Technology Use Plan: Utilizing Adobe Lightroom Mobile Application in University Level Online Photography Courses

By Tessa Etzioni

EDT 501

Dr. Archambault

Arizona State University

August 10, 2017

ABSTRACT

This is a Technology Integration Plan (TIP) for the Graphic Information Technology program's online photography course, GIT 384. Due to a demonstrated need to provide online students with the same hands-on photography experience that campus-based students receive, use of the Adobe Lightroom mobile application was implemented. This application turns a smartphone or tablet in a (nearly) fully manual camera, allowing online students to 'learn by doing' without having to incur the significant cost of purchasing camera equipment.

INTRODUCTION

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 and photography. GIT 384 is a commercial photography course within the GIT program. GIT 384 teaches students how to operate professional camera equipment and take professional pictures, as well as introducing them to the business aspect of the photography industry. There are two sections of GIT 384: the campus-based section, and the online section. The campus-based GIT 384 class is a studio-based class.

The studio-based section of GIT 384 is a learner-centered, project-based, hands-on, collaborative learning environment with clear standards and authentic tasks. 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 images. Needless to say 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 384 is one of their favorite courses.

The online section of GIT 384 however, is not as highly reputed by students. This is demonstrated by unenthusiastic student course evaluations, lower grades, and higher drop rates as compared to the campus-based section of GIT 384.

Need for Intervention

While the campus-based GIT 384 class is a shining example of project-based learning, unfortunately the online GIT 384 class faces many obstacles that challenge its ability to provide a hands-on learning environment for students. The primary challenge is that online students simply do not have access to the camera equipment necessary to complete the hands-on projects. Unfortunately, in the past, this obstacle has shaped the online GIT 384 class into an asynchronous, lecture-based course with minimal peer interaction, no projects, and objective assessments that focus on rote learning. The resulting learner gain for online students is lower when compared to campus-based students (as measured by objective assessments), as is skill transfer to real-word settings (as measured by student self report). Of course, learner motivation is also low as reflected by course evaluations and higher drop and fail rates. At the end of each semester, 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 course is lacking projects that allow the students to actually 'take pictures.'

Solution

Lack of access to equipment is perhaps the biggest hurdle to overcome in online photography courses. The university can simply not expect college students to invest in professional quality camera equipment (which can cost upwards of $700) for one class. The challenge remains how to still provide these students with the hands-on photography experience that the campus-based students receive.

One solution is to implement technology that simulates the experience of shooting with a DSLR 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 if need be.

TECHNOLOGY

Lightroom Mobile

In 2015, Adobe released a mobile application version of Lightroom that basically turns a smartphone or tablet into a (nearly) fully manual, high definition DSLR camera. In Pro mode, users can control exposure (using shutter speed), white balance and depth of field.

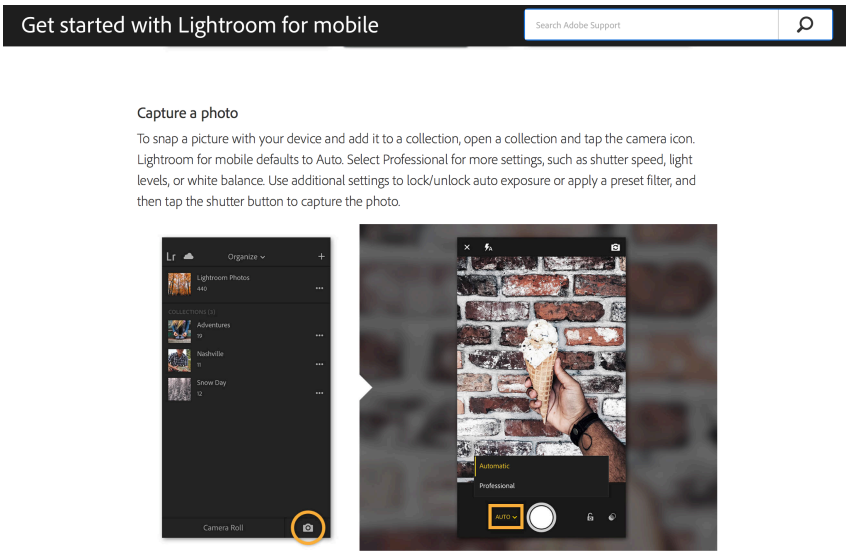


Image retrieved from https://helpx.adobe.com/lightroom/how-to/lightroom-mobile.html

