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The Effectiveness of Using Digital Movies as a Form of Reflection

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Abstract: *Digital videos can be effective authentic assessment tools to help students reflect on their learning acquisition. Using digital video reflections to synthesize learning of abstract concepts and theories such as instructional design can be a method to evaluate how students perceive, understand, and arrive to certain conclusions. This paper describes the process of creating digital videos as part of a reflection assignment that graduate students in an instructional design course had to complete. Benefits and limitations of using this form of assessment are addressed, including some recommendations. The purpose is to help readers understand how digital videos can aid students in learning theoretical content through self-reflection. Instead of writing a paper, graduate students in this particular case created videos to demonstrate how instructional system design (ISD) models affect people's lives using various mediums. In the end, video reflections were effective in helping graduate students understand the relationship between ISD, learning theories, and their applications.*

Keywords: digital videos, instructional design, learning theories, authentic assessment, reflections

1. Introduction

Digital videos, as a form of reflection, have become more popular in recent years as a form of authentic assessment. This is especially true as educators seek more authentic forms of assessments that can demonstrate students' critical thinking processes and learning acquisition of course material. Compared to traditional forms of assessments such as examinations, written papers, and other non-media based assignments, videos help students express their thoughts, perspectives, and arrivals to certain conclusions through multimedia that

is engaging and dynamic. Digital video production can, in fact, stimulate problem-solving skills and enhance creative processes as students construct a message based upon reflection and action (Hung, Keppell, & Jong, 2004). Students can also present a theoretical concept in a more meaningful and practical approach through the creative means of video. Instead of using traditional forms of assessment such as writing papers to explore theoretical concepts, students can reflect and interpret the theory using visual and audio means. As students design and develop videos

as a form of examination, interpretation, and reflection over a theoretical concept, the process of problem-solving and critical judgment occurs.

This paper discusses how graduate students in an instructional technology course interpret theoretical content concerning instructional system design models (ISD) in a more practical presentation through videos. Students in this case example created digital videos to express their understanding of how ISD and learning theories can be applied to everyday experiences such as planning a trip, preparing to cook a specific dish of food, and winning a NASCAR race. Instead of writing a paper, graduate students in this particular case created videos to demonstrate how ISD models affect people's lives from the initial phase of audience and tasks analyses to the last stage of evaluation and revision. The evaluation of student video reflections is presented in this paper to explain how the project helped students acquire knowledge and skills concerning the content presented in the course. Further, the findings reveal that creating video reflections increased their learning motivation by enabling students to express and use what they have learned in a creative format.

2. Definition and Background

Digital videos can help students and teachers express learning through various forms of multimedia. Digital videos integrate multimedia elements such as sound, voice narration, music, videos, images, and animations to communicate information. The technology helps students and teachers move from a "largely linear learning environment to an increasingly nonlinear environment" (Lambert & Cuper, 2008, ¶ 12). Instead of the learning taking place in a linear progression (e.g., PowerPoint presentations), digital videos allow students

to have creative control over how they present their construction of knowledge. Learning, in this sense, moves away from the behaviorist mode of thought to a more constructivist model in that students actively create reflective products that demonstrate their understanding, interpretation, and knowledge acquisition (Nikitina, 2009). Videos also permit flexibility in terms of how students sequence their thoughts, ideas, and interpretations of a subject area or a personal account. The learning or interpretation is not dictated by the teacher in this case, but by the students instead as they actually experience the learning process. Solvie and Kloek (2007) make the following comment concerning the value of experiencing the learning process through self-reflection:

Viewing learning as a process and not a product, developing inquiry skills, acquiring knowledge as opposed to memorizing, and applying knowledge and skills in the context of relevant settings reflects experiential learning. Experiential learning also holds that transformation takes place as ideas are formed and reformed as a result of experiences, feedback, and reflection. (p. 9)

Education has several uses for digital videos as a learning tool. Digital videos could be used to create an interpretive story about a subject area that is relevant to students and designed in a way that that leads to a progression of events. Documenting changes in one's behavior, knowledge, and growth over a period of time could also be accomplished through digital videos. Professional development and learning progress can be recorded and analyzed through digital videos as a form of authentic assessment that is different from formal evaluations such as written papers. Regardless of the use, digital videos have promise in education.

2.1. Digital Storytelling

One use of videos in education, in simplest form, is digital storytelling. Digital storytelling is a form of expression and reflection created by individuals as they tell a story about personal events or events leading up to a particular situation (Ohler, 2006). The creator or student storyboards the sequences that affect their lives, whether positive or negative, to document and show others their personal encounters and individual battles. Students create a story using multimedia elements to express ideas that are more personal to them. This medium permits students to become fully engaged and motivated to create a product of their own in the learning process.

