Innovative Idea Poster

Swivl™ Video Capture Technology Package as a Reflective Tool for Pre-Service Teachers

Keith J. Frost
Dr. John Rayfield
Texas Tech University

Department of Agricultural Education and Communications
Box 42131
Texas Tech University
Lubbock, TX 79409-2131
(806) 742-2816
Keith.Frost@ttu.edu

Swivl™ Video Capture Technology Package as a Reflective Tool for Pre-Service Teachers

Introduction – Need for Innovation

Learning to teach is a challenging, multidimensional, and complex process (Freese, 2006). New teachers are stepping into a profession driven by high stakes testing and standards-based curriculum. Teacher evaluation is increasingly derived using elements of effective instruction utilizing complex rubrics (Danielson, 2007). Additionally, student outcomes are closely examined (Ward & McCotter, 2004) and even included in the summative evaluation process of teachers. Freese (2006) suggested the importance of pre-service teachers identifying inconsistencies between what they believe about teaching (and their own teaching) and actual practice can help minimize this cognitive disconnect. Baecher and Kung (2011) posited well-developed field experiences that support reflection and align with current industry practices encourages a more active role in self- and subsequent formal evaluations. Lambert, Sorenson, and Elliot (2014) concluded that there is a difference in pre-service teachers' written and oral reflections and suggested that the interactive nature of the oral interview prompted detail. [University] has implemented a program designed to create interactive reflective experiences that are based on comparing the teaching practices of pre-service teachers and cooperating teaching professionals against a provided rubric of effective instruction used in [State].

Methodology – How it works

Swivl is a technology package that includes a mobile device video capture application (app), a web-based "cloud" for data storage and editing, and a motion following "robot". Utilization of the product elements can be independent of each other and the use of any one element does not require use of the other two; however, the information included in this study is based on a utilization of all three elements.

The app is available for most mobile operating systems and can be configured to record and store on the mobile device or record directly to the cloud. The free "cloud" accounts provide the following: unlimited storage, private link sharing, use of the editing software and multimedia player, exporting of source content, and the ability to join groups and comment on videos of users with "Pro" accounts which are available for a nominal fee that adds features including private sharing, analytics, two-way commenting, export of edited materials, embedding, and the creation of integrated videos and slides for presentations. A one year subscription to a "Pro" account is part of the cost when purchasing a Swivl Robot.

The "Robot" is the name given to a movable base system that is designed to hold a personal electronic device (tablet or phone) as a platform for recording material. The device rests in an angled cradle and connects to the base via a patch cable. The base is weighted for stability and can easily be placed on a flat surface but can also be mounted to a standard camera tripod. In addition to the base, there is a small marker device that is worn by the presenter creating a line-of-sight infrared connection to the base and allows the base to track the presenters' movement within the frame of the video and serves as the microphone to the recording for clear audio to accompany the video.

The Swivl technology package was utilized as part of a course designed to introduce and reinforce elements of effective instruction and professionalism in education as well as introduce

modern (rubric based) evaluation systems to pre-service teachers the semester before their full-time student teaching experience. Following the introduction of technology, pre-service teachers were asked to make personal introductory videos with primary function to begin to interface with the technology. As the term progressed students were tasked with capturing and uploading videos of themselves and their cooperating teachers. These videos were then used to analyze specific areas of effective instruction selected from an evaluation rubric commonly used in [State] teacher evaluation processes. An evaluation structure and process was provided during instruction. Interaction and prompting for depth was accomplished through questioning and commenting on the videos by the instructor and other students.

Results to Date – Implications

Three summative assessments provided understanding of effective instruction evaluation and reflective practice. The first was based on a video played in class allowing students to reference and comment on evaluation of a common. Subsequent evaluations were based on lessons recorded and uploaded of their cooperating teacher and included specific comments, made by the evaluator, relating to key positive or negative points observed and written critique, and evaluation of the lessons. Additional comments and questions were posted by the instructor and other students stimulate conversation and reflection on the evaluations. An increase in evidence of evaluation and reflection was formatively observed by the instructor. There was a difference between the first (N = 15, M = 23.07 SD = 6.89) and final (M = 33.53 SD = 4.10) lesson evaluations suggesting growth in written evaluation.

Costs – Resources Needed

There were 16 students enrolled in the course where the technology was deployed and each was assessed a course technology fee of $750. From these fees sixteen iPad Air-2 tablets were purchased at a cost of $375 (each) and issued to the students for permanent ownership. The remainder of the fee monies were used to purchase sixteen robotic bases at $500 each that were issued for use throughout the year and will be returned to the university at the end of the second semester to be re-issued to the 2017-2018 cohort. New bases will be purchased for the biennium beginning in the Fall of 2018. The cost of the bases included a one year “Pro” subscription to the cloud. Subscriptions during non-base ordering years will cost $50.00 per year.

Future Plans - Advice to Others

During their spring student teaching field experience, students will be required continue the reflection process used during the fall semester. ‘Private’ groups allow for remote communication with supervising instructors for input, feedback, and advice. An exploratory study will be conducted to measure any benefits helping pre-service teachers evaluate their own teaching practices and to identify benefits to supervising instructors in supervising pre-service teachers. Based on the ease of use and the growth shown in the fall class the use of the Swivl package will continue to be used within the agricultural education courses at [University]. The department is recommending its use to teacher training departments within [University] and at other institutions to help foster reflection and a more accurate understanding of how individual teaching is reflective of effective instruction. When implementing a similar program, introducing the technology early and allowing sufficient opportunities for familiarization will ease the transition of utilizing the technology in the field and under the additional pressures of summative evaluations.

References

Baecher, L., & Kung, S.-C. (2011). Jumpstarting novice teachers' ability to analyze classroom Video: Affordances of an Online Workshop. *Journal of Digital Learning in Teacher Education*, *28*(February 2015), 16–26. doi:10.1080/21532974.2011.10784676

Danielson, C. (2007). *Enhancing professional practice: A framework for teaching*. (2nd ed.). Alexandria, Va.: Association for Supervision and Curriculum Development. http://public.eblib.com/choice/publicfullrecord.aspx?p=289654

Freese, A. R. (2006). Reframing one's teaching: Discovering our teacher selves through reflection and inquiry. *Teaching and Teacher Education*, *22*(1), 100–119. doi:10.1016/j.tate.2005.07.003

Lambert, M. D., Sorensen, T. J., & Elliott, K. M. (2014). A Comparison and analysis of preservice teachers' oral and written reflections. *Journal of Agricultural Education*, *55*(4), 85-99. doi:10.5032/jae.2014.04085

Ward, J. R., & McCotter, S. S. (2004). Reflection as a visible outcome for preservice teachers. *Teaching and Teacher Education*, *20*(3), 243–257. doi:10.1016/j.tate.2004.02.004