A framework for re-imagining video in higher education using playfulness

Stephan Caspar[a], Nicola Whitton[b], Peter Whitton[b]

[a]*School of Modern Languages, Carnegie Mellon University, Pittsburg, USA*
[b]*Durham Centre for Academic Development, Durham University, Durham, UK*

A R T I C L E   I N F O

A B S T R A C T

Increased availability of low-cost high-quality recording equipment, coupled with institutional beliefs about student digital expectations, has led to a greater use of educational video in higher education in recent years. Video has huge potential for engaging students and enhancing learning, but much educational video developed is underpinned by assumptions about the value of information transmission, and limited by cultural assumptions. It often fails to exploit its full potential to be immersive, emotionally resonant, interactive, experimental and innovative. This article explores the potential of playfulness in relation to educational video in higher education and presents a theoretical framework for understanding the possibilities of playful video by considering *who* is being playful (the person who makes the video or the person that watches it) and *when* playfulness happens (synchronously or asynchronously to the video). From this analysis, we identified four different approaches to playful video in higher education: *playful design* by making films that are intrinsically playful; *playful participation* by creating opportunities for playful interaction with video; *playful creation* using playful approaches to video making; and *playful action* with videos that inspire or instigate subsequent play. In this article we aim to start a process of legitimising playful video in academia and open a conversation about its full possibilities.

Introduction

In recent years, there has been a noticeable rise in the creation and consumption of video in higher education by both learners and educators (Carmichael, Reid, & Karpicke, 2018; Silveira, Chigami, Matushima, Ruggiero, & Stiubiener, 2015). This has been facilitated by the increased availability of technology to easily create and consume video; modern tablet devices and smartphones have integrated high-quality video cameras and the

processing power to allow recording and playback without expensive or cumbersome additional kit. Alongside this, improvements to connectivity and network speeds mean near instantaneous download, upload and playback of videos, extending opportunities for mobile learning (Kukulska-Hulme & Traxler, 2007). Moreover, the proliferation and popularity of video sharing services have, for those with access, simplified the distribution and production of videos, removing barriers to participation (Buchner, 2018; Burgess & Green, 2013). In addition to their use for entertainment, sites such as YouTube are a rapidly increasing source of educational and instructional content, and although video quality can be variable, educational content tends to be delivered by subject enthusiasts in a way that is relatable, direct and fun. The most popular channels provide a mix of education and entertainment, often in authentic and creative ways, where the presenters experiment with formats and styles. These platforms have also added an important social dimension to video consumption and production by enabling users to upload, rate, review, critique and discuss content with other users. These affordances of video media platforms for social interaction, knowledge sharing, construction, and creation (van Aalst, 2009) have informed the design of contemporary Virtual Learning Environments (Laaser & Toloza, 2017; Rante & Campbell, 2016) and Massive Open Online Courses (MOOCs) (Guo, Kim, & Rubin, 2014).

These conditions have led to the proliferation of video use throughout higher education in a wide variety of disciplinary contexts and applications. The range of activity includes using or repurposing existing video content within a classroom or online learning context, automatically recording live and online video lectures, developing personalised short video clips that are common in blended programmes, and producing corporate and high-spec video for commercial distance learning programmes. The ubiquity of video creation tools has also led to an increased use of video as a feedback tool (Weber, Gold, Prilop, & Kleinknecht, 2018) and as an alternative student assessment format (Hawley & Allen, 2019).

There is considerable evidence to show that watching videos may have a direct and positive impact on students' learning (Kay & Kletskin, 2012; Salina et al., 2012) and many learners report enjoying (Winterbottom, 2007) and being motivated by (Hill & Nelson, 2011) video-based learning. Lecturer-created video content can enhance student satisfaction and perception of value (Miller & Redman, 2010). Draus et al. (2014) found that video had a positive effect on student attitudes towards learning material, improved their performance, and had an important role in developing the social presence of lecturers in online and distance settings.

While the creation and consumption of video is widespread in higher education, and affords a range of potential benefits for learning, in this article we argue that its full potential is not being met. We contend that there is scope to introduce a playful approach to all aspects of video production and consumption, from the way that lecturers embed existing video resources in their teaching, from the creation of simple, self-made, video lectures, to the specialist design of more elaborate video productions.

Playful pedagogic approaches emphasise links between play, learning, creativity, and innovation, and draw inspiration from play in order to encourage a deeper engagement with learning activities (Carolan et al., 2018; James & Nerantzi, 2019; Koeners & Francis, 2020; Nørgård, Toft-Nielsen, & Whitton, 2017). Playful learning is based on assumptions:

- learners are intrinsically motivated to engage in explorative and curiosity-led learning and the exploration of ideas from alternate perspectives;
- learners are willing to suspend their disbelief, and accept the alternate rules of the play space with a lusory attitude (Suits, 1978);
- learning happens in a place of safety where students and teachers are able to try out new ideas, take risks, and where failure is seen as a natural and progressive constituent of the learning process.