Baggett (2008) summarizes the usefulness of digital storytelling to stimulate various cognitive skills among students, “When students are engaged in the process of creating a digital story, they must synthesize a variety of literacy skills for the authentic product: researching, writing, organizing, presenting, interviewing, problem-solving, assessing, as well as employing interpersonal and technology skills” (p. 872). Digital storytelling also helps students utilize multimodal literacies as they create stories through digital video. Multimodal literacies include various modes such as speech, writing, gesture, gaze, body-posture, movement, and so on (Jewitt, 2003), and digital composing and design of videos can assist teachers and students to embrace multimodal learning (Miller & McVee, 2013). Kiili, Kauppinen, and Laurinen (2011) indicate that:

Digital video composing provides teachers with opportunities to orchestrate visual, auditory, kinesthetic, and textual modes by applying computer software, such as Movie Maker or iMovie [13]. The aim of the present teaching experiment was both to offer knowledge on digital literacy and

to provide learning experiences on digital video composing. (p. 3)

Thus, digital videos in the form of expression serve as a medium to facilitate the use of different learning styles and modes. Students do not just use one cognitive skill or mode, but many when creating video products. This creates a learning environment in which creativity leads to learning and the use of different skills.

2.2. Professional Development

Digital videos can also depart beyond documenting personal lives and experiences. Digital videos could serve as a medium for stimulating professional development. In teacher education programs, digital videos have been used to document pre-service teacher education students’ growth and development over the sequence of their education program (Calandra, Gurvitch, & Lund, 2008). Digital videos recorded during pre-service teacher education students’ program of study can document and demonstrate changes in their instructional strategies, teaching philosophies, and teaching practices by documenting the students’ viewpoint from the beginning of the program and their growth over time. Hours of classroom videotaping can be organized and presented in more meaningful forms that can help visualize students’ professional development over time as they reflect upon their individual changes as an authentic form of assessment (Petrosino & Cunningham, 2003).

Studying video case examples are another way to help in the training of pre-service and in-service teachers (Sherin, 2008). First, videos are an everlasting record of one’s progression over time and teachers’ interaction in the classroom. In addition, the flexibility to repeat, pause, and fast-forward allows teachers the ability to focus on one instance that occurred in the classroom without relying

on memory. Second, videos can be collected, edited, and reorganized. Existing videos can be edited by deleting some footage, grouping footage together, adding other multimedia elements in between, etc. This helps teachers create libraries of videos that may examine one common setting, but through various perspectives. Finally, videos can help teachers interpret different set of practices of how they would interact in a classroom situation. Viewing videos in this way develops knowledge of not “what to do next, but rather, knowledge of how to interpret and reflect on classroom practices” (p. 14). Thus, viewing video case examples of either of their own or another’s teaching practices can help teachers determine the effectiveness of a pedagogical approach.

2.3. Authentic Assessment

Digital videos can also assume a more active role than just for storytelling an event or documenting a student’s professional development. Digital videos are part of an authentic learning experience as the creator constructs a video presentation to articulate theoretical concepts into a more practical scenario (Kearney & Schuck, 2006). Digital videos produced by students are generally shared by real authentic audiences or peers, making the design and development of videos extrinsically motivated. Further, tasks involved in the creation of digital videos often require a high level of decision-making and choices that support student initiative. Hence, authentic assessment practices are integrated in the creation of videos by students.

Hofer and Owings-Swan (2005) state that “the open-ended nature of digital movies present powerful opportunities to design student-centered, inquiry-based projects tied to the unique goals and emphases of the various disciplines” (p. 105) in education. In this case scenario of graduate students using videos to examine learning theories and instructional

design principles covered in the instructional design course, demonstrate what Hofer and Owings-Swan are trying to convey. Graduate students were required to create digital video reflections using various tools to articulate their understanding of instructional design and its implications in teaching and learning.

In a sense, digital videos are forms of authentic assessment that embed reflective practice. Digital videos can permit students to self-reflect on their learning by selecting how and what to show to their audiences (Cheng & Chau, 2009). Students are able to address problems, strategies, perceptions, occurrences, etc. they encounter through self-reflections. Video reflections could be similar to digital storytelling and journaling, but they could also take the form of video projects that begins with an introduction and/or theme, integrates various multimedia elements to document the creator’s knowledge construction and thought processes, and end with a conclusion and future implications. Graduate students in this case scenario performed this task as they took the course content and reflected on this content through video.