This application offers online photography students a cost effective alternative to investing in expensive camera equipment, and instructors the opportunity to implement hands-on, project-based curriculum that mimics a studio-based format. Students in the GIT program are already required to have the Adobe Creative Cloud, and the Lightroom mobile application comes *free* with that package. For students who do not already subscribe to the Adobe Creative Cloud, the fee for the mobile app is $9.99/mo. The Adobe Lightroom mobile app can be downloaded at iTunes or Google Play.

RATIONALE

The decision to integrate Adobe Lightroom mobile into the GIT 384 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).

Adobe Lightroom mobile is a 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 photography studio. This ability to 'experience' the act of photographing 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.

IMPLEMENTATION

Instructional Design Model

The ADDIE model will be used to integrate Adobe Lightroom mobile into the online GIT 384 photography 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 Lightroom mobile. Then, the curricula will be implemented and tested by a field group of five students, as well as a connoisseur who will provide a detailed written report of their recommendations. Lastly, it will be evaluated using a variety of assessment methods to include short essay questions and user-experience questions completed by actual ASU students (see Evaluation Methods section for more information).

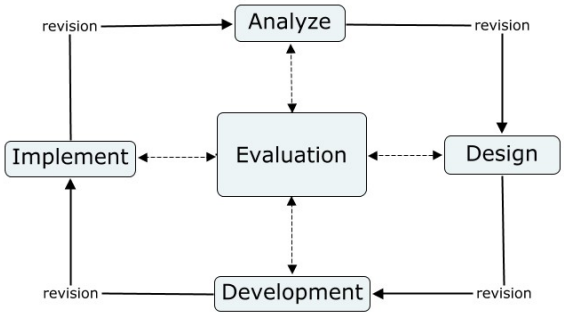


Image retrieved from http://educationaltechnology.net/wp-content/uploads/2014/01/ADDIE_Model_of_Design.jpg

Goals & Objectives

The general goal of integrating Lightroom mobile is to provide online students the opportunity to practice basic hands-on photography skills, such as exposure, depth of field, and white balance, much as they would in a studio-based photography course. Specific examples of how to accomplish this are provided in the Sample Assignments section following the list of goals and objectives below.

Terminal goal:

Students will acquire the basic photographic skills by using Lightroom mobile to practice taking photographs with a variety of settings.

Objective 1: Students will demonstrate proficiency in controlling depth of field by using Lightroom mobile to create multiple images that distinctly demonstrate shallow depth of field and deep depth of field with 90% accuracy as determined by rubric-based instructor feedback.

Objective 2: Students will demonstrate proficiency in controlling exposure by using Lightroom mobile to create multiple images that distinctly demonstrate a properly exposed image, and underexposed image and an overexposed image with 90% accuracy as determined by rubric-based instructor feedback.

Objective 3: Students will demonstrate proficiency in controlling white balance by using Lightroom mobile to create multiple images that distinctly demonstrate at least three different white balance settings with 90% accuracy as determined by rubric-based instructor feedback.

Sample Assignments

Sample Assignment 1: Depth of Field
The goal of this assignment is for students to demonstrate depth of field. Students should recall from our earlier lectures that depth of field is where the main item in the photograph is in focus, but the rest of the scene is out of focus.