In this paper we explore the possibilities of playful learning in relation to educational video, but there are barriers to use of this approach: both in the typical design of educational videos and in the dominant academic cultures in which they are used. Videos created and consumed in higher education tend to focus on a handful of well-established formats such as talking heads, 'ask the expert', screencasts or lecture slides and animations with voice-overs (Laaser & Toloza, 2017). These have become the default accepted models of educational video design and tend to reproduce didactic teaching. They are relatively easy to create, and, for the most part, meet the expectations of both learners and teachers. While these approaches are not intrinsically bad, the focus on transmission of content presents a missed opportunity for creating videos that support deeper pedagogic engagement. These formats are often unadventurous and may not lend themselves to more creative or playful reinterpretation.

Video is often used passively, both in the classroom and as additional content integrated into online learning materials (Dodson et al., 2018). Students may be instructed to simply 'watch the video' in the hope that they will assimilate the material, make the necessary intellectual connections and be able to apply the content when required. Lecturers tend to select videos intuitively and may not be able articulate the selection in relation to learning aims (Wijnker, Bakker, Gog, & Drijvers, 2019). Playful pedagogies require a greater awareness of this link and a commitment to playful active learning (Whitton, 2018) where content is not just passively consumed, but is integrated into meaningful and authentic learning activities that in turn may trigger further discourse and calls to action. In order for video use to move from passive to 'active viewing' (Dodson et al., 2018) lecturers and students must be willing to recognise and concede the value that these non-traditional approaches have for learning and teaching.

Current approaches to video-based learning are generally underpinned by cognitive theories of multimedia learning (e.g. Ayres & Sweller, 2005; Clark & Paivio, 1991; Mayer, 2005). These theories address important

accessibility and usability concerns, and focus on the ways in which the brain processes video at the point of consumption, but they do not emphasise the creativity and playful potential implicit in the production of, and active engagement with, video as a medium. It may not be straightforward for an academic to adopt more playful pedagogies; embarking on a video project can be daunting for many lecturers, who may feel that they lack the technical and creative expertise to produce an engaging video, let alone the ability to integrate play into its design. Some may feel that a topic is sufficiently interesting in itself, and regard playful approaches as a frivolous distraction to the content. Furthermore, academics may feel more comfortable reproducing a modality that may already be familiar from lecturing (Laaser & Toloza, 2017; Thomson, Bridgstock, & Willems, 2014), hence a propensity for simply talking to camera.

Despite the growing research evidence of the value of educational video, the growing availability and ease-of-use of video creation tools and software, and the increased use of the medium due to the Covid-19 pandemic, the development of effective educational video in academia still presents cultural challenges. There exists a tension within academia of ensuring a consistent style of 'academic' presentation that is rooted in text; academics are trained to present ideas in writing, which is still the dominant medium of academic discourse. Many academics may feel that presenting content in this way goes against their very academic identity. Creating traditional educational videos is hard but developing creative videos outside of the mainstream is unthinkable. The digital pivot necessitated by the Covid-19 pandemic and the rapid upskilling and widespread use of video lectures may have changed opinions somewhat but the trend is still for video lectures across the sector.

Video-making is time-consuming and academics are typically time-poor; the space to think about the potential of visual images to provide meaning, narrative to draw the viewer into the story, and style as part of the learning message of the video is lacking from most lecturers' diaries. There may also be a tendency for academics to aspire to high-end production values and believe these are necessary for effective and 'professional' educational, despite the fact that there is little evidence that high production values increase learner engagement (Hansch et al., 2015). The ability to create polished professional-quality videos is (understandably) outside of the skill set of most lecturers but the assumption that this is the only appropriate way to use video in learning should not hamper the use of film.

In this article, we argue that the use of video in higher education will be effectively limited without the development of safe spaces for exploration and experimentation in the different techniques used in educational video; discovering the possibilities of the medium and taking risks in how video is used. A process is required for developing, evaluating and legitimising the innovative use of film, and applying a lens of play to video has the ability to support creativity, exploration and imagining possibilities, in a low-risk space to overcome the

cultural limitations to the true potential of video in universities. We provide a theoretical framework of the playful potential of video as a first step to overcoming the cultural barriers mentioned here, by starting a conversation on the possibilities of the medium, and legitimising creative approaches to their design, development and use.

A brief history of video in education

Thomas Edison is famously reported to have remarked that 'it is possible to teach every branch of human knowledge with the motion picture' (cited in Cuban, 1986, p. 9). He could evidently see huge potential for film as an educational medium. Although his prediction is yet to become reality, films have been used routinely in the classroom since the early 20th century, although initially as a niche activity (Ellis & Thornborough, 1923). Early films were created primarily as entertainment, with any educational merits being an additional bonus; although even in the early days of silent film, newsreels and travelogues were occasionally repurposed for educational use (Cuban, 1986).

As film, broadcast and distribution media evolved for entertainment, film also found uses in education with the advent of television and video recording devices (Aiex, 1988). The growth of the internet and networked computing has had a profound effect on the way that educational video is produced and consumed. Increasing data transfer speeds have opened video as an on-demand service for education and entertainment (Fyfield, Henderson, Heinrich, & Redmond, 2019).

