



Using Immediate Video and Verbal Feedback to Enhance Performance of a Fundamental Movement Skill



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Abstract

The goal of any practice or physical education class is typically to enhance and optimize performance in the skills of interest. However, it is sometimes difficult for students to have a sound understanding of the movement tasks and how to alter their performance based on verbal feedback alone. With access to portable electronic devices growing rapidly, it is not uncommon for most people to have a cell phone or tablet readily available. Instead of banishing these devices from the facility, there may be an opportunity to use these devices to better convey points of interest from the instructor to the student. A single Physical Education class was used to trial the use of video feedback combined with the traditional verbal feedback following a forward roll sequence for grade. After reviewing the video footage and receiving verbal feedback from their instructor, students not only improved their scores but also gained confidence in their abilities. The use of personal electronic devices can allow students to see what the instructor sees in order to optimize their performance. By allowing such devices in the classroom (whether it's the instructor's or students') for instructional purposes only, students can begin to identify and correct any flaws to their routine or movement skills as early as possible.

Keywords: Teaching cues; Assessment; Augmented feedback

Introduction

Optimizing performance has benefits not only for skill proficiency, but also for minimizing the risk of injury. When students perform various skills, it is important that they understand how to perform their skills efficiently, effectively and safely. This is sometimes difficult to do when a complex sequencing of tasks are being performed. When learning and refining skills, instructors are typically present to provide feedback and cues specific to the proper execution of the movement task. However, as the majority of students today are predominantly visual learners, it is sometimes challenging for students to fully understand how they need to alter their performance through verbal feedback alone. Having a sound knowledge of the performance is critical for improvement. This requires students to understand the individual movement patterns that are sequenced together to create the overall skill [1]. Previous research has had positive results from using video feedback to improve self-guided performances as well as to modify movement patterns to ultimately decrease the potential for injury [2-5]. With the accessibility of portable electronics rapidly growing, it is not uncommon for most people to have a cell phone or tablet readily available with the capability to record video. Instead of banishing these distractions from the facility completely, there may be an

opportunity to use these devices to better convey specific points of interest regarding physical performance.

How was Video Used?

One Physical Education class was used to test out the theory that the benefits of allowing students to use a phone or tablet during an actual class would outweigh the negative distractions of such a device. The task for the students was simple. As part of the curriculum, they were required to perform a forward roll sequence (Figure 1) for a grade. They were allowed two attempts in front of the instructor, and following each attempt were awarded a score (1 through 5) based off of their proficiency of the task. The higher of the two scores was then documented for the event grade. The typical lesson set-up allows the student to receive verbal feedback from the instructor after each student's first attempt. This allows the instructor to not only award an initial score, but also identify where improvements can be made for the second attempt.

However, for this particular class, half of the students volunteered to have both of their attempts video recorded by the instructor. Following the first attempt, the videoed students received the verbal instructor feedback as usual, but they were also

able to play back and slow down the video of their first attempt while the instructor was providing the feedback. The other half of the class was not recorded, but did receive verbal feedback as usual. In addition to the instructor feedback and score, both groups

of students were asked to complete a 2-question survey (Figure 2) before completing both their first and second attempt. These surveys were used loosely to assess how confident they felt in their ability prior to performing the task.

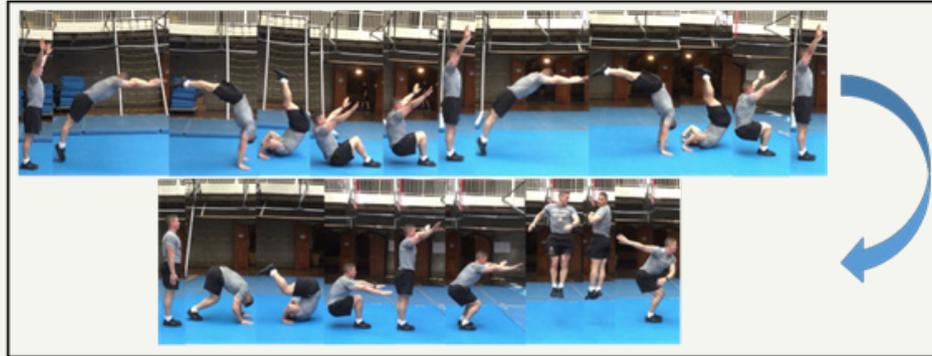


Figure 1: Demonstration of the Forward Dive Roll Sequence (beginning with the top left image). Forward dive roll to standing position followed by a second forward dive roll to standing position, 360° jump to standing position followed by a backward roll to standing position.

1. How comfortable are you with performing the FORWARD ROLL SEQUENCE?					
Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable	
2. What do you anticipate your score will be for this attempt (out of 5 points)?					
0	1	2	3	4	5

Figure 2: The 2-question survey completed by all participants before the first and second attempts of the Forward Dive Roll Sequence.

Did the Video Improve Performance?

The videoed group not only improved their movement score after receiving the combined video and verbal feedback, but they also appear to have gained confidence in their ability after viewing their performance. In contrast, the half of the class that was not videoed had similar scores and comfort levels between the two attempts. Based off of these basic assessment tools, it appears that using video in addition to verbal feedback immediately following the performance was beneficial to the participants. Feedback from the instructor also eluded to this:

“Students that received video feedback during the first attempt were observed trying to correct the mistakes they saw during their video review. It was much more difficult to recognize attempts to correct performance for the group that did not receive video feedback.”

It is also important to note that the students in the video group had volunteered to be in that group. From the moment they volunteered, they asked questions regarding the skill and the video. After reviewing the video following the first attempt, the students frequently asked follow-on questions regarding how to fix errors in their performance. Following the in-class experiment, many of the students from the video group asked for video on other movement

skills required for the rest of the course. In contrast, students that were not in the video group simply wanted to be assessed to improve their graded event score for the course. These students did not ask any questions and appeared to be far less interested in instructor feedback which plausibly could have further improved their performance.

Recommendations for Moving Forward

As a result of trailing the use of a portable electronic device in class, the authors feel comfortable concluding that the combined use of video and verbal feedback immediately following the movement task does benefit the student. The use of such technology can allow students to see what the instructor sees and have them explain and point out in the video exactly where adjustments should be made in order to optimize performance. Additionally, the mobility, access to, and ease of use of such devices like cell phone cameras, tablets and even digital cameras can allow footage to be collected from a variety of views. This will allow students an opportunity to immediately identify and begin to correct any flaws to their routine or movement skills as early as possible.

It is important to note that for this observation, the instructor was the one recording the movements. Another option would be to have the student that just completed the exercise now record the

next person in line. This would allow the instructor to focus more on the movement as it happens. When the instructor is recording the performance, they are potentially less able to focus their attention on the details of the exercise until they view the video. Regardless of who is recording the task, it is realistic to use a single device to record throughout an entire class. This eliminates the need for students to bring in their own devices-which would potentially increase the negative distraction during class.

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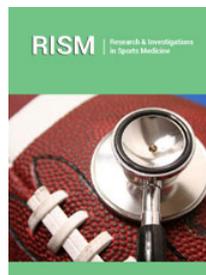
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