

YouTube as an Academic Tool for ICT Lecturers

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Abstract

In this paper, the use of YouTube© as an academic tool by lecturers in four Information Systems (IS) departments in South Africa was investigated. Using engaging and entertaining learning tools and techniques inside the classroom has become imperative in order to ensure, amongst others, engagement and motivation for the scholars of today. In this paper, the use of YouTube© by Information Systems lecturers in South Africa is explored for use in the classroom. The findings of our survey indicated that most of the lecturers do use YouTube, but mostly as passive participants. Only one-third of the lecturers indicated that they use online videos in their classes, although two-thirds thought it is a good idea. The research done for this paper opens up a number of new research areas that can be explored.

Keywords: Education, Web 2.0 technologies, YouTube, Student Engagement

Introduction

More and more students at higher education institutions are using information technology and the institutions have to invest money in the latest technologies to meet the needs of their students (Loyd, Dean, & Cooper, 2007). Higher education institutions realise the popularity of Web 2.0 applications, and especially Facebook that has become a pervasive element in our students' lives (Hewitt & Forte, 2006).

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Online social networks have been developing at a high rate over the past three decades (Mazer, Murphy, & Simonds, 2007). Online social networking communities on the internet, such as Facebook, Bebo, Cyworld and MySpace, are an integral part of students' daily lives and most people's daily practices (Baker-Eveleth, Stone, & Pendegraft, 2007; Boyd & Ellison, 2008) and online environments create

opportunities to learn. Other examples of online social networking sites are YouTube; Twitter; Flickr; EBay; Yousendit; Cyberchair; Blogspot and Amazon.

YouTube was created as a video-sharing service for everyday users, but has caught the attention of educators. In 2009, YouTube launched YouTube EDU which is a channel produced by colleges and universities. This channel grew in the first year to 30 colleges and universities and over 65 000 videos (Snelson, 2011).

Mazer et al. (2007) raise the following question: ‘What motivates a faculty member to use such a network (social network) as opposed to other forms of mediated communication?’ It is not clear what drives lecturers to make use of new technologies or social networks for academic purposes or as extra mediums for teaching their students. Is it because the lecturer is creative and innovative? Or does the lecturer have the knowledge and skills to incorporate technological mediums as a teaching strategy and others don’t?

Eberhardt (2007) raises the following question: How do social networks affect students’ learning? Thus, lecturers need to understand the possible influence of new technologies such as social networking sites, on student learning, to be able to apply it correctly.

Social networks have growing pedagogical potential, because it offers an opportunity for students to share ideas, knowledge, and individual and group activities Dalsgaard (2008). According to Minocha and Thomas (2007), Blogs, Wiki’s and social network sites such as Facebook, have all been a part of the growing trend towards the creation and sharing of information.

There is a need for an increased awareness of how these online social networks can possibly be applied as an academic tool to supplement traditional teaching. The problem that we explore in this paper is how YouTube can be used as an educational tool. Due to the number of videos that is freely available on YouTube, it is important that educators explore the possible use of this medium.

In this paper we look at the use of YouTube as one such online social network by ICT lecturers in Southern Africa, by first discussing online social networking in education generally. A background of Web 2.0 and YouTube will be given. We also need to look at how we can engage students in learning and then the results of an online survey done will be discussed. We conclude the paper with some findings and recommendations.

Research Questions

The following research questions are raised:

- For which purposes do lecturers make use of YouTube?
- Do lecturers apply YouTube as an academic tool to supplement their teaching strategy?

Before attempting to answer these questions, we first discuss what is explained in the current literature.

Literature Review

Web 2.0

Web 2.0 is a term coined by O’Reilly media in 2003 and refers to the second generation of web-based applications (Duffy, 2007). It characterizes the transition from the read-only Web 1.0 to the participatory, collaborative and distributed Web 2.0 (Greenhow, Robelia, & Hughes, 2009). Even though there are a number of definitions for Web 2.0, none of these exclude one another, because they all refer to the social use of the internet (Grosbeck, 2009). Web 2.0 is also known as the

“Read Write Web” (Duffy, 2007) and the Participatory Web (Cain & Fox, 2009). Cain and Fox (2009) state the importance of realizing that Web 2.0 should be treated as an evolution of accustomed and unaccustomed technologies, rather than an entirely new construct.