2.4. Technology Tools

Varying software exists on the market to help students and teachers develop simple and efficient video productions. For Mac computers, the software program called iMovie can help students and teachers create digital videos. The software program allows users to import sound, video, and images into a storyboard and offer various features such as transitions and video effects. For Windows-based systems, the free and easy-to-use software called PhotoStory or Windows Live Movie Maker is an option. If these are not on the computer system when purchased, they can be downloaded for free. Screen capture software can also be used for those wanting to demonstrate tasks on the computer

or capture what the user is doing. Camtasia is one of these products that allow editing by the user. Each program has its own benefits and limitations, but they offer similar features to create good quality videos.

Online video editing tools are also available. Animoto and Go!Animate are two examples of how users can create videos online. Animoto is fee-based if one wants to create videos longer than 30 seconds, but the service does offer individuals nice features such as high-quality music, thematic animations, text slides for narration, sound editing, and much more. Animoto movies are stored online and also can be downloaded once created. Another way that individuals can create videos is through online animation programs like Go!Animate. This service is free or fee-based and allows users to use animated characters in different settings (e.g., classroom, office, zoo). Users type in written dialog for the characters that are then converted to audio voice. Users can select gender, language, and ethnicity of the characters that are reflected in the voices.

Regardless of the software or tool used, creating digital videos as a form of expression, reflection, and interpretation can be accomplished.

3. Research Purpose

The purpose of this paper is to share one case example of the effectiveness of using digital movies as a form of reflection in a graduate instructional design course. Students in the course are required to study instructional system design models and principles and discuss how they could be applied to teaching and learning environments. Instead of writing a paper on this topic, students are required to develop video reflections. By enabling students to select the tools to create the videos and design them in their own way, video reflections

can motivate students to review course content more thoroughly, translate the most important concepts, plan in the presentation of their understanding, and demonstrate what they have learned with colleagues.

Using this case example, three research questions have been developed to interpret the usefulness of videos as a form of reflection and learning.

1. What methods do students use in designing and developing video reflections to demonstrate understanding of course content?
2. Can video reflections help students obtain knowledge and skills related to course content?
3. Can video reflections increase learning motivation by offering students flexibility in presenting what they have learned?

4. Methodology

This descriptive case example provides readers with a description of the final video projects and their effectiveness through content analysis, informal conversations, and written responses. Content analysis included an examination of major themes that emanated from the video reflections and the selection of software tools used. Communication and responses given by students provided substance for interpreting learning acquisition and motivation. Results are given in this paper to help readers visualize how the students interpreted course content and commenced in creating videos as a form of reflection.

4.1. Research Setting

The case example that implemented digital video reflections was an online graduate course that covered major topics such as theories of instructional design (systems

theory, communication theory, learning theories, & instructional theories). The course offered students the opportunity to apply a variety of well-established and emerging instructional design and development models by critically evaluating the theoretical and practical underpinnings of such models. Instructional goals for the course were to help students obtain a basic understanding of the:

- relationship between various instructional design models and theories applied to the field.
- application of learning theories in the design and construction of technology projects and/or programs.
- processes in which instructional designers undergo to perform analysis of an instructional setting.

The intended mission of the course was to help graduate students entering the field of instructional technology and design become better users and developers of instructional or technology-based programs by adhering to instructional systems design models. Such design models, with the assistance of selecting appropriate learning theories and strategies, can assist in enhanced design, development, implementation, and evaluation of instructional or technology-based programs.

4.2. Participants

Two sections of the course were included in this study. Seven students were enrolled in the fall 2009 course, and the other fifteen in fall 2011. A total of 22 students completed the video reflections with 9 male and 13 female students. In terms of majors, 19 students were instructional technology and design majors, with two students from educational studies and research and one from mass communication. Interestingly enough, neither gender nor major

influenced the quality of videos produced (e.g., educational studies students did better than some instructional technology students) or the themes that the students used (e.g., some were more formal with the student speaking in front of a camera, while another would center around a task such as cooking).

4.3. Video Reflection Criteria

The purpose of this video reflection was to require students to examine instructional design models and learning theories that could be applied in everyday, or hypothetical, circumstances. By creating their own interpretations of ISDs value in daily experiences students would, in turn, understand the relationship of ISD to any environment whether educational, professional, or personal. The videos were used as a mechanism to help graduate students comprehend the theoretical foundations of ISD and learning theories in a more relevant way.

