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Video and Online Learning: Critical Reflections and Findings From the Field

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Abstract

Video is an essential component of most Massive Open Online Courses (MOOCs) and other forms of online learning. This exploratory study examines video as an instructional medium and investigates the following research questions:

- How is video designed, produced, and used in online learning contexts, specifically with regard to pedagogy and cost?
- What are the benefits and limitations of standardizing the video production process?

This report presents an overview of current video practice: the widespread use of video and its costs, the relevance of production value for learning, the pedagogical considerations of teaching online, and the challenges of standardizing production. Findings are based on a literature review, our observation of online courses, and the results of 12 semi-structured interviews with practitioners in the field of educational video production.

Based on these findings, we have developed a set of recommendations designed to raise awareness and stimulate critical reflection on video's role in online learning. Additionally, we discuss some need for further research on the effectiveness of video as a pedagogical tool and highlight under-explored uses of the medium, such as live video.

Keywords

MOOC, online learning, video production, video styles

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1. Introduction

Since their first appearance in 2008, MOOCs[1] (Massive Open Online Courses) have captured the attention of higher education researchers, policy makers, and practitioners and have triggered vigorous debate not only in academia, but also in the blogosphere and at conferences worldwide (Nkuyubwatsi, 2014).

Video content plays a central role in most MOOCs and other forms of online learning.[2] It is typically the main form of content delivery, as well as the greatest cost driver of MOOC production. Yet, many questions regarding the effective use of video remain unanswered. With all of the recent hype surrounding teaching and learning online, it seems that the use of video in this field has come to be taken for granted, despite a relative lack of evidence as to video's effectiveness for learning.

In order to assist institutions in their use of video for online courses, we set out to survey current practices of leading producers of online courses, interview practitioners and experts in the field, and attempt to answer two central questions:

- How is video being designed, produced, and used in online learning contexts, specifically with regard to pedagogy and cost?
- What are the benefits and limitations of standardizing the video production process?

In this report, we provide an overview of current practice and important considerations related to video design, use, and production. We also hope to raise awareness and stimulate critical reflection on video's role in online learning. Based on our findings, we articulate a set of recommendations on the appropriate uses of video, the affordances of the medium, and the benefits of a lightweight approach to production. Finally, we discuss some need for further research on

[1] MOOCs take multiple forms, but typically share common characteristics that include: large-scale participation, online and open access, (short) lecture videos combined with formative quizzes, automated and/or peer or self-assessment, and online discussion fora (Glance, Forsey, & Riley, 2013).

[2] For the purposes of this study, we were interested in video as an instructional tool and therefore we broadened our focus to encompass not only MOOCs, but also other, non-course-based forms of online learning in which video plays a central role, such as Khan Academy or Peer 2 Peer University.

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the effectiveness of video as a pedagogical tool and highlight under-explored uses of the medium, such as live video.

2. Methodology

2.1 Literature Research

In order to prepare a set of interview questions and guide our content review, we surveyed a number of sources that focused on the online learning video production process and the strengths and weaknesses associated with using video in online courses (see **Bibliography**). We also reviewed course and video production guidelines from major MOOC producers and digital media offices at universities. We found some exploratory work on what makes an online instructional video compelling (Hibbert, 2014) and on how video production style affects student engagement, as measured by video retention rates (Guo, Kim, & Rubin, 2014). However, we found documentation on the use of video as an instructional tool for online learning to be a notably underexplored field. To date, little consideration has been given to the pedagogical affordances of video, what constitutes an effective learning video, and what learning situations the medium of video is best suited for (Thomson, Bridgstock, & Willems, 2014).

2.2 Platform and Content Review

We reviewed a variety of different course and video formats offered on six major platforms: Coursera, edX, Udacity, iversity, FutureLearn, and Khan Academy. We chose to examine courses on these platforms because they are among the largest and most widely used in the Europe and the United States.

Over a period of eight weeks from July to September 2014, we signed up for courses on each platform and participated in the first few sections of each course, paying particular attention to the ways in which video was used. In total, we reviewed 20 courses. We noted a variety of attributes, including video length, video production style(s), video quality, audio quality, level of standardization, production value, and video player interface features. Results were recorded in a comprehensive spreadsheet.

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2.3 Expert Interviews

We conducted interviews with twelve online learning experts. We opted for semi-structured interviews to allow some flexibility in pursuing interesting avenues of inquiry (Flick, 2014; King & Horrocks, 2010). The interview subjects included course producers and video experts at major MOOC platforms, people in charge of digital media (including video production) at universities, and an instructor with experience producing a MOOC (see **Appendix 2** for full list of interview subjects). Interviews lasted between 30 minutes and an hour. All interviews were digitally recorded with consent from participants and transcribed for further analysis. We used thematic analysis (Braun & Clarke, 2006; Guest, MacQueen, & Namey, 2011) to identify and report patterns relevant to our research questions. Some themes were identified in a deductive way, based on the literature research, and others in an inductive way, based on comments made by interviewees.

