THE EFFECT OF USING VISUAL AIDS ON TEACHING VOLLEYBALL SKILLS TO PHYSICAL EDUCATION STUDENTS

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ABSTRACT

The purpose of this study was to investigate the effect of using visual aids on teaching volleyball skills to physical education students at the Hashemite University. A sample of 30 physical education and sport science students was assigned to this study. The sample was divided into two equal groups. The first group was an experimental group and was taught by using the visual aids. The second group was the control group and was taught by using the traditional method of teaching (a student has no other role rather than receiving the information that is being sent by teacher). The results revealed that the use of visual aids significantly \( P ≤ .05 \) enhanced students' performance in volleyball. The researcher recommended using the visual aids in teaching fundamental skills in different sports.

Keywords: Visual aids, teaching aids, volleyball skills, physical education, university.

INTRODUCTION

The instructional media is considered one of the most concepts related to teaching technology since it is not only a helpful means, but also has become a part of the teaching process to achieve its goals (Alhasan and Altayeb, 2011). The subject of instructional media has taken an advanced position in the education hierarchy, and it has the interest of education researchers as well as those who work in the education and teaching fields. The emphasis of efforts in the last three decades was toward using methods and styles of teaching to increase the students' academic level and prepare the educational curricula within the available capabilities (Alkhateeb, Almufty, & Musa, 2011).

The instructional media is defined as a group of devices, tools, and materials that the instructor uses to enhance the teaching process, decrease its period of time, clarify its meanings, explain the ideas, and help the students to gain skills needed in their education (Ahmad, 2010). Although there is a wide range of teaching methods, it is necessary to use new and advanced teaching methods to keep up with the state-of-the-art appropriate for the curricula and students' level of academic maturity (Ali, 2007).

The instructional media is divided into three types: visual aids, hearing aids, and a combination of visual and hearing aids. Examples of aids include cinema, televisions, videos, projectors, posters, images, pictures, models, figures, and computers (Mahmoud, 1998). Visual aids were used in the field of teaching sports games such as volleyball, since it was shown that using visual aids has a significant and effective role in teaching difficult sport skills (Abdul Hussein, 1994).

Jordan is a developing country that does not have advanced technology compared to developed countries. In the education sector in Jordan, the old traditional techniques are used in the majority of institutions. Therefore, this study is designed to investigate the effects of using
visual aids on teaching volleyball skills to physical education students at the Hashemite University in Jordan.

**REVIEW OF LITERATURE**

Teaching makes achievement of knowledge and skills possible through systematic interaction between teachers and learners. It happens every day and involves teacher, learner, methodology, and materials interaction (Akerele & Afolabi, 2012).

Teaching aids, as the name implies, must assist the teaching process (Maduna, 2002). They are essential for enhancing teaching and learning skills in a systematic manner, and keeping the learned skills in the learners’ minds for a longer period of time. Teaching aids, which are a broad-range of resources, can be employed to enhance communication effectiveness and efficiency in the teaching-learning process (Abimbade, 1997). Also, it can be used to support and motivate the classroom teaching process, cognitive development, and socio-moral development (Adedapo, Salawu, & Afolabi, 2004).

Ayiinde (1999) stated that an intelligent use of teaching aids that include visual aids would save time and stimulate students’ interest. It increases the retention of knowledge and stimulates understanding and attitude. It also makes instruction more powerful and immediate.

Visual aids, which are materials that use sight to teach a certain topic or present information, can take many forms such as Power Point presentations, photographs, movies, video clips, graphs and live demonstrations. As visual aids help a teacher to teach, they also enhance students’ understanding and information recall (Murtaza, Mushtaq, Sajid, & Shahzad, 2012).

Some researchers including Dale (1996), Maduna (2002), and Quarcoo-Nelson, Buabeng, and Osafo (2012) have recommended relying on the usage of visual and auditory sense organs in the teaching process since 85% of the learned skills are transferred to the brain through these senses.

For hundreds of years, people have known that they remember what they see and do (Stalheim-Smith, 1998). An old Chinese proverb states "I hear and I forget. I see and I remember. I do and I understand". Data given by Stice (1987) supports this proverb. The author reported that learners remember 10% of what they read, 26% of what they hear, 30% of what they see, 50% of what they hear and see, 70% of what they say, and 90% of what they say as they do something.

According to Ouellette (2004), words may easily be forgotten but mental pictures will be remembered for a longer period of time. For that, it is therefore important to prepare illustrative materials and short demonstrations, or other visual materials that are effective means to improve students’ comprehension and information retaining.