The tools and knowledge required for film and video production were once only available to a few experts. However, the ubiquity of video streaming platforms, affordable video editing software and high-quality video cameras built into most smartphones has enabled both students and lecturers to become video creators, distributors and reviewers (Jisc, 2015; Laaser & Toloza, 2017). This democratisation of technology has changed the way that online learning materials are designed, but also the way they are viewed and regarded. In the past, the prohibitive cost and time-consuming nature of film production instilled it with a certain seriousness and prestige. Now, video sharing platforms have casualised the way that videos are consumed and this has impacted education; videos are often short-format, have low production values and are designed to be 'dipped into' when convenient (Chorianopoulos, 2020), whether this is in a classroom, on the bus, or in the coffee shop.

Over the past fifteen years, pre-recorded video lectures and demonstrations have become an integral component of Massively Open Online Courses (MOOCs), which offer large numbers of geographically dispersed learners access to online courses at no, or low, cost. MOOCs, and their widespread use of video as a primary delivery mechanism for lecture-style content, have provided opportunities to research the use of video as an educational medium on a large scale, and have been influential in the design of instructional video

throughout the sector. Research on the use of video in MOOCs highlights that to increase learner engagement film clips should be short (fewer than six minutes), that personality is more important than production value, locations and narration style should be informal, and enthusiasm is key (Guo et al., 2014).

More recently, the global Covid-19 crisis has seen a massive increase in the use of online learning, from early 2020 onwards, and a growth of general interest in training online, as workers are encouraged to acquire new skills from home (Organisation for Economic Co-operation and Development [OECD], 2020). This crisis has seen demand for video-based tuition peak and has re-focused the priorities of many higher education providers as they attempt to find solutions to the enforced distancing of staff and students (Lederman, 2020). This change in the willingness of lecturers to use, and confidence to experiment with, technology offers unprecedented opportunities for the use of video in education in creative and playful ways.

As an audio-visual medium, video can show, and help to explain, a range of phenomena that would be challenging without the ability to capture a motion image or show composite images. An early study by McClusky (1947) on the potential of educational film describes eleven genres (see Table 1) and suggests a context for their use and the type of learning that might result.

Table 1
Types of educational film (McClusky, 1947)

Film type	Description
Discursive	Introducing, summarizing, or providing material in a systematic way.
Drill	A series of actions that are presented to be copied by the viewer.
Emulative	Presents patterns of actions or how to perform an act or skill.
Evidential	Proposes scientific data for study.
Factual	Conveys information; a comprehensive presentation of an event or topic.
Incentive	Helps viewers change their character, their behaviour and their morale level.
Narrative	A fiction or real story that gives an account of events.
Dramatic	A story that is emotionally-loaded.
Problematic	Sets a problem for discussion and offers data for thinking.
Rhythmic	Video that aims to evoke aesthetical reactions through artistic effects.
Therapeutic	Rhythmic videos, used for psychoneurotic patients.

This still provides a useful overview of the possibilities of video, although more recent studies by Koumi (2014, 2015) describe 33 different pedagogic roles for video subdivided into four domains (facilitating cognition, providing realistic experiences, nurturing affective characteristics and demonstrating skills). Koumi (2015) describes several examples of the presentational attributes of video for aiding cognition when combined with a strong pedagogic rationale, such as showing two processes occurring simultaneously using a split screen effect (a loaded beam on the left of the screen with a shot of the strain gauge on the right) or illustrating complex or detailed systems (showing human anatomy by slowly fleshing out skeletons or archaeology by using superimposed graphics).

Koumi (2014) also suggests that video may provide amplified realistic experiences, for example, slow-motion cameras capturing almost instantaneous chemical reactions so that they can be observed and studied by the human eye. The reverse is also true; video can speed up time and motion, allowing events that unfold over long periods to be studied (Hancock & Bone, 1964) and amplifying otherwise inaccessible experiences such as plant growth or changing weather or astronomical conditions. Video can bring the real world into the classroom without the need for prohibitively expensive or time-consuming field trips and makes possible the presentation of subject matter that would not normally be possible in the classroom or in a home setting. For example, the study of dangerous phenomena (e.g., chemical reactions, viruses and pathogens), examining expensive or rare artefacts and fragile things (e.g., manuscripts and paintings), observing situations where a student presence would be intrusive (e.g., medical procedures) and revisiting one-off events (e.g., guest speakers and historic moments).

One of the most powerful and pervasive uses of educational video is in demonstrating skills, with much of the educational content on video sharing sites falling into this category, including crafts and manual skills, exercise, languages, and a whole range of interpersonal and technical skills. These videos often exemplify a 'cognitive apprenticeship' model (Collins, Brown, & Newman, 1989) with an expert demonstrating the technique and modelling the skill. Students are able to practice skills while being coached through progressively more challenging tasks. Support or scaffolding is reduced and progressively withdrawn as proficiency is reached.

