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## Improving Reflection during Student Teaching with Technology

### Abstract

The process of tapping into the power of reflection is a difficult process for many student teachers to accomplish. Multiple factors hinder the process of reflection in novice teachers. Video recorded lessons provide a contextualized focus for reflection on specific pedagogical skills. This study conducted by an undergraduate student during the student internship demonstrates the value of utilized video recorded lesson to assist in the development of one student's journey toward becoming a reflective practitioner through the use of video recorded teaching episodes.

## **Improving Reflection during Student Teaching with Technology**

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**Kansas State University**

### **Abstract**

The process of tapping into the power of reflection is a difficult process for many student teachers to accomplish. Multiple factors hinder the process of reflection in novice teachers. Video recorded lessons provide a contextualized focus for reflection on specific pedagogical skills. This study conducted by an undergraduate student during the student internship demonstrates the value of utilized video recorded lesson to assist in the development of one student's journey toward becoming a reflective practitioner through the use of video recorded teaching episodes.

**Strand: Research in Teacher Education; Supervision and Educational Technology**

### **INTRODUCTION (by a student teacher)**

How can I better improve my practice? Most teachers asked themselves this question at one point or another during their career. As a student teacher, I found I was asking myself this question multiple times each day. Whether it be after a lesson that didn't go as planned, during my lunch, or during the ride home, the overwhelming idea that I needed to improve was always present.

Through my semester-long internship, I became aware of just how powerful reflective practice can be. When you reflect on what has occurred and consequently change your actions, you will experience a different outcome (Lupinski, Jenkins, Beard, and Jones, 2012). A former classroom teacher once told me "teachers have to make hundreds of decisions throughout a typical school day." Through reflection was happening multiple times throughout the day, I found I was omitting many elements of

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my teaching practice during the reflection process. Whether it be questioning, how I addressed a specific student situation, or my classroom management, I was missing reflection opportunities because so much was happening during a day that I was unable to focus on so many specific situations. Many opportunities exist for possible reflection during a day of teaching that it is difficult to address them all, especially since teachers need to be preparing for the next day of teaching, handling a variety of daily duties, etc. This caused problems when there were areas that I didn't reflect on at all.

Many of my professors have stated that individuals remember roughly 25-30 percent of what we see and hear through direct experience and that decreases in instances where they are only provided with anecdotal information about something they personally did not experience. Given this information I estimated I was omitting 70 percent of the possible reflective practice opportunities. I was struggling with reflection, and it showed in the formal reflections I would send to my University Supervisor and Clinical Instructors. They would be observing me and catching mistakes that were obvious when you thought about it, but because of the overall amount of cognitive load I was experiencing during the school day I was unable to process all of the information in order to fully engage in the act of reflection. For this reason I opted to utilize a relatively new and innovative tool call the SWIVL Robot.

*“The Swivl is a device that holds an iPad or other mobile device that fastens directly onto a tripod or can sit on a flat surface to record classroom activities. The teacher wears a marker on a lanyard that connects through Bluetooth, which allows the Swivl to rotate and follow the teacher throughout the room.” (Goodson and Allen, 2015)*

## PROCESS AND APPROACH

Numerous times during undergraduate education classes, pre-service teachers are told recording themselves while teaching can greatly improve upon the reflective practice and, ultimately, their teaching practice. Despite the potential of video recording, little research has investigated the use of specific pedagogical approaches involving video (Blomberg et al., 2014). This study focused specifically on the impact video recording has on improving reflective practice. More specifically, does using video recordings for reflective practices help decrease the number of missed reflective opportunities?

Kansas State University provided the opportunity for student interns to pilot SWIVL technology in classrooms in Fall 2015. The technology allowed the user to record his or

her teaching by simply pressing the recording button on a marker worn around the neck. The marker is connected via Bluetooth technology to a 360° rotating device which acts as a cradle for the iPad. The robotic tracking device follows a signal sent by the marker and also transmits audio via an embedded microphone. The iPad is hardwired to the SWIVL via a video cable which allows data to be transferred to the iPad. At the end of a teaching episode the video can be reviewed on the iPad or uploaded to the SWIVL cloud where it can be viewed by the teacher and/or shared with a supervisor. The microphone is sensitive enough to capture student comments as well as the voice of the teacher.

Lessons presented in the classroom were observed in a face to face format by the supervising Clinical Instructor and the University Supervisor. Lesson observed by the Clinical Instructor were recorded while lessons observed by the University Supervisor were not.

The student prepared reflective comments on each type of observation. Following each reflection the student conducted debriefing sessions with the observer. Each element of the lesson was dissected with the observer and compared with the reflection prepared by the student. Particular emphasis was placed upon the elements noted by the observer which were absent from the student's reflection.

Student teaching in first grade presented challenges in the video recording process. No two lessons were alike, but more than that, most of the time no two subjects were alike. The subject, time of day, and length of lesson fluctuated based on the lesson being taught. As with any classroom the number of students present for each lesson would vary depending on pull out programs and attendance issues. Prior to the study the student identified specific elements of teacher upon which to focus. These included clarity, questioning strategies, and teacher presence were important factors which the student identified prior to the semester as those factors he wanted to address.