In the present time where technology has reached its boom, several studies have been conducted to explore the effectiveness of visual aids compared to verbal instruction (Akerele & Afolabi, 2012; Murtaza, Naseer Ud Din, & Khan, 2011; Maduna, 2002; Joshi, 1997; Quarcoo-Nelson, Buabeng, & Osafo, 2012; Fakomogbon, Bada, Omiola, & Adebayo, 2012). These studies have provided evidence that visual aids increase the effectiveness of classroom teaching-learning process. For example, Joshi (1997) studied the impact of visual aids in teaching English as a second language to secondary school students. The author concluded that the use of visual aids in teaching resulted in better achievement of English grammar. Similarly, Quarcoo-Nelson, Buabeng and, Osafo (2012) found that high school students taught with visual aids instruction performed better than those taught with the traditional method. Akerele and Afolabi (2012)
concluded that when video is used in teaching, it enhances learners’ positive attitude towards the course. In addition, it affects their performances positively.

Despite the growing body of literature on visual aids in business and education, many questions remain unanswered. There is a need for more empirical support to the advantages and effects of visual aids in sport contexts, and how visual aids affect learning skills in different sports. Little research has been conducted in this area especially in the Arab world and Jordan being no exception. In one of the few studies to do so, Ay (2011) aimed at exploring the effect of visual feedback on learning dive skill in volleyball. The findings of this study revealed that visual feedback enhances student performance of dive skill in volleyball.

**RESEARCH QUESTIONS**

*Do visual aids have an effect on teaching volleyball skills to physical education students?* (1)

*Will students who were taught using visual aid presentations perform better than those who were taught using traditional lecture method?* (2)

**HYPOTHESIS**

The following null hypotheses were formulated to guide this study:

**H01:** There is no significant difference ($\alpha \leq 0.05$) between the pre and post mean scores of the control group (physical education students who were taught through the traditional lecture method).

**H02:** There is no significant difference ($\alpha \leq 0.05$) between the pre and post mean scores of the experimental group (physical education students who were taught with visual aid presentation).

**H03:** There is no significant difference ($\alpha \leq 0.05$) between the mean post-test scores of the control group and the experimental group.

**METHODOLOGY**

**Sample and Data Collection**

The study sample consisted of (30) students in the Faculty of Physical Education and Sport Sciences at the Hashemite University who were enrolled in a volleyball course. They were randomly divided into two equal groups (n=15), control and experimental. The control group was taught by using the traditional teaching method, while experimental group was taught by using visual aids.

**Research Design**

This study employed pre-test post-test control group experimental design. The assigned groups were equivalent in terms of growth indicators, fitness variables and skills that may affect the research experiment. The pre-measurements for both groups on all tests were taken from March 18, 2014 to March 20, 2014. Table 1 illustrates the study sample equivalence
Table 1
Study Sample Equivalence

<table>
<thead>
<tr>
<th>Variables</th>
<th>Control Group</th>
<th>Experimental Group</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>*M</td>
<td>**SD</td>
<td>*M</td>
<td>**SD</td>
</tr>
<tr>
<td><strong>Growth Indicator</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (year)</td>
<td>19.21</td>
<td>0.21</td>
<td>19.45</td>
<td>0.38</td>
</tr>
<tr>
<td>Height (cm)</td>
<td>179.22</td>
<td>5.57</td>
<td>178.16</td>
<td>4.23</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>72.44</td>
<td>3.82</td>
<td>75.5</td>
<td>4.31</td>
</tr>
<tr>
<td><strong>Fitness Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 meter running</td>
<td>7.23</td>
<td>0.40</td>
<td>7.13</td>
<td>0.38</td>
</tr>
<tr>
<td>Throwing a 500-gramball</td>
<td>19.55</td>
<td>3.12</td>
<td>18.6</td>
<td>3.44</td>
</tr>
<tr>
<td>to the farthest distance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standing forward bend</td>
<td>11.25</td>
<td>2.88</td>
<td>11.25</td>
<td>2.81</td>
</tr>
<tr>
<td>Zigzag Run</td>
<td>8.03</td>
<td>2.22</td>
<td>8.52</td>
<td>2.41</td>
</tr>
<tr>
<td>Vertical Jump</td>
<td>15.29</td>
<td>2.81</td>
<td>15.31</td>
<td>2.93</td>
</tr>
<tr>
<td><strong>Volleyball Skills</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receiving</td>
<td>8.97</td>
<td>3.88</td>
<td>8.66</td>
<td>4.98</td>
</tr>
<tr>
<td>Passing</td>
<td>13.43</td>
<td>5.42</td>
<td>13.23</td>
<td>6.25</td>
</tr>
<tr>
<td>Serving</td>
<td>14.01</td>
<td>3.99</td>
<td>13.25</td>
<td>3.99</td>
</tr>
</tbody>
</table>

*M: Mean; **SD: Standard Deviation

**Instruments**

The following tools and equipment were used for this study: restameter, medical scale, measuring tape, and stopwatch. Also, a battery of tests that included flexibility testing, vertical jump testing, 30-Meter Dash testing, and Zig Zag testing was used to measure the participants’ fitness variables. Moreover, the technical performance of volleyball skills was assessed through a form filled by three judges who evaluated each student separately.