3. Findings

Based on the background literature, platform and content review, and expert interviews we have identified a number of key themes:

Key Findings

- **Video Dominates Course Content**
- **Video is Expensive**
- **Impact of Production Value on Learning is Uncertain**
- **Content Expertise ≠ Media and Pedagogy Expertise**
- **Standardizing Video Production Faces Many Limitations**

In this section, we will elaborate on these themes using secondary sources and quotes from the interviews.

Video Dominates Course Content

On the whole, we found that video is the main method of content delivery in nearly all MOOCs. MOOC videos tend to be structured as short pieces of content, often separated by assessment questions. This seems to be one of the few best practices that is widely accepted within the field. According to many experts,

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splitting videos into 2-3 minute segments (Chris Boebel, Media Development Director, MIT Office of Digital Learning/MITx) or 6-minute chunks (Guo et al., 2014) maximizes viewer engagement. However, Justin Reich, HarvardX Research Fellow, pointed out that shorter videos also tend to present their content in a tight, concise manner. So although research might indicate that students prefer shorter videos, this result might actually represent student preference for succinct content presentation, independent of video length.

Furthermore, we found two video production styles that are most commonly used (see **Figures 1** and **2**): (1) the talking head style, where the instructor is recorded lecturing into the camera, and (2) the tablet capture with voiceover style (e.g. Khan Academy style). See **Appendix 1** for a full typology of video production styles.

Fig. 1: Talking head video.

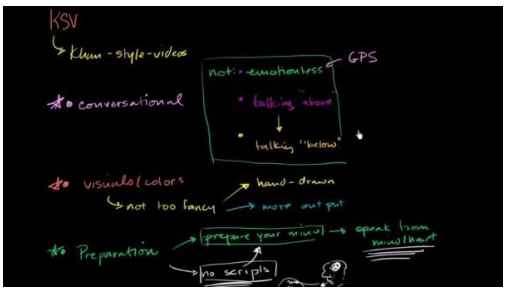

Fig. 2: Khan-style tablet capture video.

The talking head and the tablet capture models are mainly used for lecture-style videos (as opposed to, for example, documentary-style videos). Several interviewees suggested that because lectures are so prevalent in university settings, MOOC production teams were initially built upon the belief that lecture would serve as their main pedagogical format. In fact, many of the first MOOCs were nothing more than videos of university classroom lectures. Because of this tendency toward lectures, many MOOC teams were originally staffed with people with backgrounds in film or television and equipped with production studios. And thus, as one interviewee put it, "*MOOC teams were built to make video. Now, they have to keep making video.*"

Yet, in the analysis of a large MITx MOOC, researchers found that while most certificate earners invested most of their learning time on lecture videos, only one in three certificate earners accessed over 80% of course videos, and nearly a quarter of certificate earners accessed less than 20% of course videos (Seaton,

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Bergner, Chuang, Mitros, & Pritchard, 2014). It is also well understood in the field of education that lectures are ineffective when it comes to supporting critical components of learning, such as developing critical thinking skills, applying knowledge, and fostering deep understanding (Bates, 2015).

But, when used correctly, video can serve as a powerful teaching tool. Koumi (2006) describes three types of value that video is well placed to add in an educational context: (a) cognitive, (b) experiential, and (c) nurturing. *Cognitive value* includes visual strategies to assist learning, such as demonstrations of processes using animated graphics. *Experiential value* provides vicarious experiences, allowing viewers to see something in a video that they might not be able to see in everyday life. *Nurturing value* refers to video's power to motivate and connect with its audience through the affective domain.

Overall, it appears that the use of video in online learning is taken for granted, and there is often not enough consideration given to whether or not video is the right medium to accomplish a MOOC's pedagogical goals. Molly Wasser, Lead Course Developer at HarvardX, echoed this sentiment and posed the question, *"If you can listen to it and not look at it, but still get the same amount out of it, should it be a video? Maybe you should be reading it, or it should be a podcast instead."*

Key Learnings

- Video is used as the main method of content delivery in nearly all MOOCs.
- Video tends to be chunked into short segments of content, often separated by assessment questions.
- Two of the most widely used video production styles are talking head and tablet-capture. Both are predominately used for lecture-style videos.
- Video is well placed to add value to education; however, it is often misused for lectures.

Video is Expensive

Video production is a resource-intensive endeavor, requiring recording equipment, staff time to plan, shoot, and edit the material, and in many cases, a dedicated studio space. While many of our interviewees were not able to provide concrete cost figures, there was consensus that video production, in nearly all

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cases, is the most expensive component of creating a MOOC. Staff time was cited as the most costly piece of this process. Hollands and Tirthali (2014) found the quality of videography to be one of the major cost drivers of MOOCs. Based on U.S. national average prices, they estimated the cost of one hour of high-quality, finished video to be $4,300. Udacity is reported to budget $200,000 for every course it makes (Peterson, 2013), and many of our interviewees reported wide variations in individual course budgets, depending largely on what skills, resources, and support the instructor already has on hand.

Key Learnings

- Video tends to be the most expensive part of MOOC production.

Impact of Production Value on Learning is Uncertain

The online learning videos we encountered during our research ranged from professional, TV-style productions to lightweight and do-it-yourself (DIY) approaches shot in makeshift studios. However, several interviewees noted a tendency toward copying high production value television or film when producing MOOC videos. While there was agreement that high-quality audio is absolutely indispensable, the importance of high production value was widely disagreed upon amongst our interviewees.