After students have the chance to explore the field of instructional design and how the different design models correspond to various learning theories, students developed a video reflection concerning instructional design theories and principles. The reflection was evaluated by how well the following had been explained: (a) how students defined instructional design, (b) what areas they felt that instructional design had a considerable impact upon, (c) advantages and limitations of instructional design, (d) how they would use instructional design, (e) their discussion of practical examples that illustrated their personal perspectives concerning this field, and (d) their ideas concerning the future of instructional design.

The video reflections were between ten to fifteen minutes long. The video reflections included appropriate text slides, graphics, sound (music and narration), video clips, etc.

needed to articulate how students defined instructional design and its relationship with learning and teaching in any scenario whether educational, professional, or personal. The video editing program used to create the video reflection was left to the student to decide. Most students chose to use the more simple programs such as Windows Live Movie Maker and iMovie, especially if they were beginners. Because movie editing was not taught by the instructor in the course, the choice of video editing tool was determined by the student. A majority of students in the course were instructional technology majors, so they had the prior experience of video editing. Students from other majors did not, but they learned quickly and created well-made videos for the course project.

4.4. Research Design and Data Collection

The design of this study includes qualitative methods to evaluate the outcome of students' learning through creating digital videos. Qualitative methods were used in this case example because they offered the researcher a way to interpret learning acquisition and usefulness of videos as a reflective tool, as the majority of analysis is interpretive (Strauss & Corbin, 2008). Further, data collection in this study was descriptive. This follows qualitative research as data in qualitative research tends to be more of pictures and words and contains quotations made by participants to demonstrate and substantiate findings (Bodgan & Biklen, 2003). In this particular study, three qualitative data collection methods were applied: video reflections, online and personal communication, and written responses given by the students.

Video reflections were the primary form of data collection and served as artifacts for the analysis of learning. In qualitative research,

data such as public records (e.g., mission statements, annual reports, policy manuals), personal documents (e.g., memos, diaries, email), and physical evidence or artifacts (e.g., posters, completed projects, media, artwork) can be used as assessment methods (Bowen, 2009; Given, 2008). Artifacts help the researcher make interpretations between the past and present in the context of which they are produced. Thus, video reflections became the primary form of data for this study to examine learning of course content and as a self-reflection tool.

Informal communication, whether electronically or in person, was also used as a form of data to help substantiate the findings. Communication (e.g., email) was selectively chosen to help explain the research questions being investigated (Zhang & Wildemuth, 2009). This communication data involved short responses made by students while they were working on their video reflections and afterwards. The researcher (instructor) did not elicit these comments; instead informal communication involved questions and answers, short side comments such as "I loved doing this project," and observations made by other students. For the communication that took place off-line, the researcher made mental and written notes of what occurred and what was said. Although this was not perfect, the field notes helped the researcher recall what had transpired.

Written responses to researcher's (instructor) initiated questions were another form of data, and served as a replacement of informal interviews. These comments were more relevant to the topic at hand and more detailed. Questions from the researcher included: (a) how was your overall experience in creating the video reflections, (b) did the videos augment your creativity, (d) did the video reflections help you better understand

the theories and principles, and (e) did you gain more knowledge about instructional design from creating the video. Some of the students answered these questions in greater detail than others. Overall, the questions served as another form of reflection after students experienced the phenomena or event (Ritchie & Lewis, 2003). These questions were asked after the video reflections were due. Asking students afterwards allowed them time to think about the actual experience and process, and be less concerned about completing the videos for submission. The students submitted their answers by email to the instructor.

4.5. Data Analysis

Content analyses of the video reflections and documents (e.g., email, written responses) were performed and served as the primary form of data analysis. The analyses of videos offered the researcher (a) an understanding of the methods students used to create the videos, (b) an idea of how students designed and storyboarded the video, (c) a way to examine students' creativity through the videos, and (d) determine whether students successfully conveyed their learning to the audience. The content analyses included the researcher reviewing the content of the video reflections and determining coding categories to describe the findings. Content analysis is "a research method for the subjective interpretation of the content of text data (in this case video) through the systematic classification process of coding and identifying themes or patterns" (Hsieh & Shannon, 2005, p.1278). For this study, each video reflection was examined and coded for themes and patterns that assisted in the organization of findings. The codes developed also helped in the presentation of findings for each research question that addressed three areas: (1) methods used to create the videos, (2) learning acquisition of the course content, and (3) videos as tool to increase motivation.