Image retrieved from: http://frasesdeesfuerzo.com/wp-content/uploads/2017/02/foto-de-mariposas-bonitas-para-portada-768x576.jpg

Students will take 2 photographs to demonstrate depth of field. The first photograph should demonstrate shallow depth of field; the second image will demonstrate deeper depth of field. This will be accomplished using Lightroom Mobile. Students should be in the Pro setting. Students will focus on their main subject/object by tapping the screen where the object is. The closer the object is to the camera, and the further away everything else is, the more pronounced the shallow depth of field will be (shallow depth of field). Conversely, the farther the object is to the camera, the more the rest of the scene will be in focus (deep depth of field).

Students should be creative – they should try to focus on something interesting where the out of focus background will add to the overall

success of the photo. For example, a bowl of apples outside on a table with trees way behind it will give a nice soft green background to contrast with the red apples. A portrait of someone could work – where the background is soft enough to not distract from the person.

Student work will be evaluated using the following rubric:

Student Name:			
Technical correctness/Use of Lightroom mobile	**18-20 Points –** Student used Lightroom Mobile to effectively demonstrate depth of field (Pro setting, appropriate subject to camera distance).	**15-17 Points –** Student used Lightroom Mobile to effectively demonstrate depth of field (Pro setting, appropriate subject to camera distance).	**0-14 Points –** Student did not use Lightroom Mobile to effectively demonstrate depth of field (did not use Pro setting, inappropriate subject to camera distance).
Creativity	**18-20 Points –** Images were creative and well composed.	**15-17 Points –** Images were somewhat creative and composition was acceptable.	**0-14 Points –** Images were not creative and composition was unacceptable.

			Total: ____ /40

Sample Assignment 2: Exposure

Students should recall from a previous lecture that the two mechanism of the camera that control exposure are the aperture (f-stop) and the shutter. An image that is properly exposed will require the right combination of settings. The goal of this assignment is to practice using different exposure settings to control the exposure of a photograph. Students will create 3 images of the same scene, each demonstrating a different exposure.

Image retrieved from http://www.slrphotographyguide.com/camera/settings/images/exposure-examples.jpg

The exposure will be controlled using the shutter feature of the Lightroom mobile app in Pro mode (it may look a bit different on an android device). First, students should launch Lightroom on their phone, then click on the camera icon on the bottom right (not the camera roll).

Shot 1: Students should set the Lightroom camera to 'auto' mode and take a photo that is properly exposed.

Shot 2: Students should adjust the shutter to create a photo that is overexposed.

Shot 3: Students should adjust the shutter to create a photo that is underexposed.

Student work will be evaluated using the following rubric:

Student Name:			
Technical correctness/Use of Lightroom mobile	**18-20 Points –** Student used Lightroom Mobile to effectively demonstrate 3 distinct exposure settings. Different exposures were clearly visually apparent in the final images.	**15-17 Points –** Student used Lightroom Mobile to effectively demonstrate 3 exposure settings. Different exposures were somewhat visually apparent in the final images.	**0-14 Points –** Student did not effectively demonstrate 3 distinct exposure settings. Different exposures were not visually apparent and the final images looked the same.