Along with a general lack of research into the use video for online learning, it is not yet clear how to best measure a learning video's effectiveness. While many platforms are collecting and analyzing massive amounts of click-stream data on their videos, Katy Reichelt, Director of Video Production at Udacity, pointed out that it is difficult to pinpoint the relevance of production value in this kind of data. Guo et al. (2014) note that high production value might not increase student engagement, but that more research is needed into this area to know either way. Several of our interviewees echoed this sentiment, stating that what is more important than a video's production value is whether or not its ideas are communicated effectively. Salman Khan's original instructional videos, for instance, follow an informal and conversational style and were produced using a very simple tablet setup in a home studio. And yet, they remain some of the most popular and widely used video content in online learning to date.

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Brent Izutsu, Director of Digital Media at Stanford's Office of the Vice Provost for Online Learning, noted that general statements about the relevance of quality for online learning videos are hard to make given the many variables and diverse populations involved. First, he said, *"...educational video needs to decide who its competitors are. TV? Other Institutions? YouTube?"* In this regard, he points out that a higher baseline for quality might be called for if you strive for longevity of your videos, intend to share the videos with other institutions, or if you are charging for access to your content. Paying students might expect higher production values because they have certain expectations as customers. However, William Heikoop, Online Learning Coordinator at the University of Toronto, notes that, generally speaking, these payings students also tend to be more invested in the material than most students in a MOOC, where learners' attention is hard to get and even harder to keep. High quality video content might therefore be especially important to keep MOOC students interested in the course, especially up front. For example, *"The course promotional video and introduction to the course should appeal to a wide audience and reflect well on the institution through its production value,"* he says. *"While during the MOOC this production value may continue to be beneficial, so long as the instructor teaches in an effective, personal manner, different production values may be utilized."*

Key Learnings

- There is a tendency for institutions to opt for a professional, studio-style setup when producing video.
- There is little to no research showing the relevance of production value for learning.
- The importance of a video's production value depends on its context and audience.

Content Expertise ≠ Media and Pedagogy Expertise

A prominent theme that emerged from our interviews was that online teaching is very different from offline teaching. Since instructors cannot rely on and respond to situational aspects, Lara Ruppertz, Head of Course Development and Support at iversity, compared delivering content in a MOOC to writing an essay rather than giving a lecture. Delivering content clearly on video requires a

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different set of skills than those required for classroom teaching. Nevertheless, many first-time MOOC instructors falsely believe that they can translate their offline teaching experience to an online environment without much preparation. Many interviewees reported that the instructors who spend the most time preparing for their video shoots tend to be the most successful, yet it is often very challenging to get instructors to understand the importance of pre-production preparation.

In order to get a feel for the technical and pedagogical challenges associated with production, both William Heikoop and Lara Ruppertz suggest doing a preliminary shoot or filming a test chapter. Katy Reichelt noted that these kinds of test shoots help the production team identify and leverage an instructor's strengths through judicious choice of media. This experience tends to be an enlightening one for most instructors, helping them appreciate the importance of storyboarding content and rehearsing delivery.

However, expert opinions differ on whether videos should be fully scripted in advance. Molly Wasser noted that,

> *Professors are not trained actors, and it's hard to listen to something that is fully scripted if you're not trained to deliver it. But it's also very difficult to speak into a camera and be the same dynamic person that you can be in the classroom. Sometimes scripts can help professors who are camera shy.*

Nigel Smith, Head of Courses at FutureLearn, noted that problems arise most frequently when instructors try to improvise rather than follow a detailed outline. Additionally, Katy Reichelt stressed the importance of scripting, but does not insist on full scripts, adding, *"We don't want instructors to sound like they're reading. We want them to sound like they're teaching, so if they can use bullet points, stay on topic, and be concise, that's great."*

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Key Learnings

- Experience teaching offline is no guarantee for success in teaching online.
- It is often hard to get instructors who are new to online learning to spend time preparing their videos.
- A test shoot can be a valuable source of feedback for both the instructor and the production team.
- Experts disagree on whether or not scripting is a good practice.

Standardizing Video Production Faces Many Limitations

At the platform level, there was general consensus among our interviewees that while the standardization of video production could cut costs in theory, in practice, it is largely infeasible. Most platforms aggregate courses from a variety of different institutions who design and produce the video content themselves. Of the platforms that we analyzed, all but Khan Academy and Udacity leave video production entirely up to the institution(s) developing the course. Each production team at these institutions is set up differently, from highly experienced teams with performance coaches and ample budgets, to one-person DIY productions in makeshift office studios. Thus, the videos produced vary widely, even between courses on the same platform. Nigel Smith noted that the vast heterogeneity in terms of available budgets, team sizes, expertise, and technological equipment makes it virtually impossible to devise a standardized production process at the platform level.

