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An Assessment of Faculty Usage of YouTube as a Teaching Resource

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ABSTRACT

Creative classroom techniques incorporating technology promote a more productive and enriched learning environment. Preparing future health educators in today's technology-driven society requires faculty to adopt new teaching strategies which motivate and engage the new tech-savvy Web 2.0 generation. YouTube® is a popular online video-sharing web site for both scholarly and non-scholarly communication. Currently, there are no published studies on the quantitative assessment of faculty utilization of YouTube in the health education classroom. The purpose of this pilot study was to 1) determine faculty's current and potential utilization of YouTube in their classes; 2) identify faculty perceptions of the benefits of YouTube as a health education resource for in-class and online courses; and 3) identify potential limitations and challenges of this online resource. Using an online survey instrument developed by the researchers and provided via a secured website, data were collected from a non-randomized convenience sample of 24 faculty members, obtained from a population of 59 full-time tenure-track and fixed-term health and human performance faculty teaching at a mid-size university in the southeastern U.S. The results indicated that, overall, the faculty who use YouTube in their courses consider it to be an effective teaching resource for enhancing their health education course material. In addition, the non-user faculty expressed interest in learning more about the potential application of YouTube as an instructional tool for their classes. While further research is necessary, this pilot study suggests that YouTube may be a viable, innovative teaching resource for use by university faculty in health education and other disciplines.

INTRODUCTION

College instructors can ensure they are addressing the learning styles and attention span of the new faster-paced, web-connected learners, sometimes referred to as the Web 2.0 generation, by not only providing relevant education, but also using effective and engaging strategies. Innovative teaching strategies are imperative in higher education courses to engage and motivate the newer tech-savvy generation.^{1,2,3} Research has shown that creative classroom techniques that incorporate technology promote a more productive and enriched learning environment.^{1,2} Emerging technologies, such as the YouTube video-sharing web site (www.YouTube.com), are important to both in-class and online instructors for establishing a sense of classroom community and achieving better learner outcomes.^{3,4} Internet-based resources like YouTube can also be used to integrate relevant content and encourage learners to reflect on how the material can be applied to settings within their discipline.^{5,6} Through this fresh and innovative technology medium, instructors have a new educational tool that speaks to the students of the new millennium and is geared towards the learning style of those who are more comfortable and accustomed to the online environment.

Research indicates that 20% of the current college population began using the Internet between the ages of 5 and 8, and all college students were using the Internet by the time they were 16 years of age.⁴ College students are also connecting to the

Internet more than any other group, and are using it heavily for educational purposes.⁴ Nearly four-fifths of college students (79%) agree that the Internet has a positive impact on their college experience.^{3,4}

Limited research and discussion in the literature exist on the utilization of YouTube as a tool for educators in a college setting. In this article, a brief overview of YouTube and its applications in higher education, and in particular college health education, will be presented, along with a discussion of some of the challenges and limitations in using this online resource. Secondly, the results of a pilot study conducted by the researchers on the utilization and perceptions of YouTube among a small sample of college health education faculty will be presented. Lastly, conclusions and implications from the study will be discussed.

An Overview of YouTube

Created in 2005, YouTube provides a public-access Web-based platform that allows people to easily upload, view, and share video clips on www.YouTube.com.⁵ YouTube also allows users to share video clips across the Internet through other web sites, mobile devices, blogs, and email. It has quickly become the most widely used resource for online video in the United States.⁵ Anyone with Internet access can watch videos on YouTube, but user registration (which is free) is required to upload a video. It should be noted that posting of copyrighted material on the site is prohibited due to U.S. copyright laws.

