

2012

EMERGING CHALLENGES OF ONLINE VIDEO FOR LEARNING

Nitza Geri

The Open University of Israel, nitzage@openu.ac.il

Follow this and additional works at: <http://aisel.aisnet.org/mcis2012>

Recommended Citation

Geri, Nitza, "EMERGING CHALLENGES OF ONLINE VIDEO FOR LEARNING" (2012). *MCIS 2012 Proceedings*. 31.
<http://aisel.aisnet.org/mcis2012/31>

This material is brought to you by the Mediterranean Conference on Information Systems (MCIS) at AIS Electronic Library (AISEL). It has been accepted for inclusion in MCIS 2012 Proceedings by an authorized administrator of AIS Electronic Library (AISEL). For more information, please contact elibrary@aisnet.org.

EMERGING CHALLENGES OF ONLINE VIDEO FOR LEARNING

Geri, Nitza, The Open University of Israel, University Road 1, 43107 Raanana, Israel,
nitzage@openu.ac.il

Abstract

The relatively low cost of producing and consuming online videos, and the ubiquity of the internet, enable their application for various sorts of instruction. As the trend of using web-based video for instruction strengthens, new challenges emerge, and it is important to examine the implications of online video availability on learner retention and achievement. Despite the flexibility online video lectures offer, it seems that people prefer face-to-face instruction. From an attention economy perspective, it may be harder to concentrate while watching online videos. Furthermore, in educational environments, students may procrastinate watching the videos until the end of the semester. This procrastination leads to overload, and makes students more susceptible to failure and even dropping out from their studies.

The purpose of this research-in-progress is to examine the implications of online video use in distance and blended learning on student retention and achievement. Its interdisciplinary theoretical basis draws on research in information systems, psychology, and education. Data analytics is used as the main methodology for analyzing student grades and their retention records. The study takes place at the Open University of Israel, where video lectures are being gradually introduced to courses since 2009. Two preliminary exploratory studies indicate that there may be unforeseen opportunities and challenges related to the availability of online video. The research conclusions will contribute insights for effective integration of online video in distance learning processes, or as a supplement to face-to-face instruction, as well as professional training, and lifelong learning.

Keywords: Online video lectures, Attention economy, Information overload, Procrastination, effectiveness of instructional technologies.

1 INTRODUCTION

Online videos are increasingly being used in distance learning, due to their affordability and availability (Copley, 2007). The concept of distance learning has been around at least since the late 19th century, and was based on correspondence via mail (Moore & Kearsley, 2011). With the extended availability of more communication channels and technologies, such as radio and television, they have also been utilized for distance learning. The internet provided distance learning with even more powerful communication channels, and increased its potential. Online learning has grown considerably in recent years, and it is used in many academic institutions, at least partially, instead of face-to-face instruction (Hiltz & Turoff, 2005). Nevertheless, not enough thought has been given to the implications of this fundamental change (Hirschheim, 2005), in particular, on student retention, which is a primary challenge of distance learning (Simpson, 2003; Woodley, 2004).

Distance learning enables flexibility of time, place, and pace of learning. Contemporary technologies, particularly instant worldwide connectivity through the internet, provide organizations and individuals with convenient opportunities for deploying distance learning. However, studying in a distance-learning environment is considered harder compared to face-to-face frameworks. Much of the difficulty is attributed to the lack of social interaction (Eastmond, 1995; Salmon, 2004).

Online video offers students a rich learning experience similar to traditional in-class learning. Students can hear the voice, and see the face and gestures of the instructor. Usually, there are other visual elements, such as presentations. Sometimes students may see some of their classmates, and in synchronous sessions they may interact with the instructor and their peers in real time. Therefore, online video lectures have the potential to increase both student retention and their achievements in distance as well as in blended learning environments. However, students seem reluctant to adopt video-based online learning. Prior research indicates that most students prefer traditional in-class studying, even when they are offered a rich e-learning environment that includes video lectures, exercises and personal online tutoring (Guri-Rosenblit, 2005, 2009). Hence, it is important to study the adoption of online video-based distance learning, and the impact of online lecture availability on student retention and achievement.

Online video may help students who cannot attend class (Wieling & Hofman, 2010), and there is a growing phenomenon of both traditional and distance learning academic institutes that provide their students with access to recorded lectures via the internet. Furthermore, interactivity, which was rarely offered to students in the past, may increase the effectiveness of these videos. A study by Zhang, Zhou, Briggs, and Nunamaker (2006) compared three e-learning environments and one traditional classroom setting, and their findings indicated that the effectiveness of video learning was contingent upon providing the students with interactive video sessions. The need for some sort of active engagement of students in learning is stressed by Cherrett, Wills, Price, Maynard, and Dror (2009), who suggested that passive observation of video lectures, is not cognitively captivating and challenging, making it less effective for learning. Learning activities, which are intended to challenge the viewers and make them cognitively effective, may not necessarily involve the instructor (Dror, Schmidt, & O'connor, 2011), and may include taking notes, answering online quizzes, or preparing assignments.