Furthermore, standardizing video production becomes incredibly difficult when considering how much of a video relies on a specific instructor's personality, abilities, and preferences, says Colin Fredericks, Senior Project Lead at HarvardX. Similarly, Chris Boebel notes that, "*It is important to match the video style to the instructor. There isn't a one-size-fits-all approach.*" He cautions against the technocentric idea that anyone can easily replicate Salman Khan's success using a similarly basic tablet setup:

> *They see Sal Khan and they go, 'Wow, that's amazing. That's just a guy with a tablet and a microphone, so all I need is a tablet and a*

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microphone and a quiet space, and I'll be able to do that too'. But it's not just about the technology, it's also that he is an exceptional communicator...

There are, however, many people attempting to make video production easier with some level of standardization at the institutional level. For example, Stanford has developed a self-service screencasting booth for the production of some parts of their online courses' videos. These booths allow faculty to independently film their screencasts in a way that streamlines the post-production process. Though many of our interviewees agreed that setups like this are incredibly appealing in terms of cutting costs, a few raised concerns with such attempts. Udacity's Katy Reichelt pointed out that standardization might result in the exclusion of certain types of instructors who don't work well within the standardized format. Similarly, Chris Boebel remarked that although standardization might lead to a more consistent product, it wouldn't necessarily lead to a more interesting one. We should be encouraging experimentation, he suggests, since very little is currently known about what works well in online learning video and what doesn't.

Key Learnings

- Standardizing the video production process in MOOCs could cut costs; however, it is hard to implement in practice, discourages experimentation, and doesn't take into account differences among instructors.
- There is no one-size-fits-all approach to making a learning video.

4. Recommendations

Think Twice Before Using Video

We found consistently that the bulk of content delivery in online learning is done through pre-recorded video. We also found that video is routinely cited as the most resource-intensive part of the MOOC production process. With little conclusive research to show that video is indeed an effective method for learning, it seems problematic that online learning pedagogy is concentrated so heavily in this medium. Hence, we want to discourage the use of video in online learning

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simply because there is an expectation for it, and rather encourage online learning producers and providers to question video's extensive use at the expense of other pedagogical alternatives. Other forms of media (e.g. podcasts and interactive animations) and other uses of video (e.g. live video) remain under-explored. Without a redirection of effort from the community, we risk falling into a pedagogical rut and relying on video as the default medium of instruction. This is not to say that there isn't a time and place for video. There are a number of things that the medium of video does particularly well; however, leveraging one or more of these should be both an intentional and critical design decision.

Make the Best Use of Video as a Medium

Too often we found video being used for lectures in MOOCs. These types of videos not only ignore research on the pedagogical weaknesses of lecturing, but also severely underutilize video as a medium. Based on our findings, we have compiled an overview of the medium of video's affordances for online learning (see **Figure 3**). These affordances include: building rapport, going on virtual field trips, manipulating time and space, telling stories, motivating learners, showcasing historical footage, conducting demonstrations, using visual juxtaposition, and leveraging multimedia presentation. Course designers should be critical about the use of video to accomplish their pedagogical goals. When the medium of video is not well aligned with these goals, other forms of media, with different affordances for learning, should be considered.

In cases where video is indeed the right choice of medium, we encourage a critical choice of video production style (i.e. the method of visual organization that is employed to realize a video's goals) that is appropriate for the pedagogical objectives and desired learning outcomes. It is important to note that production style is independent of visual aesthetics or production value. While aesthetics and production value can also influence pedagogical objectives and desired learning outcomes, the scope of this recommendation is limited to video production styles, and their different affordances for learning.

When choosing a production style, it is important to keep in mind the goal of the video and its desired results. Different production styles have different affordances, so it is vital that the selection process be both thoughtful and intentional. In **Appendix 1**, we have listed the main production styles that are

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Fig. 3: Video's affordances for online learning.

currently used in online learning contexts. Finally, it is important to note that while each of these production styles is listed discretely, it is possible to combine two or more of them into a single video, thereby achieving different results than could be produced with any one of these formats alone.

Consider Lightweight and DIY Approaches

Video production tends to be the most expensive part of producing an online course, but it does not have to be. Since there is little substantive evidence to suggest that higher production values lead to superior learning outcomes, there seems to be little reason why online learning videos are always filmed by professionals, using high-end recording equipment in full studios. In many cases, opting for a lightweight or DIY production process is a great way to achieve pedagogical objectives, while at the same time reducing cost. We encourage an approach that makes use of existing resources and prioritizes learning and pedagogy over glossy, high production value videos. Most smartphones and

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webcams nowadays are able to record in high definition, and there are many free online resources that make the processes of filming and editing accessible to non-professionals. However, even when following a DIY approach, there are a few core competencies that every production team should have: subject matter expertise, video production proficiency, instructional design experience, and project management skills.

It is also important to note that a DIY approach to video production prioritizes the development of 'media literacy' for content experts. Rather than isolating production and content experts, this method emphasizes their interrelation. If content experts are comfortable with media tools, they will be able to do things themselves and likely be comfortable collaborating with and giving creative direction to their team. This type of *"creative fluency"*, as Chris Boebel calls it, allows content experts to understand the affordances of the medium, make strong decisions about how to use the tools, and communicate effectively with others who are bringing media skills to the table.

