Implementation of FiLMiC Pro in an Online University Level Introduction to Video

Course

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Abstract

This is a Technology Integration Plan (TIP) for the Graphic Information Technology program's online introduction to videography course, GIT 294. Due to a demonstrated need to provide online students with the same hands-on videography experience that campus-based students receive, use of the FiLMiC Pro application was implemented. This application turns a smartphone or tablet into a fully manual video high definition camera, allowing online students to "learn by doing" without having to incur the significant cost of purchasing video camera equipment.

Introduction and Context

Background

Founded in 1885, Arizona State University (ASU) is a public metropolitan research university. It has five campuses in the Phoenix metropolitan area. ASU aligns itself with the "New American University" model founded by ASU President Crow. This model identifies ASU as "a comprehensive public research university, measured not by whom it excludes, but rather by whom it includes and how they succeed; advancing research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves" (New American University, 2015). In 2014, ASU had approximately 82,000 students enrolled, approximately 75% undergraduate students and 25% graduate students, making it the largest public university by enrollment in the US (US News, 2017). In 2016, for the second year in a row, ASU was ranked No.1 in Innovation by U.S. News & World Report. ASU's online campus currently has over 30,000 students enrolled, offers over 150 degrees, and is ranked No. 4 for US online undergraduate programs (ASU Online, 2017).

The Graphic Information Technology (GIT) program is housed with ASU's Fulton School of Engineering at the Polytechnic campus. The objective if the GIT program is to teach students the technical side of the graphics industry. Courses include web development, animation, gaming, photography and videography.

GIT 294 is an introduction to video course within the GIT program. GIT 294 teaches students how to operate professional video equipment and capture professional videos, as well as introducing them to the business aspect of the video industry. As of

now there is only a campus-based section of GIT 294, because faculty have not yet

determined how to teach this subject effectively in an online format. This is largely due

to the challenge of equipping online students with professional grade camera gear, and

replicating the learner-centered, project-based, hands-on collaborative learning

environment provided by the campus-based section of GIT 294. In the campus-based

section of GIT 294, projects are meaningful, challenging, and learners are given full

creative control. Learners are provided with immediate feedback and guidance from

seasoned professionals while using state-of-the-art equipment to create portfolio worthy

video projects. Learner motivation is extremely high. At the end of each semester, the

student course evaluations reflect an extremely positive learner experience, with many

students praising the project-based format and reporting that GIT 294 is one of their

favorite courses.

Need for Intervention

Per program standards, as of Fall 2018, all GIT courses that are offered on

campus need be available in an online format as well. GIT Faculty are currently facing a

significant instructional challenge in replicating GIT 294's motivating and authentic

learning environment in an online course format.

The primary challenge is that online students simply do not have access to the

video camera equipment necessary to complete the hands-on projects. The concern is

that in the absence of such equipment, the online GIT 294 class will become an

asynchronous, lecture-based course with limited peer interaction, minimal projects, and

objective assessments that focus on rote learning. The resulting learner gain for online

students will likely be lower when compared to campus-based students, as will be skill

transfer to real-word settings due to lack of hands-on learning. Learner motivation will

also likely be lower, followed by higher drop and fail rates. This chain of events

transpired in other similar studio-based courses when they were converted to an online

format. In such courses, it has become commonplace to receive course evaluations that

state a "disappointment in the lack of hands-on projects." It is a common student

complaint that the courses are lacking projects that allow the students to actually "create

projects."

Solution

Lack of access to equipment is perhaps the biggest hurdle to overcome in an

online videography course. The university can simply not expect college students to

invest in professional quality video equipment (which can cost upwards of $800) for one

class. The challenge remains how to still provide these students with the hands-on

videography experience that the campus-based students receive.

One solution is to implement an emerging virtual reality (VR) technology, such as

FiLMiC Pro, that simulates the experience of shooting with a professional grade video

camera at the fraction of the cost. All that is required is a smartphone or tablet, which

most students have, or at the very least, can borrow.