Web 2.0 is a platform which allows people to share, collaborate and make active contributions to information online (Grosbeck, 2009). Unlike the old Web 1.0 whose content was mostly static, Web 2.0 is a dynamic environment where content can change to suit contextual needs (Duffy, 2007). It is a platform where users are valued just as much as the information they are willing to share with others (Greenhow et al., 2009). Web 2.0 also hosts a variety of innovative technologies, which include blogs and wikis (Cain & Fox, 2009). Video casting websites such as YouTube (www.youtube.com), social networking sites like Facebook (www.facebook.com) and micro blogs like Twitter (www.twitter.com) are but a few of the widely used Web 2.0 applications, which are available to anyone (Chui, Miller, & Roberts, 2009). Duffy (2007) highlights a few more key characteristics of Web 2.0 applications which promote usability, which include simple sharing mechanisms for multimedia, the ability for personal profiling and the activation of features for other sites. Chui et al. (2009) state that as the internet continues to evolve, newer technologies will begin to emerge.

YouTube

YouTube was founded in February 2005 by Chad Hurley, Steve Chen, and Jawed Karim and can be found online at www.youtube.com (Hansen & Erdley, 2009). It is currently one of the biggest hosts for online video content and the third most popular website after Google and Facebook (Tan & Pearce, 2012). YouTube is a popular form of the Web 2.0 technology (Duffy, 2007) and access to YouTube and creating YouTube accounts is free of charge (Agazio & Buckley, 2009). Playlists and channels are some of the popular features which aid in the reduction of search time and playback efficiency (Tan & Pearce, 2012).

YouTube has grown steadily from 30,000 viewers in April 2005 to 100 million video views per day in July 2006 (Agazio & Buckley, 2009). YouTube was bought by Google in 2006 (Miller, 2010) and in 2007, YouTube had 20 million users and hosted about 60% of all the videos posted on the internet (Hansen & Erdley, 2009). YouTube is a participatory culture, meaning that it does not only host material like sports clips and music videos (Tan & Pearce, 2012), but can also be seen as a repository for user generated video content (Jarrett, 2010). During 2009 YouTube had a total of 258 million users and it was assumed that 65,000 video clips were uploaded on a daily basis, and that every minute, 10 hours' worth of video were uploaded (Agazio & Buckley, 2009). Currently, YouTube is a website which caters for high volumes of traffic, a platform for broadcasting, a media archive and a social network (Jones & Cuthrell, 2011). As a social network, YouTube allows for sharing, uploading and viewing a wide variety of videos hosted online - these videos can be accessed via blogs, handheld devices and websites (Hansen & Erdley, 2009). In 2012, an average 48 hours of video is uploaded every minute and 3 billion views are generated daily (Wattenhofer, Wattenhofer, & Zhu, 2012).

YouTube as a learning tool

Using YouTube in the classroom is an innovative and cost-effective way to bridge the gap between students from the Net Generation and their teachers (Abell, 2011). It has a tool that has been utilized in nursing education (Burke, Snyder, & Rager, 2009; Clifton & Mann, 2011; Hansen & Erdley, 2009). Because most students already use YouTube in their personal lives, seeing this platform in the classroom should not be unfamiliar to them – this also gives those that are unfamiliar with YouTube the opportunity to experience a new technology (Burke et al., 2009). The website offers a wide variety of multimedia content that could be used in teaching (Tan & Pearce, 2012). Tan and Pearce (2012) further mention that this content could be teacher-created

or general content that may be useful in illustrating key ideas and showing students some theoretical aspects of their courses in a practical setting. Additionally, YouTube provides students with the ability to receive information from guest speakers, without actually having the guest speaker present in the classroom (Abell, 2011). Lecturers also have the ability to share the videos with their students allowing them to review what was covered in class at a place and time which suits them – all that is required is an active internet connection (Clifton & Mann, 2011).