According to a 2006 survey, 100 million video clips are viewed daily on YouTube, with an additional 65,000 new videos uploaded every 24 hours.⁶ The web site averages nearly 20 million visitors per month.⁶ An estimated 56% of the users are male, with the most prominent age range being 12 to 17 years old. Most information posted is for entertainment purposes. However, some information is educational, and may be provided by various government and community agencies. For example the World Health Organization (WHO) has uploaded their Public Service Announcements to YouTube for viewing.⁷

Applications of YouTube in Higher Education

Based on research from the Pew Internet and American Life Project report, most college students are already using technologies similar to YouTube in their personal lives, so seeing this type of platform in the classroom most likely will be familiar to them.^{3,4} As a teaching supplement, YouTube can be used to support those students who, because of their digital learning style, are more accustomed to using technology such as the Internet, video blogging, and text messaging than more traditional classroom learning tools. For nontraditional, older learners, YouTube offers them an opportunity to experience new technology that will help to provide them with marketable skills for future careers. Through this innovative online resource, instructors can help learners to create or utilize content that is personally relevant, thereby providing a more engaging learning environment.⁸ In addition, YouTube is a free teaching resource for faculty, which is an important consideration for educational budgets.

Through YouTube, links can be easily clipped into PowerPoint presentations, documents, or online teaching platforms (such as Blackboard®, Moodle®, or Sakai®) by simply cutting and pasting the selected video URL that is displayed on the YouTube site.^{3,5} Another way YouTube can be used is by providing an online platform for the posting of a video of a guest speaker for the course, which is especially useful for online classes and for classrooms located in more rural settings where appropriate speakers may be difficult to find.³ If desired, access to videos uploaded to YouTube by faculty or students can be restricted to those in the course.

In addition to using video clips, some instructors are videotaping and posting online, also known as vidcasting, their lectures on YouTube for both online and in-class learners. For example, two professors at the University of Minnesota created a 3-D animation vidcast explaining a mathematical concept that attracted more than 1 million views, and a Kansas State University professor of cultural anthropology posted a vidcast about Web 2.0 that drew more than 400,000 views.⁹ Through such online mechanisms, YouTube offers an opportunity to instructors to greatly expand their educational audiences, even to international locations, not only increasing their ability to provide online courses, but also increasing the public's awareness of the university's departments and programs.⁹ Additionally, another benefit of YouTube is that college faculty and students can access scholarly content, real-life situations, and demonstrations of applicable skills as part of the course lecture in the form of video clips, such as disaster response videos from the American Red Cross. This provides additional opportunities for educators to engage students visually in the educational learning process.

Using YouTube in College Health Education Courses

Health videos on a wide variety of topics from community and government organizations such as the American Red Cross, the Centers for Disease Control and Prevention, the National Institutes of Health, and the World Health Organization are increasingly becoming available each month through YouTube. These kinds of credible organizations can provide reliable educational resources for instructors to use in their health education courses.¹⁰ For instance, a series of health education videos are

available on the YouTube site on the topics of flu vaccination, blood glucose testing, and cervical cancer screening, and a series of video vignettes by The Commonwealth Fund that illustrate health disparities and their impact on healthcare access are posted on the site¹⁰.

Limitations and Challenges in Using YouTube

While YouTube offers many positive features as a teaching tool, this new technology does have some limitations and challenges. For example, searching for appropriate or content-specific clips on YouTube's huge video holdings may prove challenging and time consuming, particularly if the instructor does not have a specific clip or area of content in mind.^{3,5} Efficiency in doing a search can be increased by entering relevant key descriptive terms and spending time searching like-topics and user-personalized YouTube pages with similar content.¹¹

Another limitation is the accuracy and credibility of the videos that are posted on the video-sharing web sites.^{3,11,12} As with any resource, instructors should be discriminating regarding the selection of videos to be used in their course.^{3,11,12} It is advisable that the instructor add a disclaimer to the link which indicates the content of the material is from YouTube and does not reflect the opinion of the instructor or the university. In addition, because of the unrestricted platform of YouTube, prior to making a video available to the learners, instructors are strongly encouraged to determine whether the content of the video is accurate and from a credible source, particularly for health-based information.^{3,13} Lastly, computer protection against Spyware and viruses is important to consider, as recent reports have indicated that computer hackers may be using online video sources to upload Spyware and viruses.¹³