Documents such as online communication and written responses to researcher initiated questions were also analyzed by "inferring meaning and making judgments by seeking common threads" (Given, 2008, p. 24). As with the videos, analysis of these documents was categorized by the research question to address methods, learning acquisition, and motivation. Analyses of the documents helped the researcher determine whether the actual experience (a) improved students' perception toward ISD as an effective model, (b) increased motivation among the students to complete the project and take the time to plan the video, (c) assisted students to reflect over what they had learned in the course, and (d) made students more aware of ISD's application in the real world.

5. Findings

The video reflections varied in terms of medium, themes, and discussion tactics. Some were more formal as students answered questions that the instructor asked of them and then inserted a "practical scenario" of how ISD could be used into the video toward the end. Other video projects were more creative as students answered the instructor's questions, but did this through a realistic scenario such as preparing and planning for a successful date, saving money by using coupons, and planning a vacation. Regardless of the format, the video reflections were effective in helping students understand the relationship between ISD, learning theories, and their applications. The video reflections also served as a motivating means of expressing ideas, thoughts, and interpretations. This finding was also supported by verbal and written comments made by students after the experience. Students found video as an effective way to reflect over what they had learned in the course, and preferred this creative means over a paper-based project. Presentation of findings had been organized

under the three research questions. Each offered an illustration of what occurred and how students responded to the activity.

5.1 Methods in Designing and Developing the Videos

In terms of designing and developing the video reflections, students were creative and did take the time to ensure that their thoughts and ideas were articulated and presented. Students used a variety of tools to complete their video reflections and enjoyed the opportunity to self-select the software tools and overall presentation format. Choice was received positively as the students designed their video reflections; they viewed this as a way to express their creativity in using media they felt appropriate as one student stated, "Selecting the types of software to use in my video reflection really helped me spark my own creativity. I enjoyed using software that I already knew, and learning about new ones from the others in class."

5.1.1. Selection of software and media.

Students were open to select the type of medium or software to use in creating their final video reflections. Because video editing was not an instructional unit, students were free to work with a medium comfortable to them as one student commented, "I am new to editing video, so please bare with me. My mom was the camera woman and she is technically challenged. We had some laughs and caught some looks while filming our grocery trip in Walgreens. The cashier was a good sport and I do have a permission/consent form signed by her." This comment demonstrated that allowing students to select the tools to create video projects can help ease the uncertainty and make the process more enjoyable.

Between the two semesters, the types of software utilized varied. Beginners or Windows users preferred Microsoft products,

while the more advanced students leaned toward Mac and Adobe software. During fall 2009, six of the seven students used either Windows Movie Maker or Photo Story software, both Microsoft products, to develop their digital video reflections. Only one student used a non-Microsoft medium (iMovie) to create the video reflection. For fall 2011 however, the types of medium changed. Nine of the fifteen students still used Windows Movie Maker to create their video reflections. This software was obviously the preferred choice because of its user-friendly features, free accessibility, and most students being Windows users. The two-year difference did indicate a shift in medium as four students used iMovie, one student used Final Cut Express, and one used Camtasia for capturing live video as she narrated through scenes in *Second Life*. The shift to Mac computers became evident over the two-year period, as iMovie became the replacement for Windows Movie Maker on Mac systems. In addition, students in the fall 2011 semester did take more advanced instructional technology courses in the department's Mac lab, which could account for the greater switch to Mac software and to other video editing programs like Adobe's Final Cut Express and Camtasia.

Students in both sections did use live video footage in their reflections as they recorded themselves, others, or inanimate objects (e.g., dolls) acting/speaking. Recorded live video footage were intersected with animated titles and transitions created in the software. For instance, one student narrated her reflection concerning ISD and learning theories in an interview-type format using Barbie dolls in different scenes or backdrops she created. Transitions between scenes or topics were completed using title slides in Windows Movie Maker. Another did something similar as he videotaped himself getting ready for a date and used title slides to document the ISD process and how ISD could

be used in this situation. Others videotaped themselves using Webcams as they reflected over the content and interspersed the video segments with still pictures, title slides, music, etc. The one student who used Final Cut Express had a green screen behind him while speaking. The viewer would see him speaking about ISD, all the while behind him were pictures and animated drawings displayed to demonstrate his thoughts.

Animation software was popular for the section in fall 2011. Several students used animations software such as GoAnimate and Voki for narration purposes. Some students experienced using such software before, while others became familiar with this medium because of an emerging technologies class they were taking at the time. The animations were integrated into the video editing software of their choice and worked out very well. Regardless of the software or hardware used, the quality of the video reflections is really based upon students' creativity, commitment, and ability to synthesize their learning into a concrete ten to fifteen minute video reflection.