Effects of YouTube on student engagement

Harris (2011) conducted a study using YouTube in marketing, management and entrepreneurial courses and came to the conclusion that videos inspire learning, engagement and excitement in the classroom. The reason for this is because videos elicit emotions and can have a strong effect on a person's mind and senses (Berk, 2009). Educational videos also have the ability to heighten the student's interest in the subject and in turn, may motivate them to learn more (Hansen & Erdley, 2009). This motivation is an example of cognitive engagement (Archambault, Janosz, Fallu, & Pagani, 2009). Displaying videos in the classroom also fuels additional discussion amongst students and aids in (Harris, 2011) enhancing behavioural engagement (Trowler, 2010). These findings coincide with those made by Jones and Cuthrell (2011) and Clifton and Mann (2011), who also convey that videos are powerful discussion catalysts. It is important to illustrate that videos in the classroom are meant to stimulate discussions amongst students, and not become a substitution mechanism for discussion (Clifton & Mann, 2011). "Video is not an end in itself but a means toward achieving learning goals and objectives" (Duffy, 2007). YouTube's ease of use makes one believe that teachers are no longer necessary, however, teachers do still play a vital role when incorporating YouTube and videos in the classroom, because they are the ones who choose the appropriate videos, initiate and guide discussions to meet a certain aim (Clifton & Mann, 2011). Students feel that the combination of asking questions, offering feedback and the additional commentary of the lecturer somehow "adds" to the quality of a video (Tan & Pearce, 2012). This is an example of emotional engagement in practice (Wolters & Taylor, 2012).

Limitations and challenges of YouTube in education

YouTube, just like most technologies also has constraints and disadvantages.

Because YouTube is an environment where every user is free to share what he or she wants, this can create a scenario where student's access misleading, incorrect or potentially harmful information (Tan & Pearce, 2012). This can occur, since YouTube has no formal quality regulations (Clifton & Mann, 2011). It is important that educators and students research the credibility of any multimedia which they intend to use for educational purposes to avoid the spread of misinformation (Hansen & Erdley, 2009). This will also help students in identifying whether or not information is relevant and unbiased (Clifton & Mann, 2011). Prior to displaying videos in class, faculty must review the entire clip for language and content to ensure its relevance and reliability (Abell, 2011).

Using YouTube in the classroom can also pose as a challenge, because locating appropriate and class-related material in YouTube's huge video storage can be both difficult and time consuming, especially if the lecturer has no specific video clip in mind (Burke, Snyder & Rager, 2009). Burke, Snyder, and Rager (2009) mention that search efficiency can be improved by searching personalized YouTube pages with similar content or by using appropriate descriptive key words.

A further limitation in using YouTube in education is technology availability (Jones & Cuthrell, 2011). Jones and Cuthrell (2011) state that this can be due to having limited bandwidth, the institution's proxy and firewall settings or the general lack of hardware in the classroom. Limited bandwidth happens to be a common issue in South Africa (Chetty et al., 2012). It must also be

noted that videos are not always available and can be removed from YouTube for a number of reasons (Abell, 2011).

Further important challenges associated with using YouTube in the classroom are intellectual property and copyright laws (Hansen & Erdley, 2009). It is therefore recommended that faculty include a disclaimer for each video link in the course outline, state that the content of the material is from YouTube and consult with the appropriate officials prior to displaying the video in class (Abell, 2011).

Student Engagement

Student engagement has been defined and measured in numerous different ways over the past two decades (Fredericks et al., 2011). Fredericks et al. (2011) state that earlier definitions focus on the behaviour and participation of students. Newer definitions for engagement incorporate the concepts of emotional and cognitive processes (Wolters & Taylor, 2012). Trowler's (2010) definition for student engagement is "the time and effort students devote to activities that are empirically linked to desired outcomes of college and what institutions do to induce students to participate in these activities". From this new definition, scientists have begun to view student engagement as a multidimensional construct which reflects on both internal and external factors (Reeve, 2012). The three dimensions associated to student engagement are elaborated below:

- Behavioural engagement refers to a student's ability to abide by behavioural norms, which include attendance, attention and effort (Trowler, 2010).
- Emotional engagement focuses on the extent to which a student experiences affective reactions, which can include interest, enjoyment or a sense of comfort towards educators or extracurricular activities (Wolters & Taylor, 2012).
- Cognitive engagement covers a student's competency and willingness to learn and establish goals (Archambault et al., 2009).

Reeve (2012) mentions an additional fourth dimension, agentic engagement, which focuses on the student's willingness to try and enrich a learning experience, as opposed to passively receiving it as a given.

For the purpose of this paper, when referring to student engagement, the combination of behavioural, emotional and cognitive engagement is meant.

