Interactive Web Page to Teach How to Create an e-Portfolio

Monika Jost
University of Hawai‘i, Manoa
Department of Educational Technology
Honolulu, HI 96720, USA
mjost@hawaii.edu

Abstract: Learning a new technical computer program in a traditional face-to-face classroom lecture might be challenging because the students depend solely on their own note taking and handouts. In contrast to this, online screen captured video instructions with narrated voice over are permanently available with a functioning Internet connection. Students can revisit the clips and can make use of the pause button at their own discretion to comprehend the material. The purpose of this instructional design project was to develop and evaluate a web-based interactive module on how to create e-portfolios for art students at University of Hawai‘i Maui College. Although the module was aimed for college students, five college instructors, with intermediate computer knowledge, tested the module as appropriate experts for evaluation purposes. The data collected from the pre- and post-test showed that the screen captured video tutorials with voice over were highly effective in teaching technical instructions. Additionally, according to the attitudinal survey the participants responded well to the online learning module.

Introduction

In these modern days of technology a digital portfolio is usually required of college art students exhibiting their development of their work or looking for a job presenting past experience and work knowledge. In today’s competitive world it is beneficial to have a digital identity and being able to provide this with a hyperlink displays professionalism. College students can do this by designing an e-portfolio, which is an electronic collection of proof of work that is put together and maintained by an individual. According to Vanecy (2009, p.28) “e-portfolios have provided a new, continuing mechanism both for documenting specific practices and student accomplishments and the effects that these activities have on learning outcomes.” Previously students were required to create a physical portfolio which overtime could become big and heavy and require a lot of storage space.
Today’s college students grew up with technologies like computers, video games, and the Internet as well as cell phones. Prensky (2005) created a term especially for them, “Digital Natives”, and these Natives master the exposure with the modern day technology. Digital Natives learn differently and to be successful as educators it is important to pay attention to this development and apply new teaching tools in the classroom. E-learning in the educational system continues to grow daily. More and more college classes in the 21st century are offered online giving students the opportunity to choose between taking a class in a virtual classroom or in a traditional face-to-face classroom. Online tutorials have the advantage of implementing web-based instruction using asynchronous tools where the learner decides when and where the lecture takes place. For example the learning can take place in the middle of the night after watching a favorite show or early in the morning before going to work. The lectures can be completed on the home computer, at the school computer lab or at Starbucks with a laptop.

Because people have busy lifestyles with jobs, family responsibility and social commitments, offering a video tutorial online on how to create an e-portfolio opens the door to learning for more people. Instructional video education enriches e-learning as a powerful tool (Zhang, Zhou, Briggs, & Nunamaker, Jr, 2006) and leads to a higher student satisfaction. Students are able to interact with the videos on a self-directed demand, access the video tutorial multiple times and utilize the pause button at their convenience.

Teachers can apply dynamic multimedia education to teach the student in a more in-depth way than they could do with a hard copy of a textbook (Huang, 2005). Winslow (2009) created a study and found that students earn better through screen-captured videos (SCVs) with voice over. Students responded positively to different short narrated lecture segments for review and retained the information better. Streaming video makes the audiovisual content accessible anytime and anywhere and only a robust Internet connection is required (Brown, 2004). Well-designed and well-used video technology provides information for auditory and visual senses and studies show that it enhances student retention.

Methods

Purpose of the instructional design project
The purpose of this Instructional Design project was to develop a web-based interactive module for art students on how to create e-portfolios. The evaluation of the effectiveness of the video clips regarding building an e-portfolio was implemented with five college instructors from the University of Hawai‘i, Maui College, who possessed intermediate computer skills. Those instructors were appropriate experts to test the module.
Description of the instructional design project
The entire web site http://monikajost1.weebly.com/ was created using Weebly, a free online Web site creator. A simple and effective design was chosen to keep the focus on the subject (see Figure 1). Navigation through the web site needed to be easy to follow because the whole module was solely online. The only contact between the researcher and the learners was an email invitation sent from the researcher to ask for participation in this research project. The module was created using Gagne’s nine instructional events, which begins with gaining attention from the learner (Gagne, Wager, Golas, & Keller, 2005). As an attention-getter a computer animation was integrated on the homepage with information regarding the module. The module was split up in seven chapters which each included two objectives, a short, two minute video clip and a mini quiz of two questions providing the immediate answers. The chapter incorporated what to include in an e-portfolio; how to create a Weebly account; how to use the simple editing tools in Weebly; how to choose a design in Weebly; how to add content to the web site in Weebly; how to add a web site in Weebly; and how to add a photo gallery in Weebly. The video clips created in Camtasia were screen capture recordings with voice over explaining how to build an e-portfolio. The interactive mini quizzes with immediate feedback served the purpose of reinforcing the material and validating that the material was learned.

Figure 1. Screen shot of website.

Procedures
The data collected for this research included two tests and a attitudinal survey. First the participants filled out a pre-test with 16 multiple choice questions to record their previous knowledge regarding e-portfolios. In order to monitor each participant’s development anonymously, participants were asked to create a personal identification code and to
apply the same code in the post-test. Then the participants completed seven chapters of video instructions, which each included a mini quizzes. Immediately at the end of the seven chapters participants completed a post-test with 16 multiple choice questions which tested their learned knowledge regarding the subject. These two tests measured the functionality and effectiveness of the web-based module. Following the post-test an attitudinal survey gathered data from the participants regarding their personal attitude toward the web-based module. The survey contained 23 questions divided into four sections. The first section contained five background questions regarding the participants computer and Internet knowledge, followed by three sections composed of 15 Likert-scale questions regarding technology and format, design and value of the website. The last section provided participants the ability to share their input in three open-end questions. All tests and surveys were available only online and were guaranteed to be confidential.

