

Innovations in Teaching Using Technology Grant – 2018

Proposal Title:

Evaluating Media Production Setups and Experiences in 360/VR

Courses / Curriculum Affected:

Student production projects and coursework in Radio-TV-Film media production courses including Television Production 1, Television Production 2, Live Event TV & Video Production, TV Documentary Production, Film Production 1, Film Production 2, Advanced Film Production.

Applicant:

Christopher J. Winkler, Assistant Professor, Department of Radio-TV-Film

Objectives:

INNOVATION:

360/VR cameras have been gaining in popularity in recent years for their ability to create immersive experiences for users. Media makers have adopted 360/VR as a new medium for storytelling in narrative and documentary work. The ability to transport an audience to a location in a specific time (photo) or span of time (video), with full ability to “look around” in the 360-degree space, eliminates the frame of reference previously reserved by the camera operator, to obscure and reveal reality as he or she saw fit. There is no hiding anything in 360 without careful planning and consideration. As such, 360/VR is a perfect mechanism for introducing people to new experiences and environments without physically going anywhere, and also to bring people virtually to join in an experience, whether in realtime through live streaming technology or delayed via a recording.

In first level film and television production courses in the Radio-TV-Film curricula, students experience what it’s like to be in a TV studio or on a film set in a heavily controlled classroom experience. Many students have never seen a studio production live in progress, from the studio, nor an active film set in-person. Sets, lights, cameras, actors, crew, and various moving parts all come together in the making of the scene as seen on-camera, for the audience at home. But the amount of activity behind the camera is just as impressive, if not more so, combined with the choreographed ballet of people and things that make everything on-screen seem so effortless. By adding a 360/VR camera to the production space, viewers achieve a “fly-on-the-wall” view of this magic, and with people and action truly occurring all around, those viewers can follow whatever aspect of the presentation that interests them... and then re-watch the same span of time and observe something completely different on the other side of the room... and possibly even see how those two completely different storylines intersect or relate. With repeatable playback, viewing 360/VR in this environment takes on a “choose your own adventure” presentation, but this can also be directed specifically through pre-viewing instruction and on-screen cues added in editing, if it is not a live presentation. Through this medium, students can experience what it’s like in this type of environment before

they are expected to participate in it, and instructors can point out specific things to look for as they gain familiarity with that environment.

In August 2018, I was able to produce a first attempt at this experiential presentation using a 360/VR camera, specifically intended for the education of students in Television Production 1. With the camera positioned in the middle of the studio floor, I directed students in the production of a sample mini-newscast which involved multiple “moving parts” including a Floor Manager, camera operators, and news talent. With the audio recording also obtained via the camera, viewers can both see and hear what occurs on the studio floor during this production, from perspectives that could be from the talent’s point of view or the Floor Manager’s point of view, depending on view orientation. In the course, and given the size of the studio, it is impossible to stage a full and accurate production with a class of 18 students in the space at the same time. 360/VR enables the students to see it all, and see it over and over again, as if they were there.

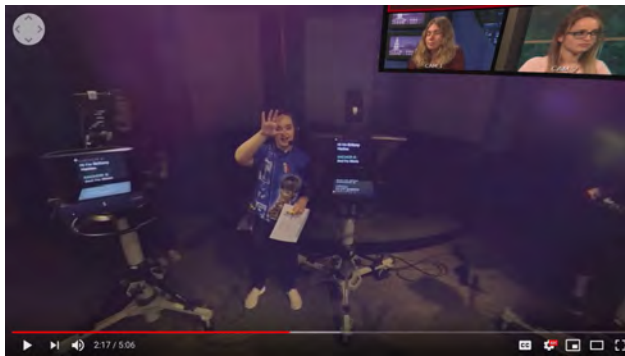
This presentation has been made available to the public, and is being specifically shared with current students in the Television Production 1 course. To watch the video, go to <http://profwinkler.net/basicnewscastdemo/> and click on the first thumbnail/image link.



Basic TV Newscast – Studio Floor 360 / VR 4K

This presentation also includes superimposed 2D-HD video content, recorded simultaneously and added in editing. Screenshots appearing below and on the following pages show various “views” in the finished 360-degree space.





Building on the success of this presentation, through this grant I am seeking to obtain 360/VR cameras to record other student production activities in both studio and field production environments, to be used as introductory examples for students in those related courses. The 360/VR camera used for this recording was obtained via an internal CCCA STORI grant I was individually awarded in the 2017-2018 academic year; the RTF department does not have any 360/VR cameras in its inventory.