When measuring a student's engagement for a specific learning activity, their behavioural engagement, emotional engagement and cognitive engagement must all be assessed (Reeve, 2012). The main advantage of having such a multidimensional definition for student engagement is that the concept covers different aspects of human development (Archambault et al., 2009). Archambault et al. (2009) are also of the opinion that a multidimensional definition can aid in prevention and intervention strategies.

Summary

Social networking sites should not be avoided or left out of consideration as a supplementary tool in teaching. Lecturers need to find out how best to make use of it, for it to be beneficial to students in an academic environment. YouTube videos can enhance the learning experience of students if used correctly. The fact that student engagement means behavioural, emotional and cognitive engagement in the learning material, makes videos an ideal supplementary tool in the teaching environment.

Lecturers need to understand new technologies to be able to lead the way for students to benefit from the use of it, which support their learning experience and personal development (Cain & Fox, 2009).

Research Methodology

Research Approach

A mainly quantitative approach was selected for this research, as this is attempting to identify and explore individual academic experiences of YouTube. Quantitative methods assume tangible, measurable phenomena.

Research Design

A web-based questionnaire containing closed questions was created and uploaded onto a free online web-based survey platform. Lecturers could access the questionnaire at any time during a two week period with no maximum time limit set. Lecturers from several universities were invited via email to participate in the survey.

Research Sample

The research sample was selected from Information Systems lecturers from the following universities in alphabetical order. Rhodes University, the University of Cape Town, University of Johannesburg, University of Pretoria, and the University of Zululand. An initial sample of lecturers from Information Systems were selected because of easy access and the likelihood that they would be early adopters of such technology.

Unfortunately, only 15 complete and usable results were obtained, making this an initial investigation into the area. The questionnaire contained 8 multiple choice questions, which were designed to explore lecturers use and perceptions of using YouTube. No demographic questions, or questions which could identify a respondent in any way, were asked.

Table 1 lists the questions asked, with possible answers.

Table 1: Questionnaire

	Question	Possible Answers
1	Do you use YouTube?	Yes; No
2	If you answered "Yes" in Question 1, please answer the following: For which purposes do you use YouTube?	Social; Academic; Social & Academic
3	Are you actively participating in any channels on YouTube, related to your work (teaching) or research interests?	Yes; No
4	If you answered "Yes" in Question 3, please choose which type of channels you are actively participating in:	Research related; Teaching related; Research & teaching related
5	Have you ever applied any online video platforms as a tool for academic learning as part of your teaching strategy?	Yes; No

	Question	Possible Answers
6	Do you think that an online video platform, such as YouTube, can be applied as a tool for academic learning as part of your teaching strategy?	Yes; No; Not sure
7	Would you consider using YouTube as an academic tool where students, and students and lecturers can engage in group work or online discussions related to the subject content?	Yes; No; Undecided
8	If you answered “No” in Question 6, please provide a reason why you would not use it:	Course content not conducive to using videos; There are better tools; Bandwidth issues; Security issues; Other

Findings

This section details the questions and the results of the questions mentioned in the above section.

The overwhelming number of respondents (93%) indicated that they use YouTube. Perhaps one can speculate that many of the lecturers who failed to respond, did so as they were not using YouTube. Only one respondent indicated that he/she did not use YouTube.

Of the 14 who confirmed that they use YouTube, 64% use YouTube for both social and academic purposes, while 21% use YouTube purely for social reasons, and 14% indicated that they use YouTube only for academic purposes. As the term ‘social’ use was not defined in the survey, it could have been interpreted in many different ways. For example, some lecturers may have assumed social to mean posting their own links, or spending time searching or viewing videos, while others may have assumed social to imply rating or commenting on videos. There is no way of assessing the ratio between social and academic use of the majority (64%) of the respondents. Some may have had a 90% academic and a 10% social, while others may have had different ratios.