5.1.2. Storyboard layout. Discussions that emerged from the video reflections were well-designed in terms of storyboard layout. Obviously, from the video reflections submitted, students really enjoyed the experience of summarizing their thoughts, ideas, and learning acquisition into a video format rather than on paper. One student comment related to this finding was, "I am not a good writer. Getting my ideas onto paper is difficult for me. Using my imagination for a video production really helps as I can express myself verbally through images, voice, and so on."

Summarizing the layout methods that emerged from this activity included:

- Investigative format – Some video reflections took an investigative role as

characters meandered to different places to investigate the answers. This could take the form of a traditional interview format, a news report format, or initiating a question at the beginning to be resolved later. For instance, one student began his video with a problem taken from the movie *Apollo 13* by plugging a "square peg into a round hole." Throughout the rest of the reflection, he tied ISD back to the problem and gave the solution. Another student integrated various settings in Muviza (animation software) as a television newscaster directed himself to different on-site news reporters as they interviewed various characters.

- Daily life or practical application – Many students offered good arguments of how ISD related to daily life or practical circumstances. Whether students took the first or second approach mentioned earlier, all students were required to bring together real-life scenarios in their reflections. For instance, one student related his discussion to the use of the soroban in foreign language learning using the first approach (see next section on answering questions). Although he covered the questions asked of him, the idea of the soroban could be found throughout the reflection with examples and images.
- Role-playing – Some video reflections used a role-play method to discuss ISD. For instance, the student who used Second Life applied the Star Trek theme as she ventured through the galaxy to have her questions answered. Another student used the private investigator role to embark in discovering answers to his client's question. One student took pictures of animatronic bears at a pizza parlor and had these characters answer Billy Bob's questions. Students

who adopted the role-play method used characters to progress through the video reflection with an initial question.

- **Multimedia integration** – Multimedia was used throughout the video reflections. Some video reflections embedded many forms and altered the type of medium used. For instance, one student had PowerPoint slides to present information, title slides for transitions, video footage of himself demonstrating a problem, and embedding GoAnimate sequences. Others were more linear in layout and design such as just using title slides, still pictures, voice over narration, and music.

Layout and design of the video reflections varied as much as the media, software, and approach used. Because students were able to employ any method they find appropriate, the video reflections were certainly diverse in terms of medium, approach, and layout direction. Video as a self-reflection tool served its purpose in this case.

5.2. Obtaining Knowledge and Skills Related to Course Content

Instructional design can be a difficult concept to grasp. By requiring students to create video reflections about ISD models and their applications to learning, teaching, and daily life activities, students were able to grasp the course content better. Students varied in their approaches to answering the questions given in the criteria and also obtained new skills from this particular experience. Video can serve as an effective medium for communicating learning and assist with skill acquisition.

5.2.1. Approach to answering questions.

Students basically used one of two approaches toward answering the questions required in the video reflection. One method was to approach each question/topic in sequential order by

imposing pictures, live video footage, music, sound, title slides and transitions, and other media in between to demonstrate their points of view. The other method was to approach the topic of ISD and learning theories through a practical scenario such as cooking a dish of food or saving money by using coupons. Either method, the quality of the video reflection relied on students' creativity, focus, and how well they answered the questions.

Video reflections that took the first approach varied in how students integrated multimedia and discussion. For instance, a student began her reflection by showing some PowerPoint slides of the first few questions (e.g., defining ISD) and then moved toward live footage of herself using an electronic Jeopardy game system for answering the other questions (e.g., learning theories, application of ISD, future of ISD). In the fall 2011 section, several students used animation software such as GoAnimate, Voki, Muviza, and Extranormal to help narrate their reflections. Some of these used the software for the entire reflection, while others used the software to narrate some parts and then inserted their own voice narration on still pictures or video segments. One student completed her entire reflection using different islands on Second Life as the main character progressed through different settings and spoke to various characters to help her answer the questions. Another student used stuffed animals and had the main character go through the process of discovering what ISD and learning theories are by interacting with other stuffed characters. In the end, most students who adopted the first approach took the more traditional route of narrating over still pictures, inserting title slides in between topics, and/or adding self-recorded or pre-recorded video.

For the second approach of using a practical scenario, the topics varied greatly. No one used the same topic between the two

semesters. The ones who did take a more practical approach included topics such as cooking, couponing, traveling, dating, and investigating. With this approach, students demonstrated the processes of ISD models in that particular situation and discussed the applicability of learning theories and future directions. For instance, one student compared the process of cooking a food dish with the phases of ISD models and how learning occurs as the cook does this. Another took the viewers through the process of collecting and using grocery coupons as a way to save money by following the phases of ISD models and how this applies to daily life. One student took the creative approach by pretending to be a private investigator (like the old black and white Hollywood movies) and had a female client come to his office to investigate and answer the questions concerning instructional design.