5. New Directions

More Research is Needed on How People Learn from Video

As noted above, there is scant research into the effectiveness of video as a pedagogical tool for online learning. Most research to date has focused on educational multimedia from a cognitive sciences perspective, and little of this research has been verified in a natural educational setting (i.e. outside of a research lab). What little research does exists on video in MOOCs is focused on engagement metrics (e.g. analysis of clickstream data and viewing statistics), which may or may not serve as an effective proxy for measuring learning. This type of research often starts by asking, "Did people watch this video?" rather than, "Did people learn from this video?" While there is clearly merit to understanding what kinds of videos people are more likely to watch, it is problematic to conflate engagement with learning, particularly given research that suggests students often wrongly believe that they are learning from videos that are engaging and expository in nature (Muller, Bewes, Sharma, & Reimann, 2008). In an attempt to move towards measuring actual learning, several MOOC platforms have

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recently implemented A/B testing to determine how different ways of chunking and presenting material affects learning outcomes.

Considering that video is the main method of content delivery in MOOCs, it is disconcerting how little research has been done to actually measure its pedagogical effectiveness. There is therefore a need for future research that focuses on measuring gains in competency that arise from watching videos explicitly designed to teach. There is also a need to develop new metrics for learning in these contexts, which may require the collection of additional or different types of data.

Live Video Can Help to Foster Social Learning

Live video is under-explored as a pedagogical tool in online learning. We found that, while some MOOCs are experimenting with live video, it is mostly being done in a unidirectional, 'office hours' format. In these instances, students submit questions which the instructor then answers via a live, informal broadcast (e.g. a Hangout on Air). While this serves as a great way to increase instructor presence in a course, it does little to foster social aspects of learning that many MOOCs are severely lacking. In this 'office hour' format, most students who are tuning in are only able to listen to the professor and have no way to take advantage of the co-presence of their peers.

We feel that the medium of live video presents a unique opportunity for MOOCs to leverage this student co-presence in a way that promotes community and peer-to-peer learning. One tool that is attempting to do this is Unhangout (https://unhangout.media.mit.edu), an open-source platform developed at the MIT Media Lab. Based on the concept of an unconference, Unhangout allows participants to gather in a virtual lobby where they can watch video together, chat with each other, and break out into smaller groups of up to ten people in a Google Hangout. This tool has been used successfully in several online courses, including Learning Creative Learning (MIT Media Lab) and Leaders of Learning (HarvardX).

6. Conclusion

Video is by far the most common content format for online learning, even though very little is known about its effectiveness as a pedagogical tool. Furthermore,

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expensive production techniques are often used, despite little to no research suggesting that a high production value leads to better learning outcomes. Thus, the crux of designing, using, and producing video for online learning contexts lies in a more critical reflection on video's role and potential. To this point, we offer three main recommendations that will help optimize the use of video in an online learning context, and also go a long way towards reducing costs.

- First, think carefully about whether video is the most appropriate medium for accomplishing your learning goals.
- Second, if you use video, make sure to take advantage of its strengths as a medium, and make a deliberate design choice about what video production style(s) to use.
- Third, consider producing online learning video using lightweight or DIY production tools and techniques, emphasizing media literacy.

While standardizing the production process has also been raised as a possible way to reduce costs, this comes with a number of practical challenges. In particular, the practitioners we interviewed noted that the heterogeneity of production teams and setups, as well as individual instructors' abilities and personalities, present significant obstacles to such standardization. Additionally, given that there is no consensus on what makes an effective learning video or how to measure this, it is not clear what the standards are that should be implemented.

Many questions about the use of video remain unanswered, and both more research and more experimentation are needed. There is a lot of excitement about the potential of MOOCs and other forms of online learning, but the online learning community faces the challenge of ensuring that MOOCs are as effective as they can be for participants. Given that many of the metrics used in MOOCs measure only retention, new and better metrics that measure how people learn from video are needed. Finally, we should encourage the sharing of experiences amongst practitioners in this field, especially with regards to creative approaches to video production and use, such as lightweight production techniques, or synchronous co-watching.

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Appendix 1: Typology of Video Production Styles

Given the wide variety of video production styles that are currently being used in online learning, we felt that it would be useful to catalogue these styles as a method of providing a current overview of the field. By video production style, we are referring to the main method of visual organization that is employed to realize a video's goals and achieve specific results when the video is viewed. Therefore, when thinking about video for learning, the choice of video production style will have a great impact on a video's ability to effect pedagogical objectives and desired learning outcomes. It is important to note that this definition does not include any mention of visual aesthetics or production value. Each of these production styles can be designed in a variety of ways that will also influence its ability to achieve pedagogical objectives and desired learning outcomes. Here, we only intend to provide an overview of video production styles, as defined above, and their different affordances for learning.

When choosing a production style, it is important to keep in mind the video's goals and desired results. Different production styles have different affordances, so it is vital that the selection process be both thoughtful and intentional. Below we have listed the main production styles that are currently being used in online learning contexts. Each includes a brief description, as well as several questions to consider before choosing that format. Finally, it is important to note that while each of these production styles is listed discretely, it is, of course, possible to combine two or more of them in one video, thereby achieving different results than could be produced with any of these formats on its own. For example, one common combination is often referred to as a 'bookended' approach, which usually features the talking head style at the beginning and the end of the video, with a tablet-capture or screencast used in between.

