The Design of A Multi-Skills Appliance and Its Effect to Improve the Sum of Motor, Functional Abilities and Skills of Passing and Scoring for Female Students in the Futsal

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Abstract

Futsal is one of the basic lessons for female students in the College of Physical Education and Sports Sciences in the first stage of study in Iraq, for the purpose of learning the basic skills in this game and some functional and motor abilities and quickly, the researchers designed a multi-skills appliance that helps in learning a number of skills including scoring, passing, quitting and rolling ball. The multi-skills appliance consists of three parts, each measuring 2 meters, can be connected to each other according to need and variety of skill. The exercises used on the appliance designed to improve the performance of the experimental group compared to the control group according to the statistical results of the tests, where the allotted time was 90 minutes distributed on the three parts of the preparatory and main and final courses. The number of learning units for passing and scoring was two units per week for 6 weeks, with a total of 12 units.

Keywords: Skills, Educational appliance design, Futsal, Motor accuracy, Scoring, Motor learning, Anaerobic ability and passing.

Introduction

The educational appliances are used by the instructor, teacher and learner to achieve the desired educational goals, and they are not modern things in the field of education, as it can be used in the conversation of all the senses of the learner, providing live experiences and strong impact and lead to increased survival of the impact of what the learner learned, as through the use of appliances can attract the attention of the learner while learning the skills of sports activities, so it becomes more effective and at the same time get rid of boredom felt in the course of learning skills and help in the economy time and effort for each of the coach or teacher and learner and take into account the individual differences of the abilities of the learner, whether in terms of functional, skilled or physical, also the performance and learning performance depends on the physical aspect.

There are some functional variables, including short-term anaerobic ability affect the ability of the muscles to perform strongly and at high speed, which is important in the accuracy of mobility and handling and scoring in the halls, as the accuracy of mobility is "the ability of the individual to control his abilities towards a specific goal". The passing is one of the skills of the important futsal and of the most used skills in the game of futsal and the team, which is well-trained players and use it accurately during the game is characterized by collective play, therefore, there is a diversity in the performance of the ballroom skills according to the play situations. Also, skill of scoring is also the final result of the series of offensive operations performed by the player or players individually or collectively during the game and according to the law of the game in order to achieve a goal against the opposing team. Therefore, education and training in scoring skill should take time in the training or educational curriculum For trainers, it is necessary to diversify the scoring methods and adopt accuracy as a
basis for performance, from different positions and conditions that are almost similar to the game and with both feet as far as possible without one foot and other legal parts of the body and all players.\footnote{7} The basic skills of the futsal, including handling and scoring towards the goal are "movements that the player can and can use in different circumstances and situations.\footnote{8}

The Part of Practical
The Procedures of Field Research

The experimental approach was used in research which is a deliberate and precise change of the specific conditions of an event\footnote{9,10}. After that, the research society was identified by the first grade students in the Department of Physical Education and Sports Sciences in the Faculty of Education for Girls \ University of Kufa for the academic year 2016-2017, the number of 40 students were selected 36 of them as a sample of the research divided into two groups (experimental and control) In each group 18 students in a simple random way (lot) and thus represented the sample 90\%. Then, the researchers set up a number of tools and appliances for measuring length and mass of body, 6 futsal balls, colored signs, metal measuring tape, Japanese-made Sony video camera with speed camera holder (200 photos / sec) number (2) and the multi-skilled designer.

The Tests
The Test of Vertical Jump from Stability (Saar Gent)

\textbf{Test Objective}
Measurement of absolute and relative anaerobic capacity.

\textbf{Material Used}
Chalk, wall or plate pieces Measurements in unit of measurement (cm).

\textbf{How to Perform the Test}
The laboratories stand holding a piece of chalk beside the wall or painting so that the scorpions are on the ground and then raise its arm holding chalk full along the mark to mark the board with chalk. The lab then tilts the arms down and back with the torso bend to the front and bottom and flexing the knees to the angular position, then extending the knees and pushing the feet together to jump up with the arms weighted strongly forward and upward to reach them as high as possible to make a mark with chalk or powder. White on the plate or wall at the top of the point and measuring to the nearest (cm).

\textbf{The Method of Recording the Data}
The difference between the distance between the two marks before performance and after performance is calculated in terms of functional short anaerobic ability of the student and gives three attempts to calculate the best and extract the short anaerobic capacity using the following equation:\footnote{11}

\textbf{Short Anaerobic Capacity}
\begin{equation}
\text{Short Anaerobic Capacity} = \text{Body weight} \times \sqrt{\text{jump distance in meters}}
\end{equation}
As (2.21) is a fixed number, so the distance of the jump is the difference between the height of the meter.