Pushing this concept even further, as an instructor I want to see what my students are doing out in the field when they leave the controlled confines of the studio and encounter far more variables in real-world production environments. Currently, students draw sketches of their planned production setups including camera placement, lighting plot, character/actor blocking, audio capture/orientation and physical placement of crew and equipment off-camera. This plan is approved in pre-production, and students return from their field production with the captured media – that portion of the world conveniently obscured by the camera framing – and stories of how the production went, how they changed their plans to react to unanticipated variables, and a few behind-the-scenes photos that might show some of the seemingly organized chaos. It would be far more advantageous to me as the instructor to be able to visit the set and see these setups and activities for myself, but with multiple courses, groups, locations, and scheduling, this is impossible. However, with a 360/VR camera, students could take pictures and/or video of the location and their setups, and afterwards I could review the actual placements of all equipment, position of characters/actors, position of set pieces, and even observe and criticize seemingly minor issues that could have major implications – for example - for actor performance (the crew member with the cup of coffee shouldn't be standing over there, right in the actor's field of view); safety (that extension cord shouldn't be spanning the threshold of the doorway unless you tape it down); visual staging (you had room to move the chair a few more feet away from the wall, and move the camera back some more, to get even shallower depth-of-field in the shot). These are things students

typically don't realize until they're pointed out... and don't record when they frame the behind-the-scenes photos and video! This is much more troublesome to hide in 360/VR.

Going even one step further... with current 360/VR camera technology allowing for live streaming via connection to a personal smartphone and WiFi/data access, students can live-stream in 360 from their shooting locations for realtime instructor feedback or check-in and virtual presence. Obviously there are more variables and challenges in this approach (network connectivity and signal strength, smartphone compatibility, delays, etc.) but it's entirely possible.

SCALABILITY:

While principally conceived for the studio-based TV Production 1 course, 360/VR can be used in any production course to both 1) introduce students to new environments and operations "on set" – wherever that set may be, using a pre-recorded "demo" production; and, 2) allow instructors to virtually travel to locations and sets that he or she would not be able to physically visit given scheduling restrictions, to review student work on equipment setups and on-set operations/configurations in a post-occurrence (recorded) mode, or live in realtime. With both of these capabilities, instructors can create lessons that put students in these virtual environments, with a range of objectives... from "can you spot the safety issue?" to "are all of the lights set up properly?" to "can you identify who's who on set based on what they're doing or where they're standing?" to so many other possibilities for dynamic Q&A, and learning.

ADAPTABILITY:

This technology is already being used to create immersive experiences for audiences around the world, with applications for education still being developed. Any environment that students will encounter in the real world, whether as part of their coursework or in their careers, can benefit from initial experience in 360/VR. The ability to actually look around in the space and see different views not obscured by the camera frame is the biggest difference between this technology and a fixed point-of-view camera recording. The type of technology-assisted educational activities being pursued by this proposal could be adapted to work in a variety of disciplines.

Description of the Specific Innovation:

While the range of available 360/VR cameras and capabilities is wide, the specific make and model being sought for use via this grant application is the **Insta360 ONE** for its ease of use, versatility, and relative low cost. The camera can operate in a standalone mode to take pictures and video that is saved on a removable micro-SD memory card. In this mode, it can be set up in the portable mini stand (which doubles as the case/cover) or affixed to a typical light stand or tripod. In an alternate configuration, the camera can be directly connected to an iPhone (natively) or Android phone (with an adapter) and used to save pictures and video to the phone or use in conjunction with the phone to live-stream video on YouTube, Facebook, Periscope, and other social media platforms. Current retail pricing for the camera is \$300. The manufacturer provides free software (Insta360Studio) for converting images and video from its proprietary formatting to more common and shareable formats.



Assistance Needed From IRT Training & Instructional Support:

There is no specific need for training/support from IRT for the camera itself through this grant, but the software would need to be installed for use on faculty computers and perhaps in select labs or machines in Bozorth Hall (iMacs). I have been able to run the free software on my University-provided MacBook Pro without any issue, so operational and support impact would likely be minimal. At present I am not aware of 360 video or 360 still photo support native in Blackboard, so 3rd party applications such as VLC Media Player and online platforms would be used for final media viewing and hosting. I have purchased my own Insta360 ONE and have concluded that it is extremely user-friendly and easy to use, and the software is very simple as well. I would be able to instruct others in the operational workflow.

Plans for Evaluating and Sustaining the Innovation:

I plan on continuing to develop educational learning presentations using my existing 360/VR camera equipment, but additional cameras will allow other faculty to develop educational materials, and allow for students and student groups to take cameras out into the field for use in documenting/recording/streaming their activities on sets and in production environments. With enough cameras to warrant simultaneous usage in multiple production groups in a class, the ability to evaluate student performance in the field would be greatly improved, and a 360/VR review criteria would be added as part of student evaluations of project work in classes where this technology can be effectively deployed. Student learning is already a component of academic assessment in our programs and curricula, and students could be polled as to the perceived effectiveness of the specific 360/VR content as part of class lessons and educational materials and assessment. As a new medium that continues to gain widespread, mainstream acceptance, it is unlike that 360/VR technology is a temporary fad. In the future, more cameras could be obtained to broaden the usability in multiple classes, especially as the quality of this camera technology improves and relative cost decreases.

Budget:

The total budget request for this proposal is **\$1880** which would fund the purchase of **4** complete camera kits @ \$470 each. Each kit would consist of the following items with estimated pricing:

- \$300 Insta360 ONE camera
- \$35 64GB microSDXC U3 Class 10 removable media card w/ SD card adapter
- \$40 Adjustable mounting arm/clamp for versatile camera mounting
- \$65 Compact portable 6-ft stand with camera mount and/or ball head mount
- \$30 Transport case or protective bag