Students, overall, were very imaginative using either method. One student did not even use any voice narration, but assembled slides, still pictures, and music together in a way that was very dynamic and compelling. Others integrated a lot of different media such as video, animation, music, different voices, pictures, movie clips, sound effects, transitions, and more. The researcher herself was even amazed by the ideas, inventiveness, and learning that emanated from the video reflections and found this format more interesting than reading a paper.

5.2.2 Learning of content. Analysis of the video reflections and documents demonstrated that students did learn the course content. After creating the videos, students' written and verbal comments illustrated their learning acquisition through the reflections. First, students came to realize that ISD had much more effect on daily life than they had imagined as students stated, "I now agree that instructional design has always been a big part of life. They (people) just didn't call it that

and didn't realize that was what they were doing at the time," and "Instructional design is something that everyone should consider when planning something like projects and programs. It provides people with a structure to follow regardless of what that activity may be."

Students were also better able to explain the models in the video projects as opposed to on paper. In fact, many mentioned that explaining ISD was easier through video than written words. One student mentioned that, "After discussing the models in class discussion, I have to say I did a better job at explaining how the models worked in the video presentation as compared to the first paper we completed in class about model comparisons. The video project just helped me think beyond what I said in the paper in terms of application." Another student indicated how much she enjoyed this video project over the first written assignment as she stated, "I loved this project. It made me use my own voice and creative thought. Not that I do not like to write, this project just made things more practical and easier to show to the audience."

After examining the video reflections and documents, a common theme emerged in that students addressed how likely they will remember ISD when encountering a project and for further study in their academic programs. Students who were classroom teachers in the course articulated how they themselves never used an ISD model when planning curriculum. Now that they have experienced this, they will certainly remember certain concepts gained from the course as one said, "As a teacher, I never knew how ID could help with planning. I never used this type of model, but I can see how it would benefit in a specific lesson from beginning to end." Some students mentioned that they may investigate ISD models further for other research projects such as dissertations. In short, creating video reflections was a more

effective tool in reinforcing course content and ensuring that the students were more likely to remember the experience than writing a formal paper about the topic.

5.2.3. Learning skills. To the inexperienced user of technology, creating video reflections seemed to help students acquire more technical skills. Although some students remained with the basic tools such as putting together PowerPoint slides with voice-overs, images, and music, there were some students who went above and beyond by trying out different forms of media. As in one case a student who was not an instructional technology major mentioned, “I found some great animation sites/characters and couldn’t stop fooling around with for my various television shows/debates/commercials about the ID concept. I saw a couple of others in class going with the animation thing too. We all just kind of put different twists on it.” This demonstrates how students sharing their videos helped them learn about new technology and trying out different methods.

Creating videos also helped students learn about the importance of planning and storyboarding. Many mentioned how this project required them to plan, script, produce media, and then assemble all the elements together. Some relevant comments made by students on this issue were, “I really had to plan this project. This was not a two-day project for me because I actually had to gather and collect the media I wanted, learn how to use the software, plan out what I was going to say, and then put everything together. I did enjoy this project and learned so much, but it also took time.” Some students even mentioned that developing the video required more time and thought than writing the first paper. One student mentioned to the researcher because he was so eager to produce the best product, he really took the time to plan the video reflection as opposed to writing the first paper whereby he just collected

some references concerning ISD models and compared the differences and similarities between them as quick as he could. Overall, creating videos not only helped students learn technical skills, but time management and project planning skills also.

5.3. Increased Learning Motivation

Designing and developing video reflections seemed to help motivate students to think, reflect, and put together a thoughtful reflection concerning what they have learned in the course. From the comments and feedback received, the researcher found that the video project was a successful activity to prompt creativity, thought, focus, and commitment among students. Of the three major projects required in class, the video reflections were always the one that the students completed on time without asking for time extension as opposed to the paper assignments. In addition, some papers were not submitted at all as students later dropped the course, but yet always completed the video reflection. Further, students seemed to be motivated to share their projects with others and offer useful advice and feedback. As students completed their videos and posted them online for classmates to review, comments made between students demonstrated the enthusiasm of seeing different perspectives and the tools used. They, in a sense, motivated one another as the later submitters implemented some of the ideas and tools presented in earlier submissions. A few students even submitted their videos two weeks prior to the deadline, which is another indicator of motivation. According to Davis (2009), instilling motivation in the learning environment requires early and prompt positive feedback, assigning accomplishable tasks, helping students find personal meaning and value, creating an open atmosphere, and making them feel valued

members of a learning community. All this was accomplished in the video project as students assisted one other, offered positive feedback, and allowed students to find value in completing these video reflections with an open selection of tools.