Until recently, discussion boards were considered as one of the primary tools of e-learning (Harman & Koohang, 2005), there was not much use of online video for learning (Nachmias & Ram, 2009), and few studies dealt with it. Whatley and Ahmad (2007) summarized various ways of using video for supporting teaching and learning, and described their own use of online video for recording summary lectures to aid students in their revision of face-to-face lectures. Brecht and Ogilby (2008) investigated video lectures that were used to support a traditional classroom course, and their results indicated that these videos might have helped the students pass the course.

Online videos can also have a negative impact on learning. Students may tend to skip more face-to-face sessions because they rely on the videos. From an attention economy perspective (Davenport & Beck, 2001), it may be harder to concentrate while watching online videos. It might also be harder to

find the time to watch them and lead students to procrastinate and let the unwatched videos accumulate until the end of the semester (Ariely & Wertenbroch, 2002; Gafni & Geri, 2010; Van Eerde, 2003). This leads to overload, and makes students more susceptible to failure and even dropping out from their studies.

The theoretical basis of this interdisciplinary research-in-progress includes information systems, psychology, and education. The purpose of this study is to examine the implications of online video use in distance and blended learning on student retention and achievement. The study takes place at the Open University of Israel, where video lectures are being gradually introduced to courses since 2009. The next section briefly describes two preliminary exploratory studies that indicated that there may be unforeseen opportunities and challenges related to the availability of online video. The third section describes the methodology, which is based on data analytics, and outlines the research planned stages. The fourth section concludes the paper with theoretical and practical anticipated implications.

2 PRELIMINARY FINDINGS: TWO EXPLORATORY STUDIES

Two preliminary exploratory studies investigated the adoption rate of online video-based distance learning, and the impact of the availability of online video lectures on student retention and on their achievements.

The first study (Geri, 2011) examined the adoption of interactive online video-based distance learning in two introductory courses at the Open University of Israel. The adoption was examined during the first six semesters in which the videos were offered. The study found that only 7% of the 19,000 student decisions were to enroll to the interactive video-based study group, although the online video lectures were perceived as excellent and the students were aware of their high quality. These results demonstrated that students preferred face-to-face learning. Further examination of the video lectures' impact on the achievements and perseverance of overseas students did not reveal statistically significant improvement in their performance. Geri (2011) suggested that these findings might be attributed to the introductory nature of the examined courses, and they might not be applicable to more advanced courses, or to more experienced students. Therefore, the second study investigated overseas experienced students.

The second study (Geri, 2012) compared the retention and achievements of 64 overseas students enrolled to a financial theory compulsory course, which is considered difficult. Students tend to study this course only after successfully completing other courses. The results indicated that before the introduction of online video, most of the students who failed the course dropped out from the program immediately after failing the course. In contrast, after the introduction of video to the course, nearly all the students who failed continued their studies. These findings suggested that online video lectures might increase experienced students' retention, even though their achievements were not significantly affected by the availability of the video lectures.

Another study, which was conducted at the Open University by Steimberg et al. (2010), examined general attitudes of students toward video lectures in ten courses, and indicated that 93.6% of the students thought that viewing the online videos might improve their understanding of the learning materials. Steimberg et al. (2010) measured perceptions, whereas the abovementioned exploratory studies (Geri, 2011, 2012), as well as this ongoing research, measure actual student grades and their retention records.

3 METHODOLOGY AND THE RESEARCH PLAN

The primary methodology of this study is data analytics, which is a growing trend in research (Hershkovitz & Nachmias, 2009; Ravid, Bar-Ilan, Baruchson-Arbib, & Rafaeli, 2007) as well as in business environments (LaValle, Lesser, Shockley, Hopkins, & Kruschwitz, 2011). The study is mainly quantitative, but it also includes some qualitative observations, based on interactions with instructors involved with web-based video lectures.

This study takes place at the Open University of Israel, which is a distance-learning institute with about 42,000 undergraduate students and 3,700 graduate students (Open University President's report, 2011). Every year, the university recruits 11,000-12,000 new students. However, many of them drop out early in their studies. The Open University offers its students the choice of a full distance-learning model or a blended learning model. Students who choose the blended model combine face-to-face meetings with online support through course websites. These supplement traditional means of distance education, such as books and study guides. Since 2009, video lectures were gradually introduced to courses.

The purpose of this ongoing study is to investigate the implications of online video use in distance and blended learning environments on student retention and achievement.