Alternatives to YouTube

For instructors who wish to avoid some of the security concerns posed by YouTube use, or who do not have the time or desire to ascertain the credibility of the video source, TeacherTube® may provide a useful alternative.¹³ Though not affiliated with YouTube, TeacherTube, which was launched in March of 2007, is a free online platform for posting and viewing educator-made instructional videos. Instructors can use TeacherTube to access more appropriate content that does not involve searching through amateur videos. With YouTube, there are no categories for professional or amateur video, and instructors must use their own discrimination regarding what is appropriate for their classes. In contrast, with TeacherTube, videos that have been designed for classroom use are posted on the site, and in addition to student instruction, school administrators can use the videos for professional development and teacher mentoring.^{14,15}

YouTube also presents a few other instructional challenges, particularly from a technology standpoint. Since YouTube uses Flash video, instructors will need to ensure that current Adobe Flash Player software has been installed on their computers and those of their students.^{3,5} In addition, downloading and editing a YouTube video can be complex; however, YouTube provides an easy-to-follow tutorial, and external sites such as Firefox provide user guides on how to perform these tasks.^{3,5} Lastly, links to videos in YouTube should be checked regularly to ensure they are currently active and in working order prior to making those URLs available to students. Inactive or "broken" hyperlinks can be an issue in the rapidly changing online environment. It is recommended that instructors always cross-check any hyperlinks before the course material is presented and made available to students. It is good practice to accomplish this during the course design phase and, once again, verify the link's status just before the material is presented. This ensures that the information shared or presented is "active" and in good working order on the YouTube site. See Appendix 1 for a quick tutorial on viewing YouTube clips.

PILOT STUDY

Methods

As a pilot study to explore the perceptions and use of YouTube among college-level health education faculty, an online survey was conducted by the researchers during the Fall of 2007 using a non-randomized convenience sample of full-time tenure-track faculty and fixed-term health and human performance faculty teaching at a mid-size university in the southeastern U.S. A 22-item survey instrument was developed to collect the study data, based on other instrumentation reported in the relevant literature that has been used to assess online technology usage by college instructors.^{2,4} In addition to usage and perceptions of items on YouTube, demographic items on gender, age, years of teaching, level of courses taught (undergraduate, graduate), number of courses taught per semester, and instructional setting (in-class, online) were included. Face and content validity for the instrument were established through an external review by two researchers with expertise in health education and online instructional technology. Instrument reliability was tested using the test/retest technique, but due to the low number of participants that completed the second survey in the retest (n = 6), reliability could not be determined. The instrument and research methodology were reviewed and approved by the university's institutional review board for the protection of human research participants.

In the Fall Semester of 2007, the survey instrument was posted on a survey data collection website (SurveyMonkey®), and an email was sent to the 59 faculty holding full-time teaching appointments in the university's College of Health and Human Performance, explaining the nature and purpose of the study, requesting their participation, and providing a link to the secure survey website. The faculty had two months to complete the survey, and follow-up email reminders were sent to the study sample at three weeks and six weeks after the initial email invitation was sent out. Anonymity and confidentiality of survey participants were maintained on the survey website through the use of Secure Socket Layer (SSL) encryption of the data and by not collecting any unique personal identifiers in the survey.

The university used in this study is a public, liberal arts, Carnegie I Research Institution, and is one of the first public distance education institutions in the United States. Distance education is one of the principles of the university's strategic plan. In addition, the university encourages continuing education both on campus and via national conferences to enhance instructors' skills in distance education technology. Consequently, many graduate classes and some of the undergraduate courses at the university are provided online, and many faculty have experience with teaching in the online environment.

RESULTS

Sample Demographics

A total of 24 out of the 59 faculty who received the study invitation emails completed the survey, for a 40.7% response rate. Of the total respondents, 54.2% were male, with an age range of 24 to 60 years and a mean age of 38.9 (Table 1).

	<u>N</u>	<u>%</u>
Gender		
Males	11	45.8%
Females	13	54.2%
Age		
21-30	9	37.5%
31-40	3	12.5%
41-50	5	20.8%
51+	4	16.7%
No response	3	12.5%
No. of Years Teaching College Courses		
1-2 years	5	20.8%
3-5 years	5	20.8%
6-10 years	6	25.0%
11-20 years	4	16.7%
21+ years	3	12.5%
No response	1	4.2%
Level of Classes Taught		
Undergraduate only	3	12.5%
Graduate only	8	33.3%
Graduate and undergraduate	13	54.2%
No. of Courses Taught Per Semester		
1 course	4	16.7%
2-3 courses	19	79.2%
4+ courses	1	4.2%
Instructional Setting		
In-class only	15	62.5%
Online only	4	16.7%
In-class and online	5	20.8%

Over half of the study participants had been teaching for 6 years or longer. Nearly all of them (87.5%) were teaching graduate courses, with 54.2% teaching at both the undergraduate and graduate level. The majority of the respondents (62.5%) were teaching in-class courses only.

