Designing Digital Video to Support Learner Outcomes: A Study in an Online Learning Resource for Healthcare Professionals and Students

Hugh Kellam, University of Ottawa, Canada
Colla J. MacDonald, University of Ottawa, Canada
Douglas Archibald, University of Ottawa, Canada
Derek Puddester, University of Ottawa, Canada

ABSTRACT
This pragmatic, mixed methods study explored how the design and implementation of digital video resources in an online educational environment affected learning outcomes. Forty-five health professionals and students evaluated the digital videos incorporated into ePhysicianHealth.com, the world’s first comprehensive online resource on health and wellness for physicians and medical students. Specifically the participants were to evaluate how digital videos impacted their learning experiences. Quantitative and qualitative data were collected from two sources: surveys and interviews. The findings of the study clearly indicated that the majority of the participants found the digital videos a valuable addition to ePhysicianHealth.com. There were numerous practical conclusions from this study that provided recommendations for the future design and delivery of digital videos in pedagogical settings. They included: the use of personal testimonials and stories; the use of problem-solving scenarios involving modeling and demonstrations; and tailoring modeling scenarios to the specific needs of learners.

Keywords: Continuing Medical Education, Digital Video, Learner Engagement, Learning Outcomes, Online Learning, Physician Learning, Self-Directed Learning, Video Design, Video Genres

INTRODUCTION
The increased demand for eLearning courses has led educators to examine more interactive and creative ways to motivate learners and make the online experience more realistic and effective (Monahan, McArdle, & Bertolotto, 2008). Using a variety of pedagogical approaches is an important element to consider when designing online resources (Watts, 2007). Kirschner (2005) reminded us that despite the availability of a plethora of multimedia tools, many distance education courses have “student activities that are limited to reading from the screen, filling out boxes and, at best, chatting with peer students

DOI: 10.4018/IJOPCD.2012070104
about the content” (p. 547). Poorly designed
text-based learning can be monotonous, which
can result in poor learner comprehension of the
material (Zhang, Zhao, Zhou, & Nunamaker,
2004). Learner engagement when learning
online can be dramatically increased when
multimedia resources, such as digital video,
are used to present course material (Monahan,
McArdle, & Bertolotto, 2008). Digital videos
have been proven to create a more authentic
learning environment than text-based online
resources (Kumar, 2010; Bliss & Reynolds,
2004). Moreover, multimedia learning resources
motivate online learners and engage them
emotionally (Kumar, 2010; Hung, Keppell,
& Jong, 2004).

A wealth of research has been conducted
on the design, delivery, and implementation
of online learning (Gustafson & Branch, 2002;
MacDonald & Thompson, 2005; Ryder, 2007;
Thompson & MacDonald, 2005). However,
there have been few empirical evaluations of
the use of video for learning and the literature
has even fewer publications that provide prac-
tical guidelines for designing digital videos to
achieve desired learning outcomes (Cheng &
Chau, 2009; Schwartz & Hartmann, 2007). In
online classrooms “forms of learning that stress
the active engagement of learners in rich learn-
ing tasks and the acquisition of skills are rare”
(Kirschner, 2005, p. 548). With more and more
web-based courses incorporating videos, the
need for research in this area is required to un-
derstand how to design, utilize, and incorporate
video most effectively as a pedagogical tool.

This pragmatic, mixed methods study
explored how the design and implementation
of digital video resources in an online educa-
tional environment affected learning outcomes.
Forty-five health professionals and students
evaluated the digital videos incorporated into
ePhysicianHealth.com (Appendix B, Tables 7
through 11), the world’s first comprehensive
online resource on health and wellness for
physicians and physicians-in-training. ePhys-
icianHealth.com includes eight interactive,
self-paced modules on mental and physical
health issues—such as substance use disor-
ders; weight, nutrition and fitness; depression,
burnout, and suicide; anxiety; resilience;
relationship with self; boundaries and primary
care. In addition there are five modules on
disruptive workplace behavior for physician
leaders, medical students, healthcare teams,
residents, and practicing physicians. Content is
provided through video, interactive activities,
self-assessments, animations, graphics, and
text. The content of the digital videos in ePhys-
cianHealth.com includes specific scenarios,
testimonials, and presentations based on the
real-world personal and professional experi-
exiences of health professionals. Three types of
digital video genre were examined in this study:
modeling/demonstrations (7 in total, outlined
in Table 4 of the Outcomes section), personal
stories/commentaries (4 in total, outlined in
Table 5 of the Outcomes section, and content
expert narratives (1 introduction in each of the
13 modules). This study examined whether the
digital video genres led to identified learning
outcomes in the literature, and how effective
they were at producing useful and applicable
learning outcomes for busy healthcare profes-
sionals in an online learning resource. Practical
and theoretical suggestions are made for future
implementation and research.

BACKGROUND

Online resources are a valuable tool for all
forms of adult learning and are becoming more
important and relevant in the health professions.
This is particularly true of physicians. A recent
survey conducted by Manhattan Research found
that 25% of physicians utilize the Internet dur-
ing patient consultations (Egan, 2007). Further,
physicians’ use of Internet resources between
patient consultations had increased by 11% from
the previous year; their use of online confer-
ences had increased 13% between 2005 and
2007, and their consultation of online journals
also increased by 25% during the same period
(Egan). Holzer and Kokemueller (2007) pro-
posed that these statistics indicate “the tipping
point and suggest that physicians are prepared
Related Content

Student Perceptions on the Utilization of Formative Feedback in the Online Environment
[www.igi-global.com/article/student-perceptions-utilization-formative-feedback/77900?camid=4v1a](www.igi-global.com/article/student-perceptions-utilization-formative-feedback/77900?camid=4v1a)

Model Driven Engineering Applied in E-Learning Development Process: Advanced Comparative Study with ROC Multi-Criteria Analysis
[www.igi-global.com/article/model-driven-engineering-applied-in-e-learning-development-process/164971?camid=4v1a](www.igi-global.com/article/model-driven-engineering-applied-in-e-learning-development-process/164971?camid=4v1a)
The Impact upon Comprehension and Reading Tasks of Preservice Elementary Teachers Using a Web 2.0 Reading Extension
www.igi-global.com/article/the-impact-upon-comprehension-and-reading-tasks-of-preservice-elementary-teachers-using-a-web-20-reading-extension/129964?camid=4v1a

Instructional Technology Design of Smart Malay-Mandarin Dictionary (SMMD) to Support Vocabulary Acquisition in Teaching Chinese as a Foreign Language
www.igi-global.com/chapter/instructional-technology-design-smart-malay/61274?camid=4v1a