Description of Technology

FiLMiC Pro is a lightweight virtual reality application that transforms a

smartphone or tablet into a high definition video camera with a robust suite of manual

controls. FiLMiC Pro provides a variable speed zoom, audio gain control, and variable

frame rates up to 240fps (on newer devices). In addition, FiLMiC boasts full manual

control over focus, exposure, ISO, shutter speed, tint and color temperature. FiLMiC Pro

also comes with a host of professional tools including audio meters, stereo microphone

support, informative thirds guide, and a variety of resolutions and aspect ratios. With 2K,

3K and 4K resolution options and a robust set of manual controls, FiLMiC Pro provides

everything necessary to create a Hollywood movie using a smartphone or tablet (FiLMiC

Pro, 2018).

Figure 1. FiLMiC logo. Retrieved from https://www.filmicpro.com/apps/apple/filmic-pro/

Figure 2. FiLMiC video capture screenshot. Retrieved from

https://www.filmicpro.com/apps/apple/filmic-pro/
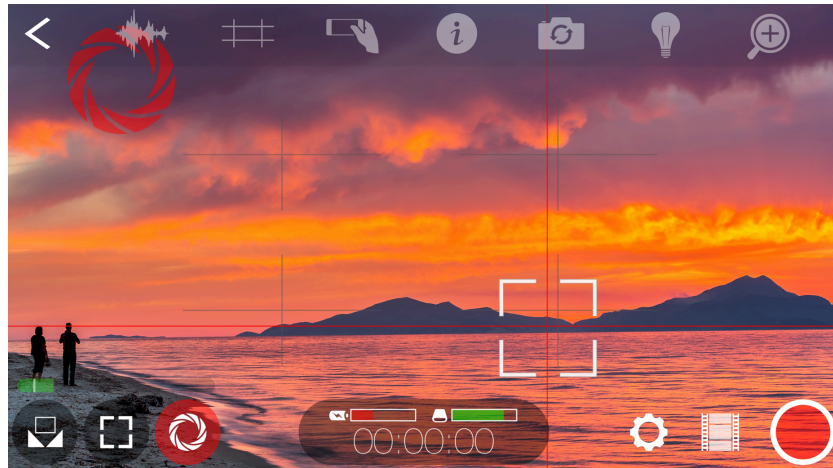
Figure 3. FiLMiC manual controls screenshot. Retrieved from

https://www.filmicpro.com/apps/apple/filmic-pro/

Figure 4. FiLMiC controls menu screenshot. Retrieved from

https://www.filmicpro.com/apps/apple/filmic-pro/

Overview of Implementation Plan

The rest of this paper will discuss the affordances of FiLMiC Pro for use in GIT

294 online, outlining a target instructional goal and learning objectives as well as

rationale for use.   It will discuss required equipment and budget for implementation of

FiLMiC Pro, as well as a proposed instructional design model, learning format, course

structure, sample assignments and an assessment plan.

Affordances of FiLMiC Pro

The general goal of integrating FiLMiC Pro is to provide online students the opportunity to practice basic hands-on videography skills, such as exposure, selective focus, color temperature, camera shot types and frame rate, much as they would in a studio-based videography course.

Instructional Goal and Learning Objectives

Terminal goal

Students will acquire basic videography skills by using the FiLMiC Pro to capture multiple video clips using proper video capture settings in a variety of different environments.

Objective 1

Students will demonstrate proficiency in controlling selective focus by using FiLMiC Pro to create multiple video clips of the same scene that distinctly demonstrate three different points of focus with 90% accuracy as determined by rubric-based instructor feedback.

Objective 2

Students will demonstrate proficiency in controlling exposure by using FiLMiC Pro to create multiple videos that distinctly demonstrate a properly exposed video clip, an underexposed video clip and an overexposed video clip with 90% accuracy as determined by rubric-based instructor feedback.

Objective 3

Students will demonstrate proficiency in controlling color temperature by using FiLMiC Pro to create multiple video clips that distinctly demonstrate at least three

different color temperature settings with 90% accuracy as determined by rubric-based instructor feedback.

Objective 4

Students will demonstrate proficiency in choosing the proper frame rate and shutter peed by using FiLMiC Pro to create multiple video clips that distinctly demonstrate at least three different frame rate and shutter speed combinations with 90% accuracy as determined by rubric-based instructor feedback.

