children's related verbalizations. *Journal of Applied School Psychology, 23*(1), 117-131.

Biggs, J. (1999). What the student does: teaching for enhanced learning. *Higher Education Research & Development, 18*(1), 57-75.

Boske, C. (2011). Audio and video reflections to promote social justice. *Multicultural Education & Technology Journal, 5*(1), 70-85.

Bushman, B. J., Rothstein, H. R., & Anderson, C. A. (2010). Much ado about something: Violent video game effects and a school of red herring. --Reply to Ferguson and Kilburn (2010). *Psychological Bulletin, 136*(2), 182-187.

Cherney, I. D. (2008). The effects of active learning on students' memories for course content. *Active Learning in Higher Education, 9*(2), 152-171.

Chowdhury, A. H., Hambly Odame, H., & Hauser, M. (2010). With or without a script? Comparing two styles of participatory video on enhancing local seed innovation system in Bangladesh. *Journal of Agricultural Education and Extension*, *16*(4), 355-371.

Collins, S. H., Thomas, S., & Salzberg, C. L. (2009). The effects of video modelling on staff implementation of a problem-solving intervention with adults with developmental disabilities. *Journal of Applied Behavior Analysis, 42*(4), 849-854.

Cox, A. M., Vasconcelos, A. C., & Holdridge, P. (2010). Diversifying assessment through multimedia creation in a non-technical module: reflections on the MAIK project. *Assessment & Evaluation in Higher Education, 35*(7), 831-846.

Cross, V., Hicks, C., & Barwell, F. (2001). Exploring the gap between evidence and judgement: using video vignettes for practice-based assessment of physiotherapy undergraduates. *Assessment & Evaluation in Higher Education, 26*(3), 189-212.

Eshach, H. (2010). Re-examining the power of video motion analysis to promote the reading and creating of kinematic graphs. *Asia-Pacific Forum on Science Learning and Teaching, 11*(2).

Fajardo, I., Parra, E., & Canas, J. J. (2010). Do Sign Language Videos Improve Web Navigation for Deaf Signer Users?. *Journal of deaf studies and deaf education*, *15*(3), 242-262.

Farrelly, F., Joy, S., & Luxton, S. (1999). Marketing theory and practice on-line: A development towards international collaboration. *Higher Education in Europe, 24*(2), 287.

Fraser, N. (1989). *Unruly practices: Power, discourse and gender in contemporary social theory*. Cambridge: Polity Press.

Gibbs, B., & Larson, E. (2007). Using video conferencing in lecture classes. *Innovate: Journal of Online Education*, *3*(5), n5.

Hertenstein, M. J., & Waywand, J. F. (2008). Video-based test questions: A novel means of evaluation. *Journal of Instructional Psychology*, *35*(2), 188.

Horspool, A., & Lange, C. (2012). Applying the scholarship of teaching and learning: student perceptions, behaviours and success online and face-to-face. *Assessment & Evaluation in Higher Education, 37*(1), 73-88.

Journell, W. (2009). Using YouTube to teach presidential election propaganda: Twelve representative videos. *Social Education*, *73*(7), 325-329.

Karsenti, T., & Collin, S. (2011). The impact of online teaching videos on Canadian pre-service teachers. *Campus-Wide Information Systems*, *28*(3), 195-204.

Knewstubb, B., & Bond, C. (2009). What's he talking about? The communicative alignment between a teacher's intentions and students' understandings. *Higher Education Research & Development, 28*(2), 179-193.

Kurz, T. L., & Batarelo, I. (2010). Constructive features of video cases to be used in teacher education. *TechTrends*, *54*(5), 46-52.

Leijen, Ä., Lam, I., Wildschut, L., Robert-Jan Simons, P., & Admiraal, W. (2009). Streaming video to enhance students' reflection in dance education. *Computers & Education*, *52*(1), 169-176.

Malin, G. (2010). Is it still considered reading? Using digital video storytelling to engage adolescent readers. *Clearing House: A Journal of Educational Strategies, Issues and Ideas, 83*(4), 121-125.

Mathis, J. D. (2010). Increasing the Capacity of College Counseling through Video Game Design. *Journal of College Admission*, *209*, 14-23.

McGarr, O. (2009). A review of podcasting in higher education: Its influence on the traditional lecture. *Australasian Journal of Educational Technology,* 25(3), 309-321. Retrieved from http://www.ascilite.org.au/ajet/ajet25/mcgarr.html

Mitra, B., Lewin‑Jones, J., Barrett, H., & Williamson, S. (2010). The use of video to enable deep learning. *Research in Post‑Compulsory Education*, *15*(4), 405-414.

Odhabi, H., & Nicks‑McCaleb, L. (2011). Video recording lectures: Student and professor perspectives. *British Journal of Educational Technology*, *42*(2), 327-336.

Robson, S. (2011). Producing and using video data in the early years: Ethical questions and practical consequences in research with young children. *Children & Society, 25*(3), 179-189.

Sancho, K., Sidener, T. M., Reeve, S. A., & Sidener, D. W. (2010). Two variations of video modeling interventions for teaching play skills to children with autism. *Education and Treatment of Children*, *33*(3), 421-442.

Smyth, R. (2011). Enhancing learner-learner interaction using video communications in higher education: Implications from theorising about a new model. *British Journal of Educational Technology, 42*(1), 113-127.

Tight, M. (2003). *Researching higher education*. Maidenhead: Open University Press.

Tight, M. (2007). Bridging the divide: A comparative analysis of articles in higher education journals published inside and outside North America, *Higher Education 53* (2), 235-253.

Corresponding author: Greg Winslett, gwinslet@une.edu.au