Finally, Koumi (2014, 2015) also advocates using educational video to 'nurture affective feelings' – drawing narrative and dramatic inspiration from the entertainment industry to engage with the emotions and feelings of the viewer with aim of changing attitudes or motivations (Millar, 2005). Koumi describes potential uses of dramatisation in Social Work education to portray victims of abuse and engender empathy in the viewer, and lessons on climate change where the challenges are articulated from a personal point of view rather than a global, more emotionally detached, overview. At present, these techniques remain underexplored in educational video, which tends to focus on more direct forms of content delivery; most taxonomies of lecturer-created video emphasise the range of presentational formats (e.g. Chorianopoulos, 2020; Guo et al., 2014; Santos-espino, Afonso-suárez, & Guerra-artal, 2018), with a focus on the ubiquitous 'video-lecture' format. These have made the distinction between video styles that emphasise human embodiment (featuring talking heads or animated characters) and those that emphasise instructional media (for example, whiteboard or slides).

Video lectures can take several formats, including recordings of live face-to-face or online lecture events and 'performed' lectures (e.g., the TED talk format) recorded for viewing asynchronously. This format has become increasingly popular as educators experiment with 'flipped classroom' (Lage et al., 2000) approaches where learners view pre-recorded lectures online and use timetabled class time for collaborative and discursive

activities. A popular application of the video lecture is the screencast, where an audio/video recording of a presenter's computer screen is produced; these include narrated PowerPoint lectures, software demonstrations, and problem walkthroughs on an electronic whiteboard. Although there is a range of practice, these examples all essentially replicate existing didactic teaching practices in a video format (e.g. Silveira et al., 2015) rather than exploiting some of video's more distinctive presentational attributes (Koumi, 2014, 2015; Thomson et al., 2014).

Beyond the potential pedagogic benefits of educational video content itself, video playback tools can have a range of usability and accessibility benefits for learners (Merkt, Weigand, Heier, & Schwan, 2011). For example, the ability to stop, start and re-play content as desired, control the playback speed and volume, navigate to specific parts of the video using a table of contents, show the video progress and time remaining, download video for watching offline and alter the screen size. In addition, many video playback tools allow closed captioning and transcripts that can be used in a variety of ways such as revision guides, but also used within translation and screen reading software (Gernsbacher, 2015). It is important to consider the increased interactivity and control that learners have in modern digital environments; the tools that surround a video are also important for the holistic learning experience.

While this illustrates the untapped potential of video for consumption within higher education, perhaps greater scope for innovation and playfulness exists in the process of video creation by both staff and students. Much has also been written about the educational potential of students creating digital artefacts as part of their learning (Annan, Onodipe, & Stephenson, 2019; Hawley & Allen, 2019; Keegan & Bell, 2011) whether individually or collaboratively, with peers or directly with their lecturers as co-creators of knowledge. Although still a niche activity (Kaltura, 2015), students are increasingly asked to respond to assignment tasks with video or mixed media responses (Keegan, 2010; Keegan & Bell, 2011). Using video in this way connects with broader notions of literacy beyond the purely textual that include proficiency in the creation and critique of digital media (Hawley & Allen, 2019). Students who engage in pedagogically rich video production projects can apply their existing skills such as researching, scripting and storyboarding, while concurrently developing a range of digital, visual and technical literacies and specialist editorial competencies. Student-created video projects have been shown to promote feelings of personal ownership and can promote the use of higher-order thinking skills associated with planning complex project work in a variety of settings (Annan et al., 2019; Kearney & Schuck, 2006). Students engaged in video assessments have reported a heightened sense of engagement and satisfaction (Hawley & Allen, 2019) especially where their work will be viewed by peers, and may see video as responding to contemporary participatory culture (Burgess & Green, 2013; Keegan & Bell, 2011).

While there are clearly strong positive affordances of video in education, we believe that the medium is not meeting its full potential in terms of engaging learning and supporting deep learning. In the following section

we explore the possibilities of playful learning as a different approach for thinking about video in higher education.

The possibilities of playful learning

We believe there are two distinct benefits to considering educational video in relation to play: first, it offers a lens for thinking about the range of different ways in which video might be used in higher education beyond as a transmissional medium; second, it provides insights into ways in which we might, as an academic community, support a cultural shift in the legitimisation of educational videos beyond the 'talking head'.

Playful learning in higher education is an umbrella term that refers to the range of teaching tools (e.g., games, toys), pedagogic techniques (e.g., role play, problem-based learning), and tactics (e.g., storytelling, puzzles) that can be used in the higher education classroom (Whitton, 2018). Playful approaches have been growing in terms of practice and research in UK higher education over the past ten years (James & Nerantzi, 2019).