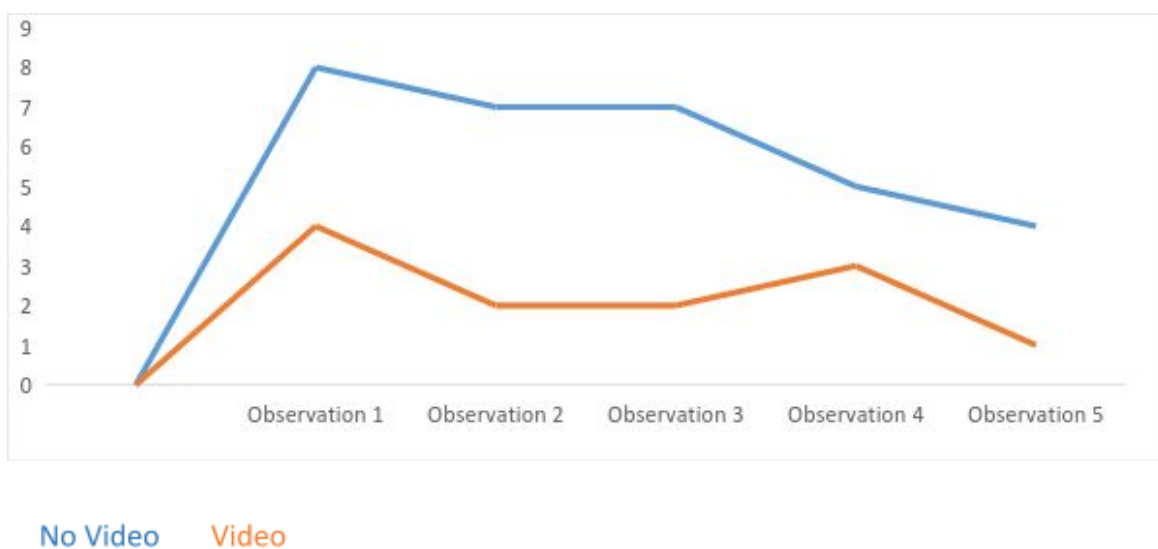
A total of six formal observations were conducted; informal observations were performed randomly once or twice a week by both supervisors. Formal observations were arranged at specific times in advance to the teaching episode, and the student intern was required to submit both guiding questions and reflection questions before and after the lesson. The reflection process for formal lessons were generally more structured as the student was required to follow the university protocol of responding to specific reflective prompts. The study was conducted over a 10 week period. Within the College of Education at Kansas State University reflection is emphasized; the results of this research demonstrated just how important reflection is in the teaching profession.

All teachers have room for improvement in at least one area, especially early-career teachers. This technology provides an opportunity to implement greater reflection.

## RESULTS

The student began using the SWIVL during mid-October and continued recording for the remainder of the semester. During the data collection phase there was a significant difference between the number of missed reflection opportunities in the non-recorded sessions compared to the lessons which were recorded and then viewed prior to preparing the reflection paper (Figure 1). Figure 1 there was a significant difference in using the video versus not using the video when reflecting, especially in the beginning. Given the novice nature of a pre-service teacher, these results are to be expected in early in the student teaching experience. While watching the video the student was able to play, pause, re-watch, rewind, and fast forward through recorded lessons. It became obvious how much more beneficial this was for reflective practices. The student began to record multiple lessons, sometimes even unobserved lessons in an effort to perfect his craft. The student noted early in the process that it was much easier to reflect when he was able to contextualize the lesson and see his actions in hindsight.

Figure 1: Number of Missed Reflections



Toward the middle of November and early December, the student began to notice the number of missed reflection opportunities both while recording the lesson and also in the absence of the recorded lessons were becoming more aligned. The student began to ask the question, “Is it possible that I was somehow making the same number of mistakes at times by using both video and not using it?” As the student began to examine the data he began to realize that he was beginning to reflect on his lesson without the aid of the video recording in a more holistic manner which allowed him to examine the lesson as a whole. That is to say he was simultaneously teaching and reflecting.

The number of missed reflection opportunities was decreasing in both categories. Not only was using video as a reflection tool helping him reflect on the recorded lessons, but it also was helping him to become a more skilled as a reflective practitioner. This epiphany assisted the student in deepening his reflective nature while teaching and after the teaching episode ended.

## **FUTURE IMPLICATIONS**

Kansas State University College of Education is exploring SWIVL as a tool to facilitate distance supervision (Allen and Goodson, 2015). This action research initiated by an undergraduate student highlights the impact that video recording, and distance supervision, is enhanced by the use of the SWIVL technology. The SWIVL Robot is a valuable piece of technology for education programs, as is any video recording tool in reflection. The opportunities for reflection that video technologies can provide not only to students, but their supervisors as well, can make using video recording tools a vital part of a student interns’ semester in the future.

Additionally video reflection can be used far beyond the student teaching semester. Both novice teachers and veteran teachers can enhance specific pedagogical skills through video reflection. While a SWIVL is not necessary to utilize video reflection it can enhance the experience of capturing a wider perspective of the classroom than a typical stationary camera is able to capture. This research indicates that the use of video reflection is a valuable tool for the growth of a teacher. While technical difficulties do arise during recording episodes the use of video technology in the classroom can be a vital part of student and teacher growth.

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