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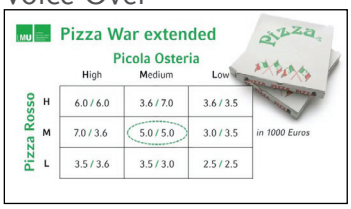
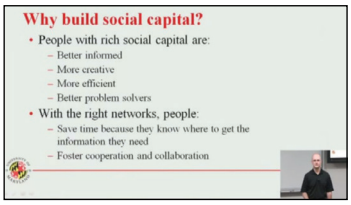
Overview

Talking Head

Presentation Slides with Voice-Over



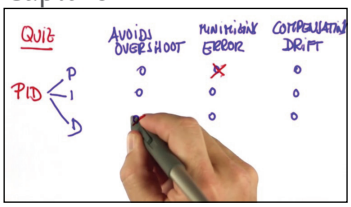
Picture-in-Picture



Text-Overlay

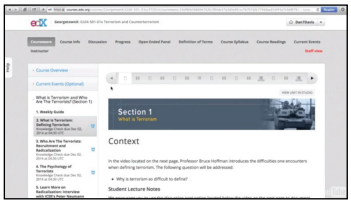
Khan-Style Tablet Capture

Udacity Style Tablet Capture

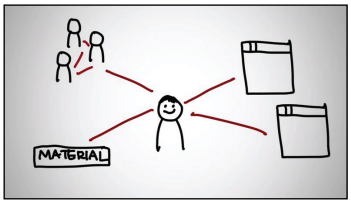


Actual Paper/Whiteboard

Screencast



Animation



Classroom Lecture

Recorded Seminar

Interview

Conversation

Live Video

Webcam Capture

Demonstration

On Location

Green Screen

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Talking Head

Source
Knowledge Base,
Alexander von
Humboldt Institute for
Internet and Society

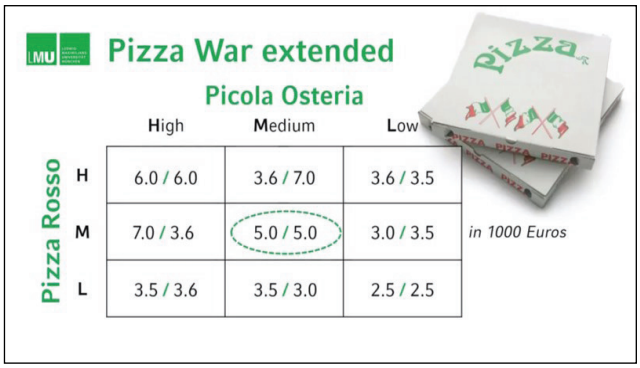
Description

- Common style, typically shot in a studio
- Can be used to build a connection between the person on-camera and the viewer
- Multiple camera angles may be used for easier editing and to break monotony

Questions to Ask

- What does a video like this add for the viewer that isn't gained by just listening to the audio track?
- Does the speaker's personality come across in this format?

Presentation Slides with Voice-Over



Source
Coursera course
"Competitive Strategy"
(Ludwig-Maximilians-
Universität München)

Description

- Could be Powerpoint or any other presentation format, with voice-over and slides visible full screen
- Annotations on slide can be used to highlight information or draw the viewer's attention to a specific detail

Questions to Ask

- Does the voice-over complement the content of the slides and vice-versa?
- Are the slides clear and visually engaging?
- Is the text big enough for mobile device viewing?

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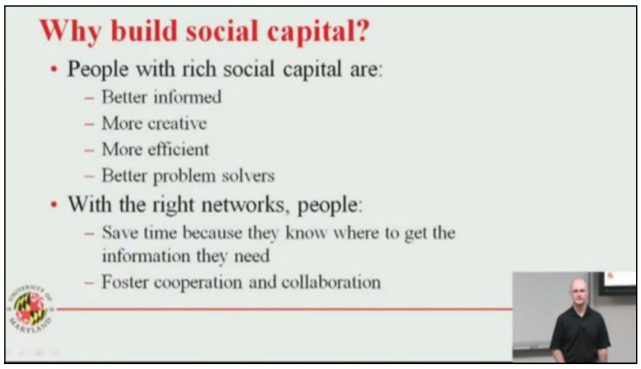
Picture-in-Picture



Source
Coursera course "Developing Innovative Ideas for New Companies: The First Step in Entrepreneurship" (University of Maryland, College Park)

Description

- Ability to show slides and instructor at the same time

Questions to Ask

- Is there a good reason why the slides and the instructor should be visible at the same time?
- How will the viewer know what to focus on, the instructor or the slide?
- Are the text and the small picture suitable for viewing on mobile devices?

Text Overlay

Source
Coursera course "Configuring the World: A Critical Political Economy Approach" (Universiteit Leiden)

Description

- Text or graphics overlaid onto a video
- Can be used to summarize main points, highlight keywords and phrases, or visualize what is being discussed

Questions to Ask

- Does text overlay complement, enhance, and emphasize what is being said, or is it distracting to the viewer?
- Does the text overlay require so much reading that it reduces the viewer's ability to listen to the speaker talking?