Objective 5

Students will demonstrate proficiency applying different camera shot types by using FiLMiC Pro to create multiple video clips that distinctly demonstrate at least three different camera shot styles with 90% accuracy as determined by rubric-based instructor feedback.

Rationale for Use

FilMic Pro falls into the category of a lightweight emerging virtual reality technology. According to the 2017 Horizon Report, VR is a growing trend in education that offers many benefits, perhaps the most significant of which is the opportunity for hands-on learning where it might not be otherwise possible (Freeman et. al, 2017). The decision to integrate the FiLMiC Pro into the GIT 294 online curriculum was based on three distinct, yet interrelated, evidence-based learning theories. In their most basic form, these three theories, constructivism, project-based learning, and experiential learning, all support the method of "learning by doing" (Spector, 2016). All three theories maintain that deeper learning occurs when students are creating, building and experiencing their environment (Spector, 2016). The hands-on application of taught concepts is also at the

root of these learning theories, and all three theories affirm that learner motivation is significantly improved by hands-on learning (Orey, 2001). This increased learner focus and motivation also supports deeper learning gain, retention and transfer of skills (Orey, 2001).

FiLMiC Pro is a lightweight VR tool that grants online students access the fundamental principals of constructivism, project-based learning, and experiential learning. This technology allows students to experience hands-on learning, much as they would in a live videography studio. This ability to "experience" the act of capturing video should lead to improved student motivation and deeper understanding of concepts. This thoughtful, purposeful, theory driven integration of a relevant emerging technology meets the National Education Technology Standards (ISTE NETS) for students and educators.

<div align="center">**Plan Specifics**</div>

Equipment

Students will need access to a smartphone or tablet to use FiLMiC Pro. They can download the app from the iTunes store (Apple users) or Google Play (Android users).

Budget

The total cost of FiLMiC Pro is currently $9.99.

Learning Format

GIT 294 online will be conducted in the form of sequential learning modules that will each be one week in length. In accordance with ASU Online course structure, there will be seven modules total for a typical Spring or Fall online course, and six modules for Summer sessions. Concepts will be presented via video recorded lectures and

supplemental related articles. Once students have reviewed the provided learning

materials, they will use FiLMiC Pro to complete assignments that target specific

instructional objectives relating to videography.

<div align="center">**Integration Plan**</div>

Instructional Design Model

The ADDIE model will be used to integrate FiLMiC Pro into the online GIT 294

videography course. First, the needs of the program and students will be analyzed. Next,

specific curricula will be designed and developed to incorporate the use of FiLMiC Pro.

Then, the curricula will be implemented and tested by a field group of five university

students, as well as a connoisseur who will provide a detailed written report of their

recommendations. Lastly, once implemented in an official capacity, FiLMiC Pro

implementation will be evaluated using a variety of assessment methods to include

rubric-based instructor assessment of student created video projects and user-experience

questions completed by GIT 294 students (see *Assessment Plan* section for more
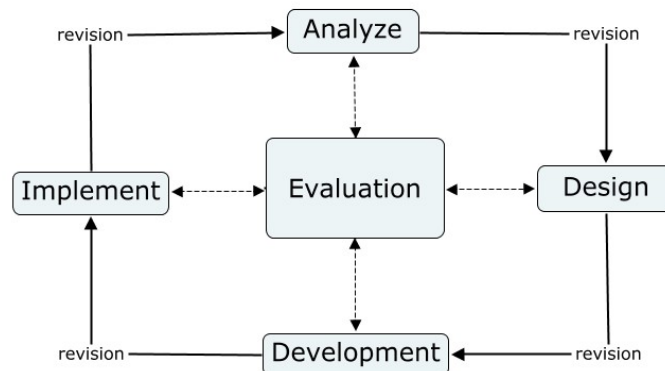
information).