The research includes the following phases:

- Analysis of adoption patterns of online video-based learning, based on course enrollment data, and attributes such as, number of courses studied, age, gender, prior experience with video-based learning.
- Analysis of the influence of available online video lectures on student retention and their achievements, based on grades, enrollments, ability to participate in face-to-face lessons, number of courses studied, prior experience with video-based learning, as well as other demographics.
- Comparative analysis of different models of online video lectures, such as interactive online sessions, recordings of face-to-face class meetings, and asynchronous online lectures. Their influence on student retention and achievement will be examined.
- Additional analyses, based on the findings of the previous phases, and integration of the results.

4 CONCLUSION

The relatively low cost of producing and consuming online videos, and the ubiquity of the internet, enable their application for various sorts of instruction. The purpose of this research-in-progress is to examine the implications of online video use in distance and blended learning on student retention and achievement.

The main theoretical contribution of this interdisciplinary study is the introduction of information availability as a factor that may have negative implications, beyond those recognized as the well-known phenomenon of information overload. Specifically, the research examines how information availability, when combined with procrastination may result in undesirable consequences.

Procrastination is a common phenomenon in academic contexts, where students are required to meet deadlines for assignment completion in an environment full of events and activities, which compete for the students' time and attention. Student syndrome refers to the phenomenon that many students begin to engage themselves in a task just before a deadline (Ariely & Wertenbroch, 2002). Numerous studies indicated that procrastination affects 46% to 95% of undergraduate students (Janssen & Carton, 1999; Kachgal, Hansen, & Nutter, 2001; Özer, Demir, & Ferrari, 2009). The availability of online video lectures that may be watched anytime and anyplace that suits the students may cause some students to procrastinate this task until the end of the semester. By then, the students may not have enough time to study all the necessary stuff, and as a result, they may fail the course.

As the trend of using web-based video for instruction strengthens, the findings of the suggested research will contribute to effective integration of online video in learning processes. Furthermore, the study will identify negative implications of certain aspects of online video lectures, and suggest ways to avoid them or reduce their undesirable effects.

The implications of this research-in-progress will provide useful guidelines for planning, implementing, and using a wide variety of online educational video applications, including: online distance-learning, online supplements to face-to-face learning, online professional training, and affordable lifelong learning opportunities.

References

- Ariely, D., and Wertenbroch, K. (2002). Procrastination, deadlines, and performance: Self-control by precommitment. *Psychological Science*, 13(3), 219-224.
- Brecht, H. D, and Ogilby, S. M. (2008). Enabling a comprehensive teaching strategy: Video lectures. *Journal of Information Technology Education*, 7, 71-86. Retrieved from <http://jite.org/documents/Vol7/JITEV7IIP071-086Brecht371.pdf>
- Cherrett, T., Wills, G., Price, J., Maynard, S., and Dror, I. E. (2009). Making training more cognitively effective: Making videos interactive. *British Journal of Educational Technology*, 40(6), 1124–1134. doi: 10.1111/j.1467-8535.2009.00985.x
- Copley, J. (2007). Audio and video podcasts of lectures for campus-based students: Production and evaluation of student use. *Innovations in Education and Teaching International*, 44(4), 387–399. doi:10.1080/14703290701602805.
- Davenport, T. H., and Beck, J. C. (2001). *The attention economy: Understanding the new currency of business*. Harvard Business School Press: Boston, MA.
- Dror, I., Schmidt, P., and O'connor, L. (2011). A cognitive perspective on technology enhanced learning in medical training: Great opportunities, pitfalls and challenges. *Medical Teacher*, 33(4), 291-296. doi:10.3109/0142159X.2011.550970
- Eastmond, D. V. (1995). *Alone but together: Adult distance study through computer conferencing*. Hampton Press: Cresskill, NJ.
- Gafni, R., and Geri, N. (2010). Time management: Procrastination tendency in individual and collaborative tasks. *Interdisciplinary Journal of Information, Knowledge, and Management*, 5, 115-125. Retrieved from <http://www.ijikm.org/Volume5/IJIKMv5p115-125Gafni448.pdf>
- Geri, N. (2011). If we build it, will they come? Adoption of online video-based distance learning. *Interdisciplinary Journal of E-Learning and Learning Objects*, 7, 225-234. Retrieved from <http://www.ijello.org/Volume7/IJELLOv7p225-234Geri764.pdf>
- Geri, N. (2012). The resonance factor: Probing the impact of video on student retention in distance learning. *Interdisciplinary Journal of E-Learning and Learning Objects*, 8, 1-13. Retrieved from <http://www.ijello.org/Volume8/IJELLOv8p001-013Geri0794.pdf>
- Guri-Rosenblit, S. (2005). Eight paradoxes in the implementation process of e-learning in higher education. *Higher Education Policy*, 18(1), 5-29.
- Guri-Rosenblit, S. (2009). Distance education in the digital age: Common misconceptions and challenging tasks, *Journal of Distance Education*, 23(2). Retrieved from <http://www.jofde.ca/index.php/jde/article/view/627/886>
- Harman, K., and Koohang, A. (2005). Discussion board: A learning object. *Interdisciplinary Journal of Knowledge and Learning Objects*, 1, 67-77. Retrieved from <http://ijello.org/Volume1/v1p067-077Harman.pdf>
- Hershkovitz, A. and Nachmias, R. (2009). Learning about online learning processes and students' motivation through Web usage mining. *Interdisciplinary Journal of E-Learning and Learning Objects*, 5, 197-214. Retrieved from <http://ijklo.org/Volume5/IJELLOv5p197-214Hershkovitz670.pdf>
- Hiltz, S. R., and Turoff, M. (2005). Education goes digital: The evolution of online learning and the revolution in higher education. *Communications of the ACM*, 48(10), 59-64.
- Hirschheim, R. (2005). The internet-based education bandwagon: Look before you leap. *Communications of the ACM*, 48(7), 97-101.
- Janssen, T., and Carton, J. S. (1999). The effects of locus of control and task difficulty on procrastination. *Journal of Genetic Psychology* 160(4), 436-442.
- Kachgal, M., Hansen, L. S., and Nutter, K. J.(2001). Academic procrastination prevention/intervention strategies and recommendations. *Journal of Developmental Education* 25 (Fall), 14-24.
- LaValle, S., Lesser, E., Shockley, R., Hopkins, M. S., and Kruschwitz, N. (2011) Big data, analytics and the path from insights to value. *MIT Sloan Management Review* 52(2), 21-32.
- Moore, M., and Kearsley, G. (2011). *Distance education: A systems view of online learning*, 3rd edition. Wadsworth Publishing: Belmont, CA.
- Nachmias, R., and Ram, J. (2009). Research insights from a decade of campus-wide implementation of web-supported academic instruction at Tel Aviv University. *The International Review of*