Playful learning is theoretically underpinned by notions of the 'magic circle of learning' (Nørgård et al., 2017), which expands on initial concept of the magic circle put forward by Huizinga (1955) originally, and refined and popularised by Salen and Zimmerman (2004) as the boundary between the game-space and the real world. When applied to learning contexts, inside the magic circle becomes a safe, collaborative 'virtual' space where learners engage with one another to explore possibilities and imagine new perspectives, immersing themselves in the 'rules' of the circle and putting progressive failure at the heart of learning. In this construction, the magic circle presents a blurred boundary – sometimes real, sometimes conceptual – between the real-world and the spaces of play, which are mutually agreed by those who play in, and around the edges of, these spaces. It separates the 'real-world' from the play space and represents a change in the rules of engagement within that space. It is an ideational metaphor for a learning space in which participants have the freedom to experiment and explore, either individually or collaboratively, without fear of the consequences of taking those actions in the real world. In relation to higher education, this represents a space where learners have high levels of agency and intrinsic engagement, where there is a context of trust and community that fosters an environment where students (and lecturers) are willing to take risks and are comfortable with failure, and where consequences are low (specifically activities are not directly related to assessment outcomes). Crucially, in terms of learning, the magic circle is a 'sacred place where teachers and learners transcend the managerialism and consumerism of higher education and set out to imagine and create manifold ways of being, doing, and knowing in the world through playful attitudes and approaches' (Nørgård et al., 2017, p. 274).

This safe magic circle of learning, lacking real-world consequences, enables learners to fail progressively, to see failure as an integral aspect of the learning process where it is not seen as the end of the process but as a vital

element of learning. This ability to embrace failure within the magic circle is key to the value of play in higher education, supporting students to manage failure emotionally and practically, learn to take measured risks that might result in failure, and to use this space productively to stimulate innovation. Underpinning playful learning must be a willingness for learners, and in some cases teachers, to voluntarily and willingly submit themselves to the rules of the magic circle (this is not to say that for some learners, playing within and around rules is not a game in itself). A third key aspect of the magic circle of learning is the intrinsically motivated nature of the engagement – people learn within the magic circle for its own sake because it is of intrinsic value and interest to them. Learning is driven by curiosity and need. By using the metaphor of the magic circle of learning, both for students learning from video, and lecturers developing them, we can start to imagine a space where participants feel they have the freedom to try new things, without undue fear of failure.

As well as the tools, techniques and tactics of playful learning, in their signature pedagogy of playful learning in higher education, Nørgård et al. (2017) clearly define playful learning as both a pedagogic and political project, identifying the importance of what they call 'implicit' or structures that underpin the paradigm. These are the values of playful learning, specifically: an openness to new ideas; democratic approaches to design and delivery; embedded integrity; and collegiality freely working with and sharing with others. As well as seeing playful learning as a set of approaches, this understanding of it as a philosophy with underpinning value set is important for considering what playful video might be: as more than just a series of tools but as an ethical approach to the use of video in education.

A framework of possibilities for playful video

In order to consider the full scope of possibilities of video for learning in higher education, and start to develop theory to overcome cultural objections to creative uses of video, we present a framework for considering the possibilities of playful video. We first undertook an exercise to consider different types of video that might be considered to be playful, in both the practical and philosophical senses, and then used this to develop an initial framework for understanding the potential of playful video in higher education and opening the conversation more widely. Considering the relevance of the magic circle and implicit values of playful learning provides a useful lens for re-imagining what playful video in higher education might look like.

Entertainment films are typically good at drawing viewers into alternative worlds as they suspend disbelief and journey with the characters, but we have also considered here how educational video could provide that safe and collaborative space for learning and mistake-making that the magic circle affords. We present an exploratory framework that shows how the tools, tactics, techniques, and values of playful learning, coupled with the safe space of the magic circle, could provide different models for exploring playful film.

When considering the possibilities of a playful approach to video, we considered the process of educational video holistically, from conception to design, creation, consumption, and follow-up. Two parameters then emerged from our analysis: *who* is playing and *when* are they playing. Considering the wider process of video-making there are essentially two different roles: the producer of the video (be that educational designer, film-maker, student) and the consumer (the person or people that watch the final product). In terms of when playfulness occurs it can either be synchronous with the video itself (i.e. it happens at the same time that the video is watched) or asynchronous (i.e. it happens before or after watching). Using the lenses of *when* and *who*, allowed us to consider different playful approaches that might be used in relation to educational video. These two lenses are shown in Figure 1 below, which highlights four different ways in which playful film might be manifested depending on *who* is playing, and *when*.

Figure 1
A two-dimensional framework for considering the possibilities of playful educational video

		When	
		Synchronous	**Asynchronous**
Who	**Producer**	Playful design	Playful creation
	Consumer	Playful participation	Playful action

This figure highlights four different approaches to play in educational video, depending on whether the focus is on production of the video or consumption, and whether the playfulness is synchronous or asynchronous to viewing.