Figure 5. ADDIE graphic. Retrieved from http://educationaltechnology.net/wp-
content/uploads/2014/01/ADDIE_Model_of_Design.jpg

Course Structure

An introduction to the various components of video production will be provided to students in the form of sequential learning modules (which align with the learning objectives) that will each be one week in length. The course will start with a general introductory module (which will include tutorial videos for FiLMiC and download links), and culminate with a final project module. In accordance with the ASU online course structure, there will be seven modules total for a typical Spring or Fall online course, and six modules for Summer sessions. Concepts will be presented via video recorded lectures and supplemental related articles. Once students have reviewed the provided learning materials, they will use FiLMiC Pro to complete assignments that target specific instructional objectives relating to videography. Students will then be asked to upload the resulting video clips to a free Vimeo account and post links to the videos in the assignment submission area. Assignments will be graded by the instructor using a rubric.

There will be one final culminating assignment that challenges students to combine all of the skills they have learned in previous modules to create a short two to three minute video clip of their choosing. Students will not only submit the link to their final video project to the individual assignment submission area, but also upload their video to a group Vimeo page so other students in the class can view it. Students will then be asked to provide constructive feedback to their peers via the comment feature in Vimeo.

Sample Assignments

Sample Assignment 1

Practice controlling selective focus by using FiLMiC Pro to create three video clips of the same scene, all with different points of focus. Please upload the resulting video clips to either Vimeo and post links to the videos in the assignment submission area.

Sample Assignment 2

Practice controlling exposure by using FiLMiC Pro to create three video clips: one that distinctly demonstrates a properly exposed video; one that demonstrates an underexposed video; and one that demonstrates an overexposed video. Please upload the resulting video clips to either Vimeo and post links to the videos in the assignment submission area.

Sample Assignment 3

Practice controlling color temperature by using FiLMiC Pro to create three video clips that distinctly demonstrate three different color temperature settings. Please upload the resulting video clips to either Vimeo and post links to the videos in the assignment submission area.

Sample Assignment 4

Practice choosing the proper frame rate and shutter peed by using FiLMiC Pro to create three video clips that distinctly demonstrate three different frame rate and shutter speed combinations, all properly exposed. Please upload the resulting video clips to either Vimeo and post links to the videos in the assignment submission area.

Sample Assignment 5

Practice applying different camera shot styles by using FiLMiC Pro to create three video clips that distinctly demonstrate three different camera shot styles (i.e. long shot, close-up, over-the-shoulder). Please upload the resulting video clips to either Vimeo and post links to the videos in the assignment submission area.

Assessment Plan

Evaluation of Learning Impact and Attitudes

Formative Assessment

Formative evaluation will be conducted by a field group of five students who will take a shortened three-module version of the full GIT 294 online course. In addition to completing hands-on assignments, students will self-report on their user-experience and take an objective pretest and posttest assessment to determine learning gain with regard to basic videography concepts. A connoisseur will also be recruited to provide a detailed written report of their recommendations for the program.

Summative Assessment

In order to evaluate the success of integrating FiLMiC Pro into a live online videography course, summative evaluation will be conducted. Student video projects will be evaluated by the instructor using a rubric, and students will be asked to respond to several user-experience questions regarding FiLMiC Pro on their course evaluations. Course evaluations will also include questions regarding student attitude towards GIT 294 online in general, as well as questions specific to their opinion of FiLMiC Pro.

Sample Course Evaluation Question

Please select the sentence that best describes your experience in GIT 294 online:

a)   I received ample hands-on experience capturing video that significantly

        expanded my knowledge of videography.

b)   I received moderate hands-on experience capturing video that somewhat

        expanded my knowledge of videography.

c)   I received minimal hands-on experience capturing video that slightly

        expanded my knowledge of videography.

d)   I received no hands-on experience capturing video and my knowledge of

        videography did not increase.

Sample Assignment Rubric

Student Name:			
Technical correctness/Use of FiLMiC Pro	**18-20 Points –** Student used FiLMiC Pro to effectively demonstrate 3 distinct color temperature settings. Different color temperature settings were clearly visually apparent in the color cast of the video.	**15-17 Points –** Student used FiLMiC Pro to effectively demonstrate 3 different color temperature settings. Different color temperature settings were somewhat visually apparent in the color cast of the video.	**0-14 Points –** Student used FiLMiC Pro to demonstrate less than 3 different color temperature settings. Different color temperature settings were not visually apparent in the color cast of the images.
			Total: _____ /20

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