	N	%
Faculty using YouTube in their courses	10	41.7%
Males	5	45.5%
Females	5	38.5%
Age 21-30	4	44.4%
Age 31-40	2	66.7%
Age 41-50	3	60.0%
Age 51+	1	25.0%
1-2 years of teaching	0	0.0%
3-5 years of teaching	4	80.0%
6-10 years of teaching	5	83.3%
11-20 years of teaching	1	25.0%
21+ years of teaching	0	0.0%
<u>Of those faculty using YouTube:</u>		
Use it in in-class courses	8	80.0%
Use it in online courses	8	80.0%
Use it in undergraduate-level courses only	3	30.0%
Use it in both undergraduate and graduate-level courses	7	70.0%
Use it 1-5 times per semester	8	80.0%
Use it 6+ times per semester	2	20.0%
Use it to provide informational material	7	70.0%
Use it for in-class discussion	9	90.0%
Use it for online discussion/posting board	2	20.0%
Use it for case studies	1	10.0%
Use it for debates	3	30.0%
Find it to be an effective teaching tool	10	100%
Find it to be a more effective teaching tool than other tools used in the classroom	2	20.0%
Faculty not using YouTube in their courses	14	58.3%
Not using it now, but interested in learning how to use it as a resource for their learners	13	92.8%
<u>Reasons for not using it:</u>		
Lack of familiarity with YouTube	9	64.3%
Use other video resources instead of YouTube	5	35.7%

Faculty Usage of YouTube

Nearly half of the respondents (41.7%) reported using YouTube in their courses (Table 2). Usage was relatively consistent for males vs. females and by age group, although faculty who were over 50 years old, those who were just beginning their teaching careers, and those who had been teaching for more than 10 years had lower percentages of YouTube users.

Of the faculty who reported using YouTube in their classes, most of them indicated they used it in both in-class courses and online courses, and in both undergraduate and graduate courses, at a rate of 1 to 5 times per semester. The most common uses of YouTube in their courses were for in-class discussions and debates, and to provide informational material.

All of the YouTube users indicated they felt this online resource was an effective teaching tool, although few considered it to be more effective than other tools available to them. Of the total respondent group, almost half of them reported that they use other types of online teaching technology, either in addition to or instead of YouTube.

Although 58.3% of the faculty reported never using YouTube as an instructional tool, nearly all of those non-users (92.8%) were interested in learning how to apply it as a learning resource in their classes. The most common reasons reported by the respondents for non-use were lack of familiarity with YouTube and use of other video resources instead. One respondent commented: "I just haven't incorporated it yet. I have other tools but I should see what YouTube could offer."

Other Faculty Perceptions Regarding Use of YouTube in the Classroom

In their open-ended comments, many of the survey respondents shared their perceptions about using YouTube in their courses. Positive perceptions about its use as an instructional tool included the following:

- A wealth of video materials are available.
- It provides another means for serving information to the students via a new technology that they might find fresh and interesting, and to which many of them can relate.
- It offers real-life examples and visual demonstrations of the topics and concepts covered in class.
- The quick, short videos it can provide are excellent for use as lecture launchers to promote discussion and critical thinking.

One of the faculty commented that YouTube was "current, timely, free, diverse - did I mention FREE?" Again, the fact that this resource can be used free of charge may be an important consideration for many programs that have limited budgets.

Some of the negative aspects of using YouTube that were expressed by respondents included the following:

- A moderate amount of time can be involved in making or finding appropriate videos.
- The credibility and validity of some of the YouTube videos may be difficult to ascertain.
- Instructors and students may face problems in connecting to the YouTube web site.