- Research in Open and Distance Learning, 10(2). Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/595/1214>
- Open University President's report (2011). The President's report 2010-2011. The Open University of Israel. Retrieved from <http://www-e.openu.ac.il/presidents-office/report2011E/report2011E.html>
- Özer, B. U., Demir, A., and Ferrari, J. R. (2009). Exploring academic procrastination among Turkish students: Possible gender differences in prevalence and reasons. *The Journal of Social Psychology*, 149(2), 241–257.
- Ravid, G., Bar-Ilan, J., Baruchson-Arbib, S., and Rafaeli S. (2007). Popularity and findability through log analysis of search terms and queries: The case of a multilingual public service website. *Journal of Information Science*, 33(5), 567–583.
- Salmon, G. (2004). *E-moderating: The key to teaching and learning online* (2nd ed.). RoutledgeFalmer, Taylor and Francis Group: London.
- Simpson, O. (2003). *Student retention in online, open and distance learning*, Kogan Page: London and Sterling, VA.
- Steimberg, Y., Guterman, E., Mermelstein, B., Brickner, R., Alberton, Y., and Sagi, R. (2010). Students' perspective on teaching and learning with video technology at the Open University of Israel. In Y. Eshet-Alkalai, A. Caspi, S. Eden, N. Geri, and Y. Yair (Eds.), *Learning in the Technological Era: Proceedings of the Chais Conference on Instructional Technologies Research* (pp. 186H-194H). The Open University of Israel: Raanana, Israel. [in Hebrew] Retrieved from http://telem-pub.openu.ac.il/users/chais/2010/after_noon/4_1.pdf
- Van Eerde, W. (2003). Procrastination at work and time management training. *Journal of Psychology*, 137, 421-434.
- Whatley, J., and Ahmad, A. (2007). Using video to record summary lectures to aid students' revision. *Interdisciplinary Journal of Knowledge and Learning Objects*, 3, 185-196. Retrieved from <http://ijklo.org/Volume3/IJKLOv3p185-196Whatley367.pdf>
- Wieling, M. B., and Hofman, W. H. A. (2010). The impact of online video lecture recordings and automated feedback on student performance. *Computers & Education*, 54 (4), 992-998.
- Woodley, A. (2004). Conceptualizing student dropout in part-time distance education: Pathologizing the normal?. *Open Learning*, 19(1), 47-63.
- Zhang, D., Zhou, L., Briggs, R. O., and Nunamaker, J. F. Jr. (2006). Instructional video in e-learning: Assessing the impact of interactive video on learning effectiveness. *Information & Management*, 43(1), 15–27.