Playful design refers to videos that are designed as playful products and are explicitly playful in and of themselves. For example, videos that are presented playfully such as wacky explainers, or narratives, or videos that use elements of play such as humour, playing with tropes, surprises, mysteries, multi-linearity, or embedding of hidden Easter eggs. Playful participation refers to affording playful engagement in the ways that learners interact with the video itself while watching it. This might include interactivity built into the video such as branching narratives or films with alterative endings, or added by the person watching the video, such as stopping and carrying out additional research online. This interactivity can be in ways that were intended by the filmmakers, such as audience interaction in films such as *Sing-a-long-a* movies that encourage audience participation, or in unintended ways such as movie drinking games. Playful creation refers to the situation where the playfulness of the film takes place during the development of the video itself. Examples might include *Taskmaster*-style video challenges, or video embedded in an activity such as a treasure hunt. Playful

action refers to videos that inspire the viewer to undertake playful activities after it has finished. For example, calls to action in augmented reality games, or challenge videos such as the 'ice bucket challenge'. This might also include videos that have embedded puzzles that require multiple re-watching or disassembling the video files themselves.

While we have identified four different approaches to playful video, we do not argue that they are mutually-exclusive, nor mutually essential. It is quite possible that a video designed to be playful was not created playfully, equally possible that a serious video can be watched playfully. In our analysis we do not make any judgement on how the different approaches might be used individually or in combination, but simply open the conversation on possibilities for different ways of conceptualising playful video.

Conclusions

In this article, we have presented a framework of possibilities for playful video in higher education, based on the ideas of playful learning, which has identified four different approaches to creating playful video in higher education. In this analysis, we have aimed to highlight possibilities for video beyond 'talking heads' and passive consumption of video for learning, based on didactic models of information transfer. As educational video becomes increasingly ubiquitous, we hope to inspire creative ways of developing and engaging with the medium that enables academics to feel confident developing new approaches and taking risks.

We present this framework of four types of playful video: playful design, participation, creation, and action – as a tool for teachers, lecturers, and learning developers to thinking about the possibilities of video and re-imagine different ways in which it might be used to support learners in a variety of ways. We do not present this as a rigorous taxonomy but as a set of possibilities that educators can use to develop their own creative practices. At the conception of a video development project, the following questions may be useful:

- How can the content of a video be made intrinsically playful?
- How can viewers engage playfully while watching the video?
- How can we create the video in a playful way?
- How can the video inspire others to do something playful afterwards?

Even something as simple as these prompts may provide a subtle re-framing that helps us to think differently about educational video in higher education. As well as highlighting the possibilities of video, playful approaches also present opportunities for creating safe spaces for academic creativity, and we hope that we have started a process of legitimising playful approaches, and starting to overcome some of the cultural barriers to innovation in this context.

Of course, as with any emergent educational form, there is a need to research and evaluate the impacts of

playful video and its development process and uses, particularly to ensure that its use does not lead to unintended negative consequences or exclusionary practices. As with all educational forms, playful video will not be appropriate for all teaching, and we do not put it forward as a panacea here, but should be seen as part of a wider toolkit of approaches that lecturers feel confident in using when appropriate to increase student engagement and learning.

References

Aiex, N. K. (1988). Using film, video, and TV in the classroom. ERIC Digest Number 11. *ERIC Clearinghouse on Reading and Communication Skills.*, (11), 1–7. Retrieved from https://eric.ed.gov/?id=ED300848

Annan, D. K., Onodipe, D. G., & Stephenson, D. A. (2019). Using student-created content videos in flipped learning to enhance student higher-order thinking skills, engagement, and satisfaction. *Journal of Education & Social Policy*, *6*(3), 22–31. doi:10.30845/jesp.v6n3p4

Ayres, P., & Sweller, J. (2005). The split-attention principle in multimedia learning. In R. Mayer (Ed.), *The Cambridge Handbook of Multimedia Learning* (pp. 135–146). Cambridge: Cambridge University Press.

Buchner, J. (2018). How to create educational videos: From watching passively to learning actively. *R&E-Source*, *12*(September), 1-10. Retrieved from http://journal.ph-noe.ac.at

Burgess, J., & Green, J. (2013). *YouTube: Online video and participatory culture*. Hoboken, NJ: John Wiley & Sons.

Carmichael, M., Reid, A. K., & Karpicke, J. D. (2018). *Assessing the impact of educational video on student engagement, critical thinking and learning: The current state of play*. Retrieved from https://us.sagepub.com/sites/default/files/hevideolearning.pdf

Carolan, K., Verran, J., Crossley, M., Redfern, J., Whitton, N., & Amos, M. (2018). Impact of educational interventions on adolescent attitudes and knowledge regarding vaccination: A pilot study. *PLoS ONE*, *13*(1). doi:10.1371/journal.pone.0190984

Chorianopoulos, K. (2020). A taxonomy of asynchronous instructional video styles. *International Review of Research in Open and Distributed Learning, 19*(1), 294-311. doi:10.19173/irrodl.v19i1.2920

Clark, J. M., & Paivio, A. (1991). Duel coding theory and education. *Educational Pycology Review*, *3*(3), 149–210.