			Total: ____ /20

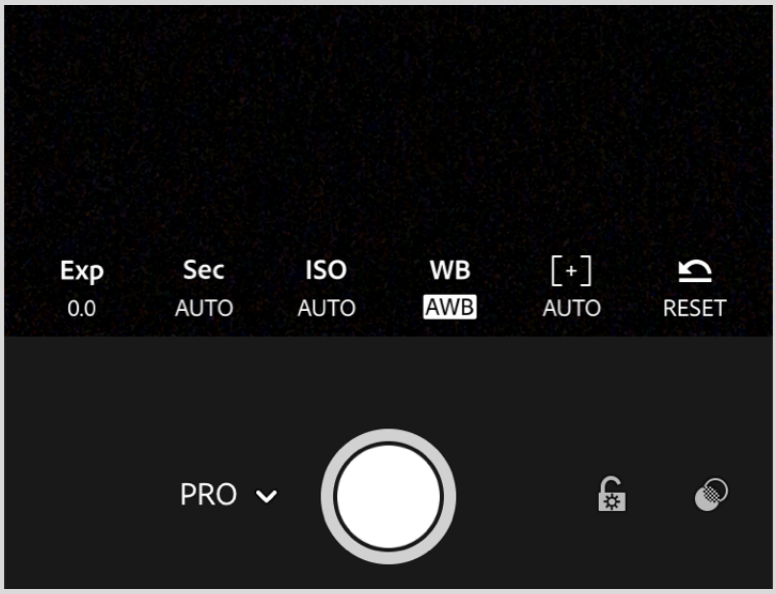
Sample Assignment 3: White Balance

Students should recall from a previous lecture that white balance refers to the color temperature of light. In a photograph, this manifests itself in different color casts, or hues, across the image.

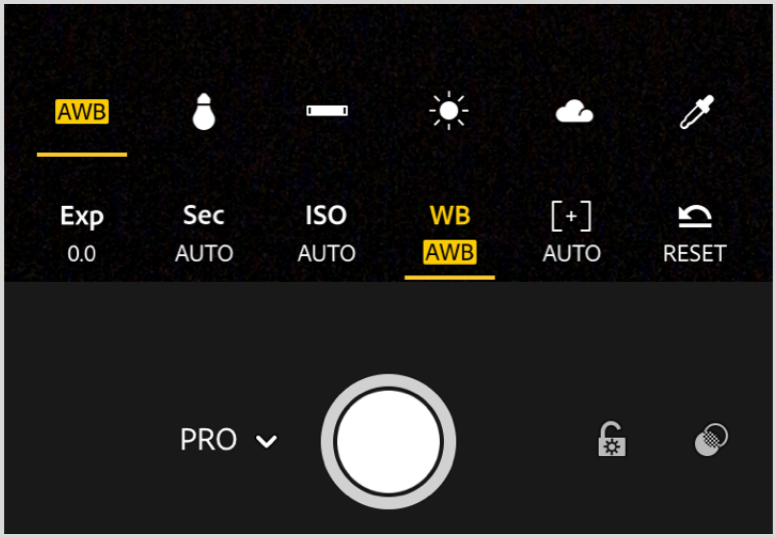
Image retrieved form http://antzfxway.com/wp-content/uploads/2015/03/White-Balance-Examples.jpg

For this assignment, students will create three images with different white

balance settings. First, students should launch Lightroom on their phone, then click on the camera icon on the bottom right (not the camera roll). Students should then select Pro setting (it may look a little different on Android) and select white balance (WB).



Students will choose a scene to photograph. They will have the following choices of WB:



Shot 1: Students should take their first shot with automatic white balance (AWB).

Shot 2: Students should take their second shot with a WB setting of their choosing.

Shot 3: Students should take their third shot with a WB setting of their choosing.

Students will end up with 3 different white balance shots (of the same scene).

Student work will be evaluated using the following rubric:

Student Name:			
Technical correctness/Use of Lightroom mobile	**18-20 Points –** Student used Lightroom Mobile to effectively demonstrate 3 distinct white balance settings. Different white balance settings were clearly visually apparent in the color cast of the images.	**15-17 Points –** Student used Lightroom Mobile to effectively demonstrate 3 different white balance settings. Different white balance settings were somewhat visually apparent in the color cast of the images.	**0-14 Points –** Student used Lightroom Mobile to demonstrate less than 3 different white balance settings. Different white balance settings were not visually apparent in the color cast of the images.
			Total: ____ /20

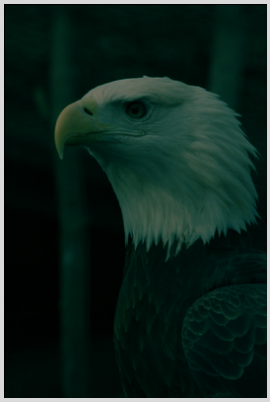
Evaluation Methods

Formative evaluation will be conducted by a field group of five students who will self-report on their user-experience and take an objective assessment to test learning gain.