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Khan-Style Tablet Capture

Source
Making a KSV https://www.youtube.com/watch?v=Ohu-5sVux28

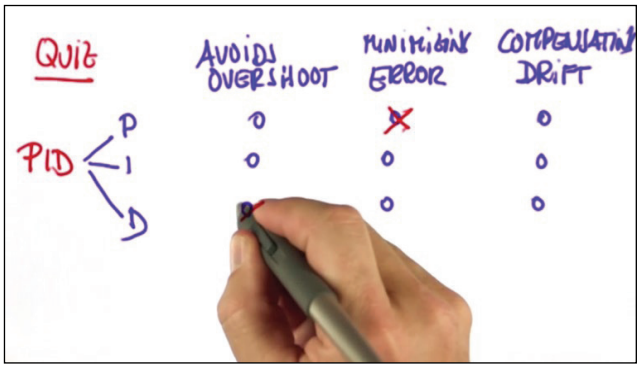
Description

- 'Chalk and talk' style made on a digital tablet
- Relatively cheap and easy to produce
- Presenter typically uses a conversational tone

Questions to Ask

- Is the handwriting legible?
- Will students benefit from seeing step-by-step how an instructor assembles or creates complicated ideas?

Udacity-Style Tablet Capture



Source
Udacity course "Artificial Intelligence for Robotics"

Description

- Digital whiteboard with visible writing hand and instructor voiceover
- Presenter's hand is captured using an overhead camera, but made semi-transparent in post-production so writing is not obscured

Questions to Ask

- Is the handwriting legible?
- Will students benefit from seeing step-by-step how an instructor assembles or creates complicated ideas?
- What is added by showing the hand of the presenter?

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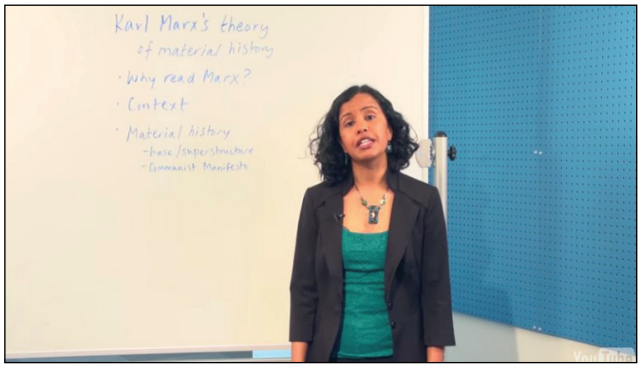
Actual Paper / Whiteboard



Source
edX course "SOC108x Introduction to Global Sociology" (WellesleyX)

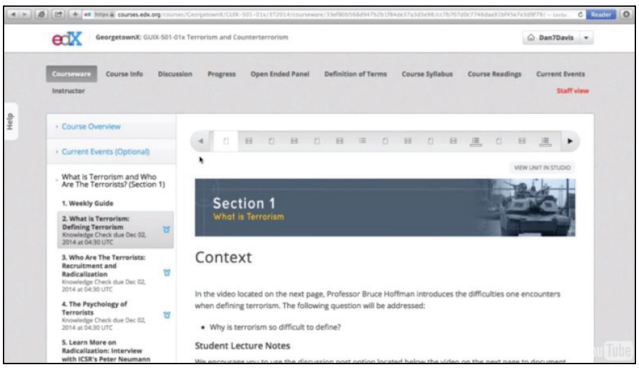
Description

- Low-tech alternative to digital tablet capture
- Could be an upright whiteboard, or an overhead shot of a piece of paper on a desk

Questions to Ask

- Can the viewer easily read what is being written?
- Is the content obscured as it is being written?
- What is added by recording physical writing, rather than digital? (consider also things like erasing a whiteboard or tearing off a used sheet of paper)

Screencast



Source
edX course "GUIX-501-01x Terrorism and Counterterrorism" (GeorgetownX)

Description

- Recording whatever is on the instructor's screen and adding a voiceover
- Very versatile, can be used for any type of on-screen content
- Commonly used for technical trainings, software trainings, and step-by-step video tutorials
- Relatively cheap to produce

Questions to Ask

- Can the viewer easily follow along with the steps being shown?
- How does a viewer know where to direct her attention?

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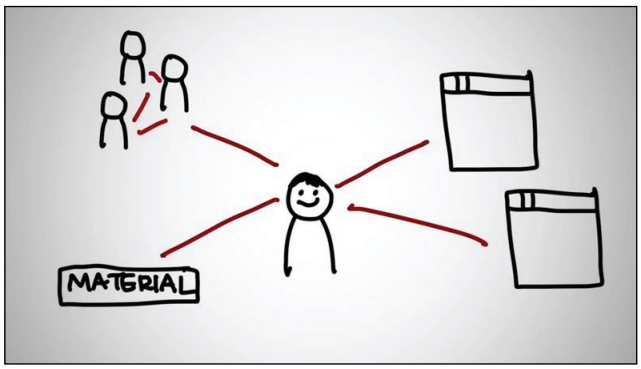
Animation



Source
What is a MOOC?
http://youtu.be/
eW3gMGqcZQc

Description

- Useful for visualizing abstract concepts and relations
- Can range from very simple to highly sophisticated (e.g. RSA Animate-style)

Questions to Ask

- Does the added value of the animation for student learning justify the resources needed to produce it?