Collins, A., Brown, J. S., & Newman, S. E. (1989). Cognitive apprenticeship: Teaching the crafts of reading, writing and mathematics. In L. B. Resnick (Ed.), *Knowing, learning, and instruction: Essays in honor of Robert Glaser* (pp. 453-494). New York: Routledge.

Cuban, L. (1986). *Teachers and machines: the classroom use of technology since 1920.* New York: Teachers College

Press.

Dodson, S., Roll, I., Fong, M., Yoon, D., Harandi, M. R., & Fels, S. (2018). Active viewing: A study of video highlighting in the classroom. *CHIIR '18: Proceedings of the 2018 Conference on Human Information Interaction & Retrieval*, New Brunswick, NJ, 237–240. doi:10.1145/3176349.3176889

Draus, P., Curran, M., & Trempus, M. (2014). The influence of instructor-generated video content on student satisfaction with and engagement in asynchronous online classes. *Journal of Online Learning and Teaching*, *10*(2), 240-254. Retrieved from https://jolt.merlot.org/

Ellis, D. C., & Thornborough, L. (1923). *Motion pictures in education: A practical handbook for users of visual aids*. New York: Crowell.

Fyfield, M., Henderson, M., Heinrich, E., & Redmond, P. (2019). Videos in higher education: Making the most of a good thing. *Australasian Journal of Educational Technology*, *35*(5), 1–7. doi:10.14742/ajet.5930

Guo, P. J., Kim, J., & Rubin, R. (2014). How video production affects student engagement: An empirical study of MOOC videos. *L@S '14: Proceedings of the first ACM conference on Learning @ scale conference*, Atlanta, GA, 41–50. doi:10.1145/2556325.2566239

Hancock, C. V., & Bone, G. E. (1964). Producing 8mm teaching films. *Education + Training*, *6*(11), 555. doi:10.1108/eb015497

Hansch, A., Hillers, L., McConachie, K., Newman, C., Schildhauer, T., & Schmidt, P. (2015). Video and online learning: Critical reflections and findings from the field. *HIIG Discussion Paper Series,* (2015-02), 1-34. doi:10.2139/ssrn.2577882

Hawley, R., & Allen, C. (2019). Student-generated video creation for assessment: Can it transform assessment within higher education? *International Journal for Transformative Research*, *5*(1), 1–11. doi:10.2478/ijtr-2018-0001

Hill, J. L., & Nelson, A. (2011). New technology, new pedagogy? Employing video podcasts in learning and teaching about exotic ecosystems. *Environmental Education Research*, *17*(3), 393–408. doi:10.1080/13504622.2010.545873

Huizinga, J. (1955). *Homo Ludens: A study of the play element in culture*. Boston: Beacon Press.

James, A., & Nerantzi, C. (2019). *The power of play in higher education: Creativity in tertiary learning*. London: Palgrave Macmillan.

Jisc. (2015). *Using digital media in new learning models.* Retrieved from https://www.jisc.ac.uk/full-guide/using-

digital-media-in-new-learning-models

Kaltura. (2015). *The state of video in education 2015: A Kaltura report*. Retrieved from https://site.kaltura.com/rs/ 984-SDM-859/images/The_State_of_Video_in_Education_2015_a_Kaltura_Report.pdf

Kay, R., & Kletskin, I. (2012). Evaluating the use of problem-based video podcasts to teach mathematics in higher education. *Computers & Education, 59*(2), 619–627. doi:10.1016/j.compedu.2012.03.007

Kearney, M., & Schuck, S. (2006). Spotlight on authentic learning: Student developed digital video projects. *Australasian Journal of Educational Technology, 22*(2), 189–208. doi:10.14742/ajet.1298

Keegan, H. (2010). Immersed in the digital: Networked creativity through mobile video production [Video]. *Association for Learning Technology Conference.* Retrieved from https://repository.alt.ac.uk/832/

Keegan, H., & Bell, F. (2011). YouTube as a repository - the creative practice of students as producers of open educational resources. *European Journal of Open, Distance and E-Learning*, 1–10. Retrieved from http://usir.salford.ac.uk/19282/

Koeners, M. P., & Francis, J. (2020). The physiology of play: Potential relevance for higher education. *International Journal of Play, 9*(1), 143–159. doi:10.1080/21594937.2020.1720128

Koumi, J. (2014). Potent pedagogic roles for video. *Media and Learning Association, 1*, 1–13. Retrieved from http://association.media-and-learning.eu/portal/resource/potent-pedagogic-roles-video

Koumi, J. (2015). Learning outcomes afforded by self-assessed, segmented video–print combinations. *Cogent Education, 2*(1). doi:10.1080/2331186X.2015.1045218

Kukulska-Hulme, A., & Traxler, J. (2007). Learning design with mobile and wireless technologies. In H. Beetham & R. Sharpe (Eds.), *Rethinking pedagogy for the digital age: Designing and delivering e-learning* (pp. 180-193). London: Routledge.

