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Video instructions as support for beyond classroom learning

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Abstract

Learners are referring to streaming instructional videos for the understanding of concepts and theories, for step-by-step demonstrations in learning to do something as well as in familiarizing themselves with environments through simulations and virtual tours. Through a survey set out to a group of university students in a computer based course, this research reports the use and beliefs of using video instructions as a tool for learning that transcends the classroom. Findings show that students will refer to video instructions first before attempting any other form of online instruction.
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Keywords: Instruction video; Youtube; learner's preference

1. Introduction

The use of video instructions in the learning environment is becoming common over the last two decades in classrooms as well as for distance learning (Whatley & Ahmad, 2007). Video when used appropriately can be a powerful teaching medium to grab students' attention and can also be a strong motivator for learning (Whatley & Ahmad, 2007). Over the years, videos have gained popularity on the Web as a medium of presenting materials that incorporate multimedia content for e-learning. Interactive videos allow students to have repetitive viewing by which they can pause and replay the content as needed to help their understanding and improve information retention (Whatley & Ahmad, 2007). There are many formats of instructional videos available. These include expert demonstrations and explanations, screen captured presentations, mini lectures, interviews, scenarios and etc. (Fadde, 2008). The types and categories of digital video instructions are listed in Figure 1.

Video not only allows students to learn at their own pace, own time and in the comfort of their own environments, but it also provides a way for them to learn independently without relying on others for help. Today, with the affordability and variety of technology has to offer, it seems that videos are suitable for beyond classroom and large classroom learning. Videos have proven to be beneficial to learning as exemplified by some empirical studies on the case for using videos in teaching and learning. It has resulted in valuable collaborations, communication and reflections among learners as well as instructors (Baecker, 2002; Cunningham & Benedetto, 2002; Hartsell & Yuen, 2006; Hayes, 2009; Leijen et al., 2009; Whatley & Ahmad, 2007). Videos in the form of Webcasts or podcasts are published in streaming format and then broadcasted over the Web for self-paced learning especially in distance education (Oliver, 2005).

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Using videos as an aid for teaching relieves the instructor of repeating lectures or skilled demonstrations. The advancement of streaming technologies which enables rich media content to be delivered to learners as an entire program or specific segment of it anywhere and at any time as long as it is connected to the Web befits the requirements of mobile and ubiquitous learning (Jones & Jo, 2004). Pre-loaded videos on the other hand, can be shared over a local area network (LAN) where instructional video content is delivered to a server where it is connected to the LAN for playback (Hartsell & Yuen, 2006).

The downside of using video instruction is the long development time needed for streaming videos compared to the development time needed for a lecture (Weiser & Wilson, 1999 in Liu, Liao & Pratt, 2009). According to Vaughn (2008), besides hardware and software issues, instructors need to have knowledge on video authoring, instructional design skills and creativity to create good streaming videos. Instructors will also need to identify students' preferred channels for knowledge sharing as well as have necessary knowledge on how to upload video on social media sites while keeping the content open and secured.
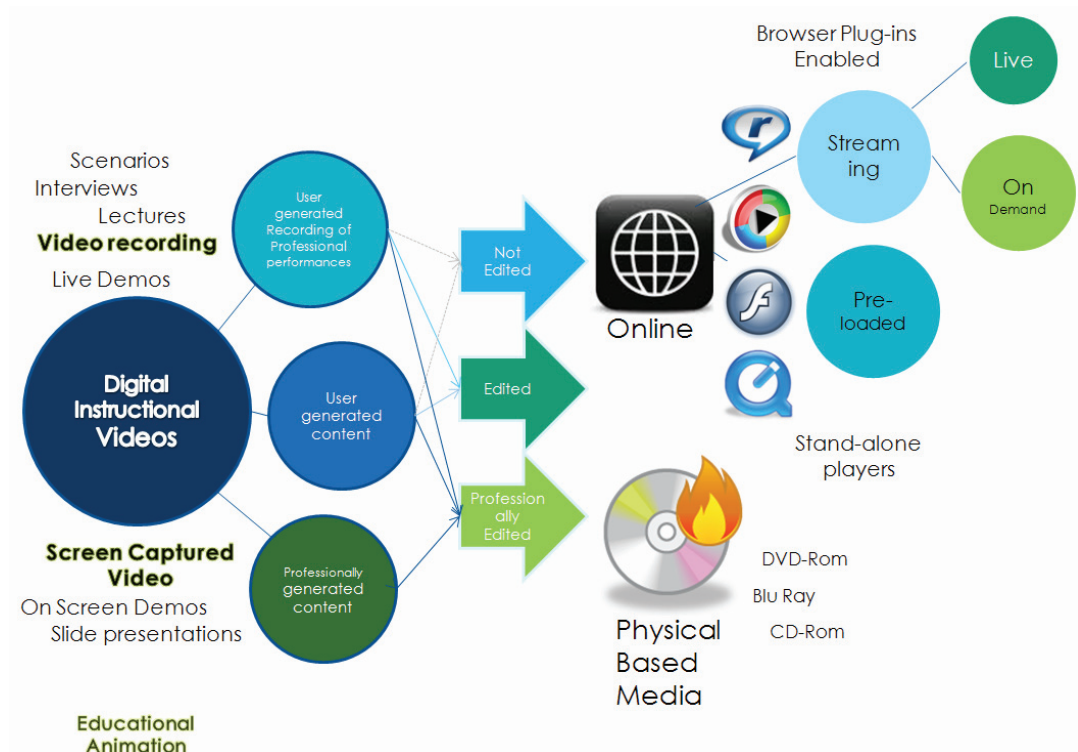