The Goal of the Ball towards the Squares in the Corners of the Goal from A Distance (10 M): \footnote{12}

\textbf{Test Objective}
Measure scoring accuracy

\textbf{Material Used}
The goal of futsal measuring $2 \times 3$ m The four squares are measured (50 cm 2) Two in the upper corners and two in the lower corners and sets the starting line with a distance of (2 m) of the distance (10 m) from the middle of the goal line, balls (5) distributed on the starting line And a whistle.

\textbf{How to Perform the Test}
The student hit the balls to the squares installed at the corners of the target from a distance of 10 m.

\textbf{The Method of Recording Data}
Given one degree for each ball enter one of the boxes at the top and two degrees in one of the boxes at the top and then calculate the total of five balls.

\textbf{The test of Recantation Ball on a Wall for 30 Seconds} \footnote{13}

\textbf{Test ObjectiveMaterial Used}
Measuring the accuracy of handling and receiving time.

\textbf{Material Used}
A wall with two ribs (1 m) and the distance between them (5 m).
How to Perform the Test
The ball is placed on the perimeter of a half circle (150) cm, and the circle is separated from each square distance (5 m) Also at the start of the player hit the ball towards the first box and after each blow runs towards the ball bounce off the box and rolling into the circle, then hit the foot to the second box, Thus, it continues alternately until the end of the test time (30) seconds.

The Method of Recording Data
The correct number of times the player plays the ball is counted into the boxes within 30 seconds.

Pretests
Pretests were carried out on Monday 27/2/2017.

Educational Units
The number of educational units was (12) units lasted (6) weeks per week (2) educational units, the duration of the unit (90) minutes to learn the handling skills 4 units to learn handling and (8) The experimental and control groups participated in the performance of the preparatory and closing part. The main part was the experimental group used the exercises on a multi-skill appliance for learning. The control group inquired about the traditional exercises developed by the teacher, which started on 1/3/2017 and ended on 12/4/2017.

The Appliance of Multi-Skills
The appliance consists of three parts each part measuring 2 meters can connect with each other as needed and diversity of skill can be used in addition to learning and develop the skill of handling and scoring and accuracy of performance in learning and development of the suppression and rolling ball. The image below represents the appliance where you can delete or add balls according to the type of skill to be learned and attached to the ropes moving on reels installed at the top is easy to move and use for all ages and levels.

Post-Tests
Post-tests were conducted on Thursday 13/4/2017.

Statistical Means
The SPSS program was used.

Results and Discussed
At the end of the curriculum, the results of the tribal and remote tests for both the experimental group and the control group were statistically treated to determine the difference between the two tests for the same group. The mean, standard deviation and calculated t-test were the statistical processes used. The two researchers studied the results of the two tests of the two groups statistically to determine the difference of morale in favor of either of the two groups was in favor of the experimental group and as shown in table (1).

| Table 1: Shows the computational environment, the standard deviations, the calculated value of t, and the significance of differences for the results of the remote tests of the experimental and control groups. |
|-----------------------------------------------|-----------------|-----------------|-----------------|-----------------|
| Tests | Measuring unit | Experimental group | Control group | (t) Calculate | Significant differences |
|       |                 | Mean | STD.EV | Mean | STD.EV | |
| Short anaerobic capacity | Cm | 11.72 | 0.21 | 9.63 | 1.82 | 6.29 |
| Scoring accuracy | Degree | 6.16 | 0.85 | 4.61 | 1.33 | 4.16 |
| Passing accuracy | Number | 5.83 | 1.42 | 5.38 | 2 | 3.76 |
Table (1) shows that the statistical difference between the two groups was significant because the value of T-test was greater than the scale under freedom degree 34 and the significance level of 0.05. The researchers attribute this difference in the improvement of the experimental group to the exercises used on the machine. The skills required by some of the motor skills and the most important skills in the façade, as well as the regularity of learning and feedback provided by the teacher and helped the device to be recognized by the student quickly, and the appropriate repetitions also had a functional impact in terms of physical and motor and also fit. Those are the dates With the learning phase of great importance.\[14\]

![Figure 2: Shows the computational and standard deviations of the experimental and control groups](image)

The use of appliance in the learning is an effective tool in learning that shortens the time and effort and increases your learner training better than the traditional methods.\[15\]

### Conclusions

- A multi-skills appliance has a positive effect in improving some of the motor and functional abilities and skills of handling and haircuts for female students.
- The experimental group is superior to the control group in all posttests.
- The duration of learning and the number of teaching units was sufficient to improve performance.
- The exercises carried out and their repetitions and the feedback that accompanied them resulted in positive adjustment.

### Recommendations

- The need to use the devices in learning, including (multi-skill device) in learning the skills of the ballroom for female students.
- You can use the device designed for all ages and levels of sports.
- Preparation of other scientific research on the device to study some mechanical and psychological variables.

### References

10. Amer Saeed Al-Khikani, Ayman Hadi Al-Jubouri (2016) the guide in writing letters and scientific papers, Dar Al-Bayda for printing and design, Najaf.