One study participant warned: "It can be a messy abyss of inappropriate and appropriate materials. Like anything, if content is carefully screened, it can be valuable; otherwise, it can be a waste of class time. It depends on wise use."

DISCUSSIONS AND CONCLUSIONS

Because of the small size of the sample used in this pilot study, interpretation of the results is limited and cannot be generalized to the greater population of college health education faculty. However, it does provide some initial information on usage patterns and perceptions regarding the use of YouTube in health education classes – in both in-class and online settings. It should also be noted that distance education is one of the top strategic initiatives of this particular university, so the results may not be generalizable beyond the current sample.

This study showed that overall, faculty who used YouTube in their courses were satisfied with this new technology and found it to be an effective teaching and learning tool, with caveats regarding the need to carefully screen videos for appropriateness and validity, and with recognition of the challenges related to the time involved in creating or finding the right videos for particular course applications. In addition, the study results suggest that faculty who have not yet used YouTube as an instructional tool – particularly those new to teaching and those who are older veteran teachers – appear to be interested in learning more about its potential in the classroom. As one non-user commented, "I need to plan for incorporating this technology into my courses in the future."

IMPLICATIONS FOR FUTURE RESEARCH

While more research is necessary, this pilot study suggests that YouTube may be a viable, innovative teaching resource to supplement course content. This initial study could serve as the basis for future research in which the instructional use of YouTube could be examined in a larger population of college health education faculty at multiple institutions in the U.S. and internationally.

Future research might explore the utility of YouTube as a learner tool to create and upload technology-based presentations in a variety of health education settings. It may be of interest to further examine differences related to its use in undergraduate vs. graduate courses and in online vs. in-class settings (and courses which combine the two settings). Research on students' use

and perception of YouTube in their classes would also be of value in determining the appropriateness and effectiveness of this online resource from their perspectives. In addition, as mentioned earlier, distance education is one of the principles of the university's strategic plan, with the university encouraging continuing education both on campus and via national conferences to enhance instructors' skills in distance education technology. With many of the graduate classes and some of the undergraduate courses at the university provided online, it would be interesting to explore how these factors impact instructor's experience with YouTube in support of the goals and mission of the University.

As demonstrated by the growing popularity of video-sharing sites, YouTube is utilized among the tech-savvy, Web 2.0 generation. The application of YouTube as a supplemental teaching tool may promote synthesis of course content and help sustain student engagement. Regardless of the Internet-based video resource utilized, educators experienced with using these resources caution that it should not be used as a student "babysitter," with the instructor assuming a passive role, but instead faculty should take advantage of its interactive nature in the delivery of the video as well as in post-viewing and follow-up activities.⁷ The potential power and utility of this new technology in both in-class and online classrooms is promising when managed by an involved instructor who is sufficiently skilled in its application. These pilot study findings have implications regarding the need to provide continuing education to faculty on the use of YouTube in in-class and online courses, and perhaps to student users as well.

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Appendix 1

Quick Tutorial on Viewing Video Clips on YouTube

The steps required to view video clips on YouTube are fairly simple. The following provides a quick tutorial on how to do it:

1. Go to: www.youtube.com
2. Under the Search field at the top of the screen, enter a key word, title, or terms to search.
3. Click the Search button.
4. A listing of the titles of available YouTube videos that meet your search criteria, along with a screen shot of each video, will be generated.
5. Select the video that appears to be most appropriate for your chosen subject by clicking on the video clip screen shot. The selected video will then be played.
6. At the bottom of the video screen, you have options to pause, rewind, fast forward, enlarge the video, and adjust the volume. A timer displaying the length of the video and the running time is also displayed.
7. After the video clip ends, you will have the option to forward the clip or watch it again. Titles and screen shots of other video clips with similar content will also be automatically displayed.
8. You can save the video clip on the YouTube website (under "Favorite" or "Add to Playlist"), or cut-and-paste the video clip's URL from the navigation bar and use it to create a link in electronic course documents for quick classroom viewing.
9. You can access additional information on video viewing and other YouTube functions by clicking on the "Help" link, which takes you to the YouTube's "Help Center."