Figure 1: Types of digital instructional videos

2. Literature review

Downloading videos and viewing it is nothing new to students these days. As most current university students belong to a group of learners known as the Digital Natives (Prensky, 2001), they are seen as savvy digital tool users. They spend a lot of their time communicating, learning and playing games using digital devices. They are also skilled users and creators of digital content (Prensky, 2001; Kennedy et al., 2007). One of the main uses of digital devices by them is for playing streaming content such as music and videos (Kennedy et al., 2007). Even without guidance from instructors, Digital Natives pick up these digital skills outside the classroom. As most university

courses expect that students' will continue to learn or research even after they have exited the classroom, instructors can facilitate, engage and motivate students by understanding their learning style and needs (Prensky, 2001). Most universities apply blended learning in their learning context as shown in

Figure 2. Blended learning combines traditional face to face classroom learning with Information Communications Technology (ICT) to help students learn more efficiently (Higgins, 2003). Blended learning is also called hybrid learning where many modes of learning are combined, with the usual combination of web-based instruction with live instruction, resulting in a socially supported and constructive learning experience (Oliver, 2005).
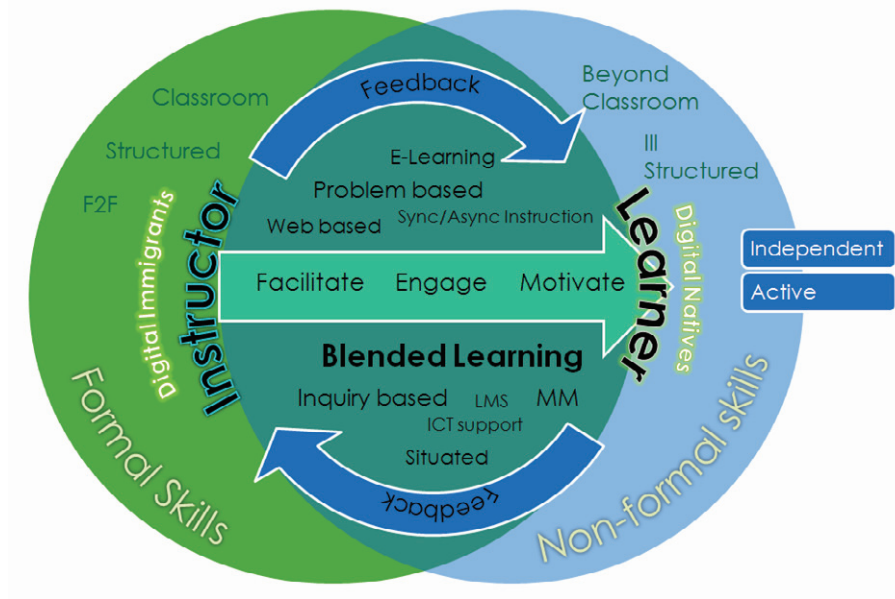

Figure 2: Current learning context

2.1 YouTube revolution

YouTube is one of the many video sharing sites on the Web. As social media become increasingly popular over the Web, YouTube like other social media tools such as Wikis and blogs have found their way into the everyday classroom. YouTube has been voted as the top video sharing site in The Emerging List of Top 100 Tools for Learning in the year 2009 and 2010 (C4LPT, 2010). YouTube has recorded an average of 65,000 uploads and 100 million videos viewed per day in 2006 (USA Today, 2006) and as of 17th May 2010, the number of videos viewed per day has exceeded 2 billion (Lewin, 2010). Although most users upload content that are deemed entertainingly "interesting" on YouTube (Kruitbosch & Nack, 2008), it is also a site where students seek informative learning videos (Yuen, 2009). YouTube contains not only user-generated videos but also user-generated-of-a-professional-performance videos, professional recordings, user edited or professionally edited videos (Kruitbosch & Nack, 2008).