**Validity and Reliability**

Five experts holding doctoral degrees in physical education and sport sciences were asked to evaluate the tests and tools used in this study and whether or not these tests and tools are applicable and appropriate. The experts agreed on the validity and appropriateness of the tests to measure fitness variables and volleyball skills. It has been proved that the tests and tools are valid and reliable (Cronbach’s alpha = 0.84).

**The Educational Program**

The researcher designed and applied an 8-week educational program using different visual aids (e.g., pictures, posters, slides, video clips, and Power Point presentations). The program included 16 units (2 units per week). The control group was taught using the traditional lecture method utilized by most of the members in the Faculty of Physical Education and Sport...
The results shown in Table 3 indicate statistical significant differences ($\alpha \leq 0.05$) between the pre-measurement and the post-measurement of the experimental group in all volleyball skills (receiving, passing, and serving). Therefore, the second null hypothesis $H_0$ was rejected.
The results presented in Table 4 show that there were significant differences ($\alpha \leq 0.05$) between the post-measurement of the control and experimental groups in all volleyball skills (receiving, passing, and serving). Therefore, the Third null hypothesis $H_{03}$ was rejected.

### Table 3

Differences between the Pre- and Post-measurements in Volleyball Skills for the Experimental Group (N=15)

<table>
<thead>
<tr>
<th>Volleyball Skills</th>
<th>Pre-Measurement</th>
<th>Post-Measurement</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Receiving</td>
<td>8.66</td>
<td>4.98</td>
<td>17.88</td>
<td>0.15</td>
</tr>
<tr>
<td>Passing</td>
<td>13.23</td>
<td>6.25</td>
<td>25.14</td>
<td>3.12</td>
</tr>
<tr>
<td>Serving</td>
<td>13.25</td>
<td>3.99</td>
<td>27.19</td>
<td>2.17</td>
</tr>
</tbody>
</table>

### Table 4

Differences between the Post-measurements of the Control and Experimental Groups in Volleyball Skills

<table>
<thead>
<tr>
<th>Volleyball Skills</th>
<th>Control Group</th>
<th>Experimental Group</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Receiving</td>
<td>9.23</td>
<td>0.21</td>
<td>17.88</td>
<td>0.15</td>
</tr>
<tr>
<td>Passing</td>
<td>15.02</td>
<td>3.35</td>
<td>25.14</td>
<td>3.12</td>
</tr>
<tr>
<td>Serving</td>
<td>15.87</td>
<td>3.99</td>
<td>27.19</td>
<td>2.17</td>
</tr>
</tbody>
</table>

### DISCUSSION

The findings of the current study revealed that students in the experimental group exhibited more significant mean achievement than their counterparts in the control group. The performance of physical education (PE) students in volleyball skills was enhanced mostly by using visual aids and minimally by the traditional lecture method.

The results of this study supported the notion that teaching aids were significant factors on students’ achievement. The higher performance by the students could be due to the usage of visual aids that provide more concrete representations of ideas and concepts that were normally taught in an abstract form in traditional classes (Quarcoo-Nelson, Buabeng, & Osafo, 2012).

The advantages of using visual instructional techniques during teaching-learning sessions are immense and remarkable as compared to the traditional methods of teaching (Murtaza, Naseer Ud Din, & Khan, 2011). It is evident that the use of visual aids enhances learning volleyball skills and serves as an effective tool for motivating PE students to learn.

The findings of this study were consistent with the results obtained in the professional literature review (Gia, Lawrence, Juan, 2015; Akerele & Afolabi, 2012; Fakomogbon, Bada, Omiola, & Adebayo, 2012; Quarcoo-Nelson, Buabeng, Osafo, 2012; Ay, 2011; Murtaza, Naseer Ud Din, Khan, 2011) which concluded that visual aids are highly effective in making teaching learning process more effective and fruitful.
LIMITATIONS

Due to the nature of the study design, the study has several limitations: a) the findings are generalizable only to the target population and to the same setting; b) the extraneous variables of environment (such as training and participation of the participants in volleyball activities inside and outside the university) cannot be completely controlled.

CONCLUSIONS AND RECOMMENDATIONS

This study was conducted to explore the effectiveness of using the traditional teaching method compared to using visual aids in teaching. The effectiveness of each teaching technique was evaluated by measuring its influence on teaching physical education students different volleyball skills.

The study has shown that the use of visual aids significantly enhanced students' performance in volleyball compared to the use of the traditional teaching method. Therefore, the use of visual aids should be adopted in teaching and learning sport skills in order to determine its effectiveness and possible adoption as a major instructional strategy in PE colleges. The researcher recommends that it is necessary to use suitable visual aids in teaching volleyball skills.

REFERENCES


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