Comments generated by the students also supported their enthusiasm and likelihood to complete the video project. Brief statements such as this had been an enjoyable experience was mentioned numerous times. One student even mentioned that, "Completing this project was fun. I really appreciated the opportunity to use my skills in presenting my learning experiences in this class. I hope to complete more projects like this in my program." The one student who used a green-screen for his video to show what was happening on the computer behind his head expressed his enjoyment of this activity to the researcher. He said that he much rather finish assignments like this than formal research papers. Overall, the practice of creating video reflections seemed to encourage and motivate students to take the time to reflect over ISD models and design a video that represented their learning experience.

6. Discussion

Digital video is a good resource to help students, especially in this case, reflect over more abstract ideas such as ISD models and learning theories. Students enjoyed the experience of creating videos to articulate their perspectives and demonstrate their knowledge acquisition in personal ways. Instead of trying to summarize their ideas and perspectives into typewritten words, they were able to consolidate them into a visual and aural representation of their learning. Digital videos, in this instance, allowed students to look into themselves by stimulating their imagination on how to portray their learning in the course.

Digital video however, has its benefits and limitations. Benefits include an opportunity for students to use their creativity, demonstrate their learning and understanding through a multimedia format, witness how much they have learned in the course, and have fun completing the project. Limitations include the time required to plan and organize the video and/or learn a new software program, struggling to become as imaginative as their colleagues, having inadequate access to necessary equipment such as digital video cameras to record longer video segments, and experiencing limited acquirement to good "voice characters" or actors for their videos. Students in this case example experienced all of the benefits and limitations.

Students in this case example did encounter experiential learning as their ideas were formed and reformed from their reflections. Solvie and Kloek (2007) made an observation that learning is a process and not a product, and thus, students need to apply their knowledge and skills in the context of self-reflection. In this study, students embraced this concept by demonstrating to the audience how they understood instructional design principles and learning theories, their applications in practical settings, and thoughts for future implications. Further, students used digital videos reflections as a form of authentic assessment by enabling them to self-reflect upon their learning by choosing what to show audiences and in what manner (Cheng & Chau, 2009; Hofer & Owings-Swan, 2005). With freedom over the selection of tools to create the videos and personally design the presentation of material, the process became an authentic learning experience for the students. As Kearney and Schuck (2006) observed, digital videos are part of an authentic learning experience whereby the creator articulates theoretical concepts into a more practical scenario. Finally, because

videos produced by students are generally shared with authentic audiences or peers, students may be more extrinsically motivated to complete this task. This was true in this case example as students were eager to share their videos and obtain feedback from peers.

7. Conclusions and Recommendations

Digital video is an authentic assessment that allows students to tell a story of what they have learned through self-reflection. This ties back to the literature in that digital video allows individuals with different learning styles and modalities to create a product that best represents themselves (Kiili, Kauppinen, & Laurinen, 2011). In addition, video also provides students with freedom to select what they want to show their audiences, thus removing the fear of providing incorrect information (Cheng & Chau, 2009). Students are more motivated to share ideas if the learning community is open and positive. Digital video reflections can help students view other perspectives and thought processes other than their own. Because students in this case example were completing the same project, the opportunity to share and present ideas in a non-threatening manner was possible.

If educators are to use video reflections as part of course assessment certain items need to be considered. Educators need to give guiding criteria to students, regardless of how unbound students are to design and develop their videos. Allowing students to roam completely free is dangerous, because without some guidance one will not know what to expect in the end. Another consideration is technology access and skill. Some students may not have the technology or skill to do “neat things.” This could place a burden on personal self-esteem, especially among the younger ages. Thus, ensuring or even restricting what students can use may be necessary if major inequalities

exist. If disparities between students exist, then the educator may have to provide formal instruction concerning video making and have students create smaller videos that lead to larger projects. Finally, because video making requires equipment/software access and know-how, allow students the most time available to work on the video. Complications are definite to occur, and thus, an instructor needs to permit students a good amount of time to storyboard, gather the required media, learn the software/hardware, and then develop the video itself. In the end, both educators and students may find creating video reflections an effective tool for demonstrating learning and deliberation that may not occur otherwise.

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