YouTube as a learning tool has many advantages; mainly because it is free, user friendly and mobile friendly. Videos in YouTube also allow for tagging, annotations, deep links, commenting and captioning. Since it is heavily dependent on users' contribution, user-generated content including user-generated videos may contain safety and legal concerns attached to them. User-generated content encompasses various kinds of media content which are publicly made available on the Web. They are produced by end-users reflect some creative effort created outside professional routines and practices (Wunsch-Vincent & Graham, 2006).

Though there are measures taken to keep user sharing sites safe for all, there are still possibilities of inappropriate content such as those deemed offensive, violent or pornographic (Bloxx, 2010). Education institutions and instructors will have to work hand in hand to ensure that students access only relevant content which is useful to their learning. Nonetheless, user-generated content has many advantages as it allows discussion and collaboration between learners as compared to professionally created video instructions. Jane Hart (2010) explains:

> It is not about churning out content (however well instructionally designed) but also about the social aspects of learning. Individuals need to have the opportunity to discuss, collaborate and share their experiences – and thereby add to the body of knowledge around a topic. UGC (user-generated content) should therefore be seen as a valuable aspect for formal learning context – as much as expert generated content (as cited in Poulos (2010), para.3).

3. Students' belief and use of video instructions for learning

Students' belief and preference of learning are surveyed to identify strategies of integrating video instructions as support for formal classroom learning. Survey data retrieved from 31 students taking a computer based learning course in the Faculty of Creative Multimedia, Multimedia University is collected and analyzed. The survey reports students' belief and preference for video instructions for learning. The results of the survey are presented in Table 1.

Table 1: Students' belief and preference of video instructions for learning

Statement	Mean	Std Dev
Video is better than on screen text/textbooks	4.000	.127
Learn better with video than without them	3.733	.172
Video helps learning	4.333	.111
Video holds attention	4.033	.122

*5 point Likert scale based on 1-Absolutely No to 5-Absolutely Yes

Students' preference on seeking information for learning	Mean	Std Dev
Textbook/On Screen text	2.516	1.061
Online (non-video)	3.516	1.480
Forums	2.065	1.031
Blog/podcast	1.968	1.169
Video posted by lecturer	4.067	.159
Videos from Expert (Content/subject matter)	4.000	.159
Videos from *YouTube*	4.032	.188

*5 point Likert scale based on 1-Never to 5-Always

Students' belief on the aspects of a "good" streaming video	Mean	Std Dev
Video resolution	4.300	.794
Visual Content	4.567	.626
Audio Content	4.300	.915
Subtitles (Caption)	3.933	.785
Fast loading	4.433	.679
Short duration	3.100	.803

*5 point Likert scale based on 1-Absolutely No to 5-Absolutely Yes

4. Results and discussion

Overall feedback from the survey regarding video instructions for learning is positive. Generally, students believe that videos help them with their learning and are able to hold their attention. As most Digital Natives are technology savvy, they have little issues with obtaining video instructions and viewing them. Video instructions are generally the most preferred method of learning as compared to other online learning media. Videos containing

multimedia elements are able to hold the attention of current learners who are impatient and have short attention span (Prensky, 2001). There is a little difference between preferences of videos created and selected by lecturers, videos professionally created by subject matter experts or user-generated videos on YouTube. A larger sample of students is probably needed to determine the significance of these results.

In regard to creating good streaming videos, students believe that high quality visual content and fast loading clips are the most important elements. Students believe that audio content is not as important as visual content. The most probable reason for this might be because even without audio content, silent video instructions can still transfer knowledge. The redundancy principle by Clark & Mayer (2003) suggests that having redundant sound is harmful to learning. As for impatient learners, slow loading videos will result in Digital Natives getting bored and distracted because of the waiting time needed; therefore publishing video instructions on fast bandwidth sites would attract learners and ensure smooth transfer of knowledge. Though there are suggestions to reduce download time by chunking information into smaller parts, the students do not think that keeping video durations short will make for good instructional videos. Students also believe that a good video should be accompanied with captions. Captions or subtitles are advantageous, especially for learners lacking in language proficiency. Captions are also useful when spoken audio is not clear.

5. Conclusion

Considering the advantages of using streaming video for independent learning, this preliminary study examined students' belief and preference for beyond classroom learning. Though this research is limited only to a small population of Digital Natives taking a computer based course in the Faculty of Creative Multimedia, Multimedia University, it is found that video instructions are favorable to these university students and have a tremendous potential as a supporting tool for formal learning beyond the traditional classroom setting. From the research findings, further study in the areas of instructional video design and collaborative learning is implicated. Future study will include in depth study of factors affecting students' choice of user-generated video instructions for learning, which include study of context, instructional video design and social factors. Further investigation into the extent that user-generated video instructions can help learning will also be carried out.

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