The next question asked if the respondent was participating in any channels on YouTube related to teaching or research interests. The majority (80%) replied in the negative, while only 20% said they were using YouTube. It would be interesting to explore and determine the overall statistics of YouTube users, as to the percentages of active participants verse passive participants. Active participation includes posting videos, commenting and or rating videos, and sharing videos. The fact that only 20% of the lecturers who responded stated that they are active participants is somewhat surprising. One could hypothesise that of these sharing is the most commonly performed activity, and that lecturers generally would be expected to share information/content. This also appears to indicate that lecturers are not taking YouTube seriously as an academic tool, as only 20% of respondents are active participants, one could assume that of those who did not respond to the survey, the rate would have been lower. It would be interesting to explore the effect of age on participation, as the general ICT lecturer in South Africa is over 40. Of the three lecturers who indicated they are active participants, two participate in research and teaching related sites, and the other one in only teaching related sites.

The next question asked if the respondent had ever applied any online video platforms as a tool for academic learning as part of their teaching strategy. Only one third of respondents said yes, surprisingly two thirds said they were not. This question did not mention YouTube, so only 5 Information Systems lecturers are using online videos in their teaching, while 10 said they were not.

One could ask if those lecturers who are not using online videos are out of touch with the modern student, and is it not time to review our teaching strategies?

The following question asked if the respondent thought that an online video platform could be applied as a tool for academic learning as part of their teaching strategy. Interestingly, the figures are the inverse of the previous question, with 10 saying yes, and 5 being unsure. No respondent said no outright. So, all respondents thought it could be used; perhaps they are unsure as to how to use it. They do not appear to have a teaching strategy of using online videos. This appears to be an area where best practices and guidelines could assist. Although no respondent answered an outright no to this question, two respondents indicated that bandwidth or course content prohibited the use of online video. While bandwidth may have been a concern, it should not be a major issue in the universities surveyed. Once again, it would be interesting to explore the second issue, as the authors cannot see any Information Systems course in which online videos could not be beneficial.

The final question asked if the respondent would consider using YouTube to facilitate group work or online discussions. Of the respondents, only 4 (27%) said yes, 1 said no, and 67% were undecided. It would be interesting to explore the reasons behind the answers, in particular the respondent who answered no. Perhaps many were unsure as to how they would use YouTube to facilitate group work or online discussions. This appears to be an area where guidance and encouragement is needed.

Conclusion and Recommendations

To be able to answer the research question:

For which purposes do lecturers make use of YouTube?

we found that most South African ICT lecturers use YouTube for social and academic purposes. Most of them are passive participants and do not post their own videos or participate in the conversations.

The second research question was:

Do lecturers apply YouTube as an academic tool to supplement their teaching strategy?

The analysis of the data suggested that only one third of the ICT lecturers make use of YouTube as a teaching tool, but two thirds of them indicated that they think an online video tool will be useful in the teaching environment. Most of the lecturers was undecided whether they can use YouTube to facilitate group work or online discussions.

What we realised looking at the results from the online survey is that we need to delve deeper into the reasons why ICT lecturers are not taking YouTube seriously as a teaching tool, while most of them felt that it will be a useful tool. We recommend that we conduct focus group discussions and interviews with ICT lecturers to further explore the use of YouTube in our teaching practices.

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Biographies



Sumarie Roodt is a Senior Lecturer in the Department of Information Systems at the University of Cape Town (UCT), South Africa. Sumarie has a passion for developing teaching and learning toolkits that leverage emerging technologies in order to improve the learning experiences of the Net Generation and more recent generations. Her re-search interests are social computing, web 2.0 and web 3.0 for education, neroeducation and digital game-based learning.



Carina de Villiers is currently full professor and was Head of the Department of Informatics from 2000 until 2011 at the University of Pretoria (UP), South Africa. She obtained a BSc(Computer Science and Mathematics), Higher Education Diploma, Diploma in Tertiary Education, MEd (Didactics) cum laude, Honours degree in Computer Science and a PhD(Informatics) degree. She started her career in 1979 as a junior lecturer at the University of South Africa and joined the University of Pretoria as an associate professor in 1996. She also served as Chairperson of the School of Information Technology, consisting of three departments, from 2002 to 2005. She has co-authored 9 books, 26 articles in peer-reviewed international journals and delivered more than 90 international and national conference papers on different topics in Information Systems and IS Education. She is a member of several international bodies and serves on a number of editorial and advisory boards for journals, including IT for Development and AIS Transactions for HCI. She holds a National Research Foundation rating as an established IS researcher since 2000. The Department of Informatics received ABET accreditation under her leadership in 2008, one of the first departments outside the USA.



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