Using 360-Video for Teaching Performance Reflection

OP McCubbins
Texas A&M University
242 Agricultural and Life Sciences Building
College Station, TX 77843
opmcc@tamu.edu

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Introduction

Teacher education programs employ several methods in their quest to develop effective teachers who are reflective practitioners. One such method is the use of microteaching, a concept introduced in the 1960s by the Stanford University teacher education program (Kallenbach & Gall, 1969). The specific format and application of microteaching in teacher education programs varies but has been shown to aid in the development of expertise and minimizes the risk of failure in a real classroom (Wahba, 1999). Such results are not achieved through microteaching alone, but through reflection on the microteaching experience. For teacher development, reflection is essential (Schon, 1983). Recording microteaching provides teachers the ability to critically review their performance to identify strengths and areas for improvement. Additionally, the recording allows teachers to "more effectively see their practice" (Tripp & Rich, 2012, p. 676), is an effective method for the improvement of teaching skills (Penny & Coe, 2004), and allows preservice teachers the opportunity to make thoughtful decisions for continuous improvement and the development of effective teaching strategies (Ismail, 2011). Additionally, using recordings assists in developing teachers' abilities to "reflect in practice" (p. 679) during future microteaching/teaching experiences (Tripp & Rich, 2012).

Specific software and hardware solutions have been developed for classroom video to streamline teacher coaching and reflection. One such platform is EDTHENA and operates on subscription/licensing fees. Additionally, a video-capable device (i.e., smartphone/tablet) is needed to capture the video. Once captured, the video is uploaded into the system for feedback from others or oneself. Another solution is Swivl, which requires a tablet to be placed into a cradle that tracks and rotates a transmitter worn by the teacher (Franklin et al., 2018). The resulting video is uploaded to the Swivl platform for reflection and analysis by the teacher or others. However, each of these solutions have attached costs; which was the largest barrier for adoption in the teacher education program at Tennessee Technological University (TTU). Video capture technology has advanced rapidly in recent years. The two platforms outlined above still rely on standard video capabilities. In recent years, 360-degree video cameras have become commercially available. Recording in 360-degree video captures the entire environment and allows an individual to see what standard video devices don't/can't capture. Could 360-degree cameras be useful for facilitating teacher reflection?

How it Works

A 360Fly camera was mounted to a tripod and set up in the middle of the classroom for microteachings in a methods of teaching course. The 360Fly smartphone application was installed on the instructor's smartphone and was used to start and stop the recording for each student. Immediately after the class, the instructor uploaded all captured content to a computer and prepared it for upload to a private YouTube channel created for the class. Each student's microteaching was uploaded as an individual video. Students were notified once the videos were uploaded so they could review and begin working on their reflection. Students were encouraged to watch the video through and adjust the orientation of the video if warranted. Students have the ability to click and drag or use directional arrows to change the orientation of the video.

Results to Date

Students in the methods of teaching course at Tennessee Tech had positive reactions to the 360 videos. Several mentioned the benefit of being able to adjust the video orientation to identify any potential issues in areas of the learning environment not traditionally captured in standard recordings. This navigation ability allowed them to see all areas and made them aware of areas they should monitor more via proximity while teaching. Anecdotally, a couple of students noted that adjusting the orientation when viewing recorded group activities was slightly cumbersome but was worth the extra effort.

Additionally, several students mentioned that they could see this technology being implemented in other ways for their future programs. For instance, one student noted the possibility of capturing virtual field trips in 360-video for students to explore. Another mentioned using a 360-video camera for identifying different building layouts used in agriculture (swine buildings, chicken houses, etc.). They discussed the possibility of developing a YouTube playlist with several 360-videos to be utilized in their future classes.

Future Plans/Advice to Others

The 360-degree recordings will be implemented in methods courses at Texas A&M in the Spring of 2019. Faculty members in the teacher preparation program plan to develop a study on the impact of microteaching capture in 360-video versus standard video. Additionally, the authors are planning a project focused on developing immersive experiences in 360-video within various sectors of the agriculture industry for use in secondary and post-secondary programs. For those interested in using a 360-video camera for microteaching capture, it is recommended that one invests time learning how to operate the camera and software prior to implementation.

Cost/Resources Needed

The 360Fly camera utilized in this instance cost $499. The tripod was already available, but one could be purchased for $30 or less from any major retailer. The instructor used a personal smartphone for camera control. A tablet would also work to control the camera. If neither a smartphone or a tablet is accessible, that cost would need to be factored in as well. Creating a private YouTube is free of charge but does require a small investment of an instructor's time to initialize. Time to upload the 360-degree videos should be factored in as well.

References

Franklin, R. K., O'Neill, M. J., Walters, K. S., Livingston, B., Lineberger, M. B., Putman, C., Yarborough, R., & Karges-Bone, L. (2018). Using Swivl robotic technology in teacher education preparation: A pilot study. *TechTrends, 62*(2), 184–189. doi: 10.1007/s11528-017-0246-5

Ismail, S. A. A. (2011). Student teachers' microteaching experiences in a preservice English teacher education program. *Journal of Language Teaching and Research*, *2*(5), 1043–1051. doi:10.4304/jltr.2.5.1043-1051

Kallenbach, W. W., & Gall, M. D. (2018). Microteaching versus conventional methods in training elementary intern teachers, 63(3), 136–141. [FINISH CITATION]

Penny, A. R. & Coe, R. (2004). Effectiveness of consultation on student ratings feedback: a meta-analysis. *Review of Educational Research, 74*(2), 215–253. doi: 10.3102/00346543074002215

Schön, D. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.

Tripp, T., & Rich, P. (2012). Using video to analyze one's own teaching. *British Journal of Educational Technology, 43*(4), 678–704. doi:10.1111/j.1467-8535.2011.01234.x

Wahba, E. H. (1999). Microteaching. *English Teaching Forum, 37*(4), 1–2. Retrieved from https://americanenglish.state.gov/files/ae/resource_files/03-41-4-h.pdf