Results

Out of the eight invited participants five successfully finished the online module. The consent form was filled out from all eight participants, but three of them did not participate further in the module. Only five participants completed the pre- and post-test and the survey. One of the reasons that some participants did not finish the asynchronous built online learning module, might have been a time issue. The whole lecture requested one hour to be completed which might have been too long. However, one of the participants finished the complete module in 30 minutes. Because of the anonymity of the module no actual data at hand explained why some participants did not finish the module.

The data collected from the pre and post-test regarding the different objectives demonstrated the effectiveness of the module. In Figure 2 the pink line, representing the post-test, indicates that the learners improved their score in 15 of the 16 objectives. The average score doubled from 46% in the pre-test (blue line) to 90% in the post-test. A 44% increase between the two tests manifested, that the participants gained knowledge regarding how to create e-portfolios significantly.
Objective 5, naming the four different tabs in Weebly, demonstrated the highest improvement from 0% to 100%. In the pre-test none of the participants could identify the different tabs, but in the post-test all of them were able to label the tabs.

Objective 13 “viewing page in navigation window” showed a 100% score in the pre-test, which was 20% higher than in the post-test. There is no answer to this irregularity because in both tests the questions were stated similar.

The low score 40%, in the post-test for objective 9 “adding a picture” might be due to the confusing options in the answer. The question was “In the Elements tab, which of the following folder do you select to add a picture?” and the four choices were a) Images b) More c) Basic d) Multimedia. The right answer was c) Basic. Adding a picture correlates to the word image which was not one of the four elements tab. However, despite the low score the module still showed some learning did occur for objective 9 as the score went from 0% for the pretest to 40% in the post-test.

Looking at the test numbers in Figure 3 every individual participant improved their score significantly. The pre-test (blue line) showed the learners results before watching the video instructions and the score was between 37.5% and 62.5%. In the post-test (pink line) each learner enhanced their score substantially and the scores fluctuated between 75% and 100%. The average score increased from 47.5% to 90%.

Figure 2. Pre-test and Post-test scores by Objective.
Figure 3. Pre-test and Post-test scores by participant.

The attitudinal survey data indicated that overall the participants reacted positively toward the online video module. The background information survey questions pointed out that the learners were very comfortable (60%) and comfortable (40%) using computers and are online on a daily basis. Interestingly only 40% of the participants had ever received instructions from a web-based module, and only 40% had taken an online class. 60% of the participants had never created their own web page before watching the tutorial, and 100% stated that they felt comfortable to create a web page after taking the module.

Overall the participants “strongly agreed” and “agreed” that the module technology and format was appropriate for the target population and that they were able to follow the online module without any problems. However one participant noted in the open-end question, that the mini test would not work on her computer. An older operating system might be the reason for this issue.

All the participants agreed that the chapters were broken into appropriate numbers, but one participant disagreed that the length of the module was right. Due to improper questioning from the researcher it is not clear if the participants felt the module was too short or too long. 80% of the participants stated that the video instructions were helpful regarding understanding the subject and 20% were neutral.
All participants “strongly agreed” (60%) or “agreed” (40%) that the visual design was esthetically pleasing and easy to work with. “Very basic, easy to follow instructions,” commented one of the participants. All participants indicated that the website was easy to navigate and that the content was not too crowded. One area that was strongly appreciated was having access to the module at their convenience. One participant added, “The demonstrations were very helpful in orienting to the material and where different options are. I liked that there were comprehension sections after the different modules and then an inclusive one at the end. The test helped enforce the information”. Another participant suggested, “Access to a published weebly site to help visualize what its all about.”

Interestingly, although all participants improved their score profoundly, 80% agreed that they preferred learning in a face-to-face environment where they can interact with the instructors and peers. The reason for this result might be that the participants’ ages were between 28 and 56. 60% of the participants were “Digital Immigrants,” people born before the 70s, but the module was aimed for Digital Natives, people born after the 70’s.

Implications or Discussion

Using a simple visual design with easy navigation proved to be effective in this asynchronous online learning module. Multimedia like animation and screen capture video clips with voice over enhanced the score of every single participant. A simple and straight to the point design enabled the learner to improve their knowledge significantly in how to create a e-portfolio on Weebly. The interactive mini tests with instant feedback after each chapter improved the learners comprehension of the material.

The data collected from the attitudinal survey viewed the overall appreciation of the online module. One participant marked, “I enjoyed the cartoon in the beginning, the way the lectures were broken up into segments, and the narration.” Despite the fact that participants enjoyed the module, they indicated a low interest in online classes. Further data might be collected to investigate the low interest in the participants in online classes. This time, only Digital Natives need to be included.

Conclusion

This web-base instructional module proved to be rewarding in teaching the participants how to create an e-portfolio. Offering screen cast with voice over on an online 24/7 availability improved the participants knowledge regarding how to create an e-portfolio in Weebly significantly. The convenience of self guided studying offered in this online module combined with a clear visual design showed the effectiveness of e-learning. The test results showed that the average score doubled from 46% in the pre-test to 90% in the post-test. Since this research was done with Digital Immigrants who are more accustomed to face-to-face learning, the researcher hopes that in the future more research will be done to collect data from a larger group of participants of Digital Natives.
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References


