The comparison of effect of video-modeling and verbal instruction on the performance in throwing the discus and hammer

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Abstract

**Aim:** This study was designed to examine the efficacy of video instruction relative to that of verbal instruction on learning and performance in hammer and discus throwing in track and field exercise. Video instruction was defined as a practice session in which the coach was aided by the use of video. Verbal instruction was defined as practicing with the coach providing verbal feedback. **Method:** Participants were 30 untrained student, whose mean age was 19 yr. (SD=.3). The participants were randomly assigned into two groups given. At first, participant's throwed discus and hammer (pretest). The same practice method for 10 practice sessions but different types of modeling. Some participants observed a videotape of an expert model performing the skills, and the second group observed a verbal instruction by coach of track–field. At the end of 10 practice sessions, participant's throwed discus and hammer again (pretest). **Results:** On the post-test, the two instruction groups led to significantly increase in distance of hammer and discus throwing. But, the video instruction groups performed better than the verbal group. In the other hand, the finding of independent T test indicated that the range of improvement in throwing of two skills were significantly higher in video group than verbal instruction grouped. **Conclusion:** Our study provides evidence supporting an increased role of Educational technology or instructional technology on learning in exercise technical skills in athletes particularly amateur athletes.

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1. Introduction

Instructional Technologists apply research in learning theory, psychology, and emergent technologies to solve instructional and performance problems. Instructional technology is a growing field of study that uses technology as a means to solve educational challenges, both in the classroom and in distance learning environments. Many histories of instructional technology start in the early 1900s, while others go back to the 1600s. This depends on the definition of instructional technology. Definitions that focus on a systems approach tend to reach further back in history, while those definitions focused on sensory devices are relatively more recent. The use of audio and visual instruction was boosted as a military response to the problems of a labor shortage. With it came the use of highly structured manuals, instructional films.

The importance of Instructional Technologists also indicated in exercise training and sport game. In this area, Reo et al (2004) demonstrated that videotaped modeling are more effective than a handout alone for achieving performance accuracy of a basic exercise program(7). But, other study showed that using of video film had not influence on tennis service with compared to verbal feedback (2). There is little study about the role using Instructional technology or video-feedback on the learning of hammer and discus throwing in track–field skills.

Therefore, the objective of this study was to investigate and comparison to the influence of two different types of modeling and knowledge of performance on track–field skills. This study was designed to examine the efficacy of video instruction relative to that of verbal instruction on learning and performance in hammer and discus throwing in track and field exercise. Video instruction was defined as a practice session in which the coach was aided by the use of video. Verbal instruction was defined as practicing with the coach providing verbal feedback.

Method: Participants were 30 untrained student, whose mean age was 19 yr. (SD=.3). The participants were randomly assigned into two groups given. At first, participant's throwed discus and hammer (pretest). The same practice method for 10 practice sessions but different types of modeling. Some participants observed a videotape of an expert model performing the skills, and the second group observed a verbal instruction by coach of track–field. At the end of 10 practice sessions, participant's throwed discus and hammer again (pretest).

Results: The results showed that all groups were equal on the pre-test. On the post-test, the two instruction groups led to significantly increase in distance of hammer and discus throwing. But, the video instruction groups performed better than the verbal group. In the other hand, the finding of independent T test indicated that the range of improvement in throwing of two skills were significantly higher in video group than verbal instruction grouped(figure 1, figure 2). The mean and standard deviation of all variables to be visible in table number one.

<table>
<thead>
<tr>
<th>Group</th>
<th>Age (year)</th>
<th>Weight (kg)</th>
<th>Height (cm)</th>
<th>Discus throwing (m)</th>
<th>Hammer throwing (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal feedback (pre)</td>
<td>21 ± 3</td>
<td>70 ± 18</td>
<td>170 ± 8</td>
<td>15.27 ± 1.94</td>
<td>13.93 ± 2.73</td>
</tr>
<tr>
<td>Verbal feedback (post)</td>
<td>21 ± 3</td>
<td>70 ± 18</td>
<td>170 ± 8</td>
<td>19.40 ± 2.27</td>
<td>18.60 ± 2.78</td>
</tr>
<tr>
<td>video-feedback (pre)</td>
<td>21 ± 3</td>
<td>71 ± 17</td>
<td>172 ± 6</td>
<td>16.40 ± 2.23</td>
<td>15.67 ± 1.54</td>
</tr>
<tr>
<td>video-feedback (post)</td>
<td>21 ± 3</td>
<td>71 ± 17</td>
<td>172 ± 6</td>
<td>23.73 ± 3.17</td>
<td>21.73 ± 2.52</td>
</tr>
</tbody>
</table>
Figure 2: The changes pattern of Discus throwing in pre and posttest of study groups.

Figure 2: The changes pattern of hammer throwing in pre and posttest of study groups.
Discussion

Conflicting results characterized the research focused on effect or difference of verbal and video feedback on sport skills. In this area, the study by Miller et al showed that, there were no statistically significant differences between verbal feedback and video feedback in forehand and backhand drive placement tests of the Hewitt Tennis Achievement (6). In addition, the finding of Emmen et al on the effectiveness of video mediated instruction on the learning of the tennis service by novices indicated that no clear advantages of using video mediated instruction methods on tennis service with compared to traditional training group (2). The study by Kernodle also support this results (5). Nevertheless, Reo et al showed that video feedback had significantly affect learning and performance of exercise with compared to other method (7). The studies by Sewall and Atienza also confirmed these results (1, 8). These finding confirmed by another studies on sport(3, 4, 9) Our results showed that both verbal feedback and video feedback lead to improving learning and perform in hammer and discus throwing but the range of improving in video feedback group was better than verbal feedback group. Our study provides evidence supporting an increased role of Educational technology or instructional technology on learning in exercise technical skills in athletes particularly amateur athletes.

Reference