Laaser, W., & Toloza, E. A. (2017). The changing role of the educational video in higher distance education. *International Review of Research in Open and Distance Learning, 18*(2), 264–276. doi:10.19173/irrodl.v18i2.3067

Lage, M. J., Platt, G. J., Treglia, M., Taylor, P., Lage, M. J., Platt, G. J., & Treglia, M. (2000). Inverting the classroom: A gateway to creating an inclusive learning environment. *The Journal of Economic Education, 31*(1), 30–43. doi:10.1080/00220480009596759

Lederman, D. (2020, October 6). Faculty confidence in online learning grows. *Inside Higher Ed*. Retrieved from https://www.insidehighered.com/digital-learning/article/2020/10/06/covid-era-experience-strengthens-faculty-belief-value-online

Mayer, R. (2005). Introduction to multimedia learning. In *The Cambridge handbook of multimedia learning* (pp. 1–16). Cambridge: Cambridge University Press.

McClusky, F. D. (1947). The nature of the educational film. *Hollywood Quarterly*, *2*(4), 371–380.

Merkt, M., Weigand, S., Heier, A., & Schwan, S. (2011). Learning with videos vs. learning with print: The role of interactive features. *Learning and Instruction*, *21*(6), 687–704. doi:10.1016/j.learninstruc.2011.03.004

Millar, M. (2005). Teaching and learning in affective domain. In *Emerging Perspectives on Learning, Teaching, and Technology.* Retrieved from http://epltt.coe.uga.edu/index.php?title=Teaching_and_Learning_in_Affective_Domain

Miller, S. T., & Redman, S. L. (2010). Improving instructor presence in an online introductory astronomy course through video demonstrations. *Astronomy Education Review*, *9*(1). doi:10.3847/aer2009072

Gernsbacher, M. A. (2015). Video captions benefit everyone. *Policy Insights from the Behavioral and Brain Sciences*, *2*(1), 195–202. doi:10.1177/2372732215602130.

Nørgård, R. R. T., Toft-Nielsen, C., & Whitton, N. (2017). Playful learning in higher education: developing a signature pedagogy. *International Journal of Play*, *6*(3), 272–282. doi:10.1080/21594937.2017.1382997

Organisation for Economic Co-operation and Development. (2020). *The potential of online learning for adults: Early lessons from the COVID-19 crisis*. Paris: OECD Publishing.

Rante, F. P., & Campbell, A. G. (2016). The convergence of social networking, mobile and Virtual Learning Environments. *International Journal for E-Learning Security*, *6*(2), 514–524. doi:10.20533/ijels.2046.4568.2016.0065

Salen, K., & Zimmerman, E. (2004). *Rules of play: Game design fundamentals*. Cambridge, MA: The MIT Press.

Salina, L., Ruffinengo, C., Garrino, L., Massariello, P., Charrier, L., Martin, B., Favale, M. S., & Dimonte, V. (2012). Effectiveness of an educational video as an instrument to refresh and reinforce the learning of a nursing technique : a randomized controlled trial. *Perspectives on Medical Education, 1*, 67–75. doi:10.1007/s40037-012-0013-4

Santos-espino, B. J. M., Afonso-suárez, M. D., & Guerra-artal, C. (2018). Speakers and boards : A survey of instructional video styles in MOOCs. *Technical Communication, 63*(2), 101-115.

Silveira, R. M., Chigami, L., Matushima, R., Ruggiero, W. V., & Stiubiener, I. (2015). Is a video used as a didactic content effective in the learning process? *122nd ASEE Annual Conference and Exposition: Making Value for Society*, Seattle, WA. doi:10.18260/p.24381

Suits, B. (1978). *The Grasshopper: Games, life and utopia*. Peterborough, Canada: Broadview Press.

Thomson, A., Bridgstock, R., & Willems, C. (2014). 'Teachers flipping out' beyond the online lecture: Maximising the educational potential of video. *Journal of Learning Design*, *7*(3). doi:10.5204/jld.v7i3.209

van Aalst, J. (2009). Distinguishing knowledge-sharing, knowledge-construction, and knowledge-creation discourses. *International Journal of Computer-Supported Collaborative Learning*, *4*(3), 259–287. doi:10.1007/s11412-009-9069-5

Weber, K. E., Gold, B., Prilop, C. N., & Kleinknecht, M. (2018). Promoting pre-service teachers' professional vision of classroom management during practical school training: Effects of a structured online- and video-based self-reflection and feedback intervention. *Teaching and Teacher Education*, *76*, 39–49. doi:10.1016/j.tate.2018.08.008

Whitton, N. (2018). Playful learning: tools, techniques, and tactics. *Research in Learning Technology*, *26*, 1-12. doi:10.25304/rlt.v26.2035

Wijnker, W., Bakker, A., Gog, T. Van, & Drijvers, P. (2019). Educational videos from a film theory perspective: Relating teacher aims to video characteristics. *British Journal of Educational Technology*, *50*(6), 3175–3196. doi:10.1111/bjet.12725

Winterbottom, S. (2007). Virtual lecturing: Delivering lectures using screencasting and podcasting technology. *Planet*, *18*(1), 6–8. doi:10.11120/plan.2007.00180006