A connoisseur will also be recruited to provide a detailed written report of their recommendations for the program. In order to evaluate the success of integrating Lightroom mobile into a live online photography course, summative evaluation will be conducted. Students will be asked to take to a short essay, scenario-based exam, as well as to respond to several user-experience questions regarding Lightroom mobile. The course evaluations of the students who participated in the sections of GIT 384 that incorporated Lightroom mobile will also be compared to previous course evaluations from students who did not use Lightroom mobile.

Sample short essay question

Consider the following image:



What would you do to correct the photograph? What camera settings would you change and why? Please be specific.

Sample user-experience question

Please select the sentence that best describes your experience in GIT 384 online:

a) I received ample hands-on experience taking photographs that significantly expanded my knowledge of the photographic process.
b) I received moderate hands-on experience taking photographs that

somewhat expanded my knowledge of the photographic process.

c) I received minimal hands-on experience taking photographs that slightly expanded my knowledge of the photographic process.
d) I received no hands-on experience taking photographs and my knowledge of the photographic process did not increase.

The results of all evaluations will be used to modify the technology integration plan to improve it for future student use.

Cost

Adobe Lightroom mobile requires a $9.99/mo subscription to the Adobe Creative Cloud Photography plan, which includes Lightroom for desktop, mobile, and web plus the latest version of Photoshop CC. For ASU GIT students, the Lightroom Mobile app comes **FREE** with their Adobe Creative Cloud Subscription (already required by the GIT program).

Strengths & Limitations

Strengths of utilizing Lightroom mobile for online photography courses include cost effectiveness, accessibility, and ease of use. Possible limitations include cost (it is one of the more expensive photography apps if you do not already subscribe to Adobe Creative Cloud), as well as the lack of an aperture setting control. Lightroom mobile does to go into true manual mode due to a lack of aperture control. Unfortunately this is the case for all other photography mobile apps also, so it appears to be a market-wide limitation for the time being.

Additional Resources & Alternatives

To learn more about Lightroom mobile visit adobe.com. For a series of video tutorials on how to use Lightroom mobile, visit helpx.adobe.com. If Lightroom mobile is not a good

option for your classroom, below is a list of photography apps available that are comparable to Lightroom mobile and may offer a more cost effective solution for students that do not already subscribe to Adobe Creative Cloud.

Manual for iPhone / $3.99

DSLR Camera Pro / $2.99

Footej Camera / Free

Manual Camera / $2.99

Open Camera / Free

Snap Camera HDR / $1.99

REFERENCES

Text Sources

ASU Online. (2017). Retrieved August 6, 2017, from http://asuonline.asu.edu/

New American University. (2015). Retrieved August 4, 2017, from https://newamericanuniversity.asu.edu/

Orey, M.(Ed.). (2001). Emerging perspectives on learning, teaching, and technology. Retrieved August 5, 2017, from http://epltt.coe.uga.edu/

Spector, J. Michael. (2016). *Foundations of Educational Technology: integrative approaches and interdisciplinary perspectives.* Routledge: New York.

US News & World Report. (2017). Retrieved August 6, 2017, from https://www.usnews.com/

Images

AntzFx, A., & Fullfx, A. (n.d.). AntzFxWay.com. Retrieved August 10, 2017, from http://antzfxway.com/wp-content/uploads/2015/03/White-Balance-Examples.jpg

Frasesdeesfuerzo.com. (n.d.). Retrieved August 10, 2017, from http://frasesdeesfuerzo.com/wp-content/uploads/2017/02/foto-de-mariposas-bonitas-para-portada-768x576.jpg

Get started with Lightroom for mobile. (n.d.). Retrieved August 10, 2017, from https://helpx.adobe.com/lightroom/how-to/lightroom-mobile.html

Tips And Tutorials. (n.d.). Retrieved August 10, 2017, from http://www.slrphotographyguide.com/camera/settings/images/exposure-examples.jpg