Classroom Lecture

Source
Coursera course "Developing Innovative Ideas for New Companies: The First Step in Entrepreneurship" (University of Maryland, College Park)

Description

- Filming a traditional lecture in a classroom

Questions to Ask

- How will this type of offline lecture work in an online setting?
- Is there a risk that online learners may feel secondary to on-campus students?

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Recorded Seminar

Source
Coursera course "How to Change the World" (Wesleyan University)

Description

- Recording a seminar discussion, often with the professor and current or past students of the course
- Can be useful to give viewers the feeling that they are in class together with other learners

Questions to Ask

- Is the discussion hard to follow or awkward because it is too unstructured or too scripted?
- Will the viewer feel part of the conversation or removed from it?

Interview

Source
Coursera course "How to Change the World" (Wesleyan University)

Description

- Good way to involve outside experts from a particular field
- Gives viewers access to a leading expert's opinions and ideas about a relevant topic

Questions to Ask

- Are the questions asked relevant and engaging?
- Does the interview surface ideas and commentary that would be hard for students to find elsewhere?

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Conversation

Source
Coursera course "Understanding Violence" (Emory University)

Description

- Informal conversation about a particular topic, typically featuring the instructor(s) and perhaps a guest
- Typically unscripted, authentic conversations, which may help build a connection between the presenters and the viewer
- Can be used as a method for reflecting on discussions and happenings within the course

Questions to Ask

- Does the topic of conversation stimulate and engage viewers?
- What is added by the unscripted/informal nature of this format?

Live Video

Source
Coursera course "The Changing Global Order" (Universiteit Leiden)

Description

- Live virtual office hours can help instructors establish a presence in the course
- Hangouts-on-Air can also be useful to bring in external experts
- Gives students a chance to get their questions answered live

Questions to Ask

- Do you have a stable and fast internet connection?
- Do you have a good microphone and acceptable audio quality?
- Is your live event scheduled at a time that works well for the multiple time zones represented by your student audience?

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Webcam Capture

Source
iversity course "The European Union in Global Governance" (various universities)

Description

- Relatively cheap to produce, webcams are easily accessible
- Similar to a talking head style video, but more informal and not shot in a studio

Questions to Ask

- Does your webcam record in a resolution that produces an acceptable quality of video?
- Is the background distracting?
- Is your lighting and audio setup acceptable?

Demonstration

Source
Coursera course "Mechanics: Motion, Forces, Energy and Gravity, from Particles to Planets" (UNSW Australia)

Description

- Allows viewers to see a concept or process in action, rather than just seeing someone talking about it
- Can give viewers special access to artifacts/art/tools, etc.
- Very useful for showing experiments that viewers would not otherwise be able to see or do on their own

Questions to Ask

- Can the viewer adequately see all steps and results of the demonstration?
- Is filming a demonstration better than talking about it?

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On-Location

Source
iversity course "Contemporary Architecture" (Open Online Academy)

Description

- A great way to take viewers to places that they might otherwise not be able to go or allow them to see things from a new perspective
- An uncontrolled environment makes this format more risky to film

Questions to Ask

- What is added for the viewer by being in a particular place?
- Can I avoid excessive background noise and achieve clear audio?
- Do I have a back-up plan in case of inclement weather or other unforeseen circumstances?

Green Screen

Source
'English On The Go' Ep.2 - Weather | Wall Street English https://www.youtube.com/watch?v=E7yyzBeG9Ck

Description

- A green screen can be used to substitute different backgrounds
- Requires proper equipment, lighting, and post production

Questions to Ask

- Is the presenter able to convey the required actions in the studio?
- Does the green screen provide enough added value to justify its use?
- Will your viewers be distracted by the background or will it contribute to the learning experience?

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Appendix 2: List of Interviewees

The interviews were carried out between August and October 2014.

Chris Boebel	Media Development Director, MIT Office of Digital Learning/MITx
Colin Fredericks	Senior Project Lead, HarvardX
Laurie Harrison	Director, Online Learning Strategies, University of Toronto
William Heikoop	Online Learning Coordinator, University of Toronto
Brent Izutsu	Director of Digital Media, Office of the Vice Provost for Online Learning, Stanford University
Mia Lincoln	Partnership Operations Associate, Khan Academy
Justin Reich	HarvardX Research Fellow and Fellow at the Berkman Center for Internet & Society
Katy Reichelt	Director of Video Production, Udacity
Lara Ruppertz	Head of Course Development and Support, iversity
Nigel Smith	Head of Courses, FutureLearn
Molly Wasser	Lead Course Developer, HarvardX
Jake Wintermute	Synthetic Biology MOOC Teacher, Center for Research and Interdisciplinarity, Paris

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