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The Effect Of An Adelson-Model Educational Program On Learning The Performance Of Chest Passing And Layup Shooting Skills In Basketball Among Students

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Abstract:

This research aims to develop an educational program based on the Adelson model for teaching basketball students the chest pass and lay-up shooting skills, and to identify the impact of this educational program on students' learning of these skills. The researcher employed an experimental approach using two groups. The two equivalent groups (experimental and control) used pre- and post-tests. The research population consisted of first-year students at the College of Physical Education and Sports Sciences, University of Karbala, for the academic year (2023-2024), totaling (204) students. The research sample was selected from this population, consisting of (32) students, divided equally into two groups. Experimental and controlled trials were conducted, with each group comprising (16) students. Pre- and post-tests were administered for the chest pass and lay-up shooting skills in basketball, interspersed with the application of the educational program based on Adelson's model for learning to perform the chest pass and lay-up shooting skills in basketball. The number of educational units reached (8) units, for a duration of (4) weeks, with two learning units per week, each unit lasting (90) minutes. The research yielded several conclusions, including that the Adelson model had a

positive impact on learning the skills of chest passing and lay-up shooting in basketball, and that teamwork and cooperation among students increased the learning process, self-confidence, and the exchange of ideas. The research recommends using the Adelson model in teaching basketball skills, given its status as a modern, interactive model, and conducting workshops and courses to explore the effectiveness of modern educational models.

Keywords: Adelson model, chest pass and layup skills, basketball.

1. Introduction to the Research:

1-1 Research Introduction and its Importance:

Our current era is witnessing remarkable technological development and an information revolution in various fields of life, including education. This has posed a challenge to the educational system, necessitating its reform and the absorption, application, and utilization of the vast amount of knowledge. This requires preparing qualified scientific and educational personnel who can play an active role in student development in all aspects. The cognitive, emotional, social, and skill-based aspects are all crucial for individuals to become beneficial to themselves and their communities. The sports field has also benefited from this development, with those involved in sports education seeking modern, scientifically-based educational models that aim to teach learners practical skills. One such model is Adelson's. Adelson's model is considered one of the... Educational models based on constructivist theory aim to optimize time and equip learners with useful scientific knowledge, enabling them to recall information when reapplying or retrieving it in the future. This model is distinguished by allowing learners the opportunity to discover and correct errors independently, and to develop a deep understanding of the requirements of motor performance, which This positively impacts their acquisition of mathematical skills. Al-Adili and Baara (2008) argue that Adelson's educational model is based on cognitive theory and the constructivist approach to teaching, and aims to equip the learner with concepts and knowledge through their recall when applied in the future.

1-2 Research Problem:

Implementing an educational program based on the Adelson model presents an opportunity to shift from traditional teaching to more interactive methods that focus on self-learning and innovation. This may contribute to enhancing students' performance in the skills of chest handling and peaceful shooting. The researcher's review of most educational programs related to learning... Regarding basic basketball skills, there is a noticeable lack of use of modern teaching models, in addition to a weakness in the skill performance of students in the chest pass and layup. Based on all of the above, the research problem leads us to the following question: Does the Adelson model teaching program have an impact on learning the performance of the two passing skills? Chest Pass and Ladder Shooting in Basketball for Students

1-3 Research Objectives:

1. To develop an educational program using the Adelson model to teach students the chest pass and ladder shot skills in basketball.

2. To identify the impact of the Adelson model educational program on students' learning of the chest pass and ladder shot skills in basketball.

3. To identify differences in learning and performing the chest pass and lay-up basketball skills between the control and experimental groups.

1-4 Research Hypotheses:

1. The Adelson model educational program has an effect on students learning and performing the chest pass and lay-up basketball skills.

2. There are differences in students learning and performing the chest pass and lay-up basketball skills between the control and experimental groups.

1-5 Research Areas:

1-5-1 Human Scope: First-year students at the College of Physical Education and Sports Sciences, University of Karbala, academic year (2023-2024).

1-5-2 Temporal Scope: From November 22, 2023, to February 8, 2024.

1-5-3 Spatial Scope: The sports hall at the College of Physical Education and Sports Sciences, University of Karbala.

2 Research Methodology and Field Procedures:

2-1 Research Methodology: The researcher adopted the experimental method using two equivalent groups (experimental, control) with pre- and post-tests, as it was suitable for the research problem.

2-2 The research community and its sample:

The research community was defined as the first-year students in the College of Physical Education and Sports Sciences, University of Karbala, for the academic year (2023-2024), whose number was (204) students. A sample was chosen from that community, consisting of (32) students distributed equally between two groups (experimental, control), each group comprising (16) students.

2-3 Field Research Procedures:

2-3-1 Description of Skill Tests:

First: Chest Handling Skill Test:

• Test Name: Chest Handling towards a Circle on the Wall. (Jawad, 2015, p. 66)

• Test Purpose: To measure chest pass skill in 10 seconds on a bouncing wall.

Equipment Needed: A smooth wall with a rectangle (120cm x 60cm) painted on it, its bottom edge 90cm from the ground. A line is drawn on the ground 180cm from the wall. A basketball and a whistle are also needed.

Performance description: The participant stands behind a line drawn on the floor holding a basketball at chest level. Upon hearing the starting whistle, the

participant passes the ball along the rectangle drawn on the wall within ten seconds, ensuring the ball does not touch the floor during the performance.

Registration: The test performance is evaluated out of (10) points by two judges in the direct method and depends on the arithmetic mean score of the evaluators.

Second: The Ladder Shooting Test:

• Test Name: Ladder Shooting from a distance of (5 m). (Zidan, 1997, p. 30)

• Test Purpose: To evaluate the performance of the ladder shooting skill in basketball.

• Scoring: The test performance is evaluated out of (10) points by two judges using the direct scoring method, and the evaluation is based on the arithmetic mean of the judges' scores.

2-3-2 Pilot Test:

The pilot test to assess the skills of chest passing and lay-up shooting in basketball was conducted on Sunday, December 10, 2023, on a sample of (10) first-year students who did not participate in the main experiment. They were randomly selected from the research population. Through this pilot test, the following was determined The researcher takes the time required to conduct each test, and identifies the errors, obstacles, and difficulties that the researcher may encounter during the main experiment in order to overcome them.

2-3-4-2 Equivalence of the two research groups:

To determine the equivalence between the two research groups (control and experimental), calculate the arithmetic mean and standard deviation of the individuals in both groups in the pre-tests for the performance of the two basketball skills: chest pass and lay-up shot. To determine the significance of the differences between the groups, the (t) test for independent samples was used. The results of the statistical analysis showed that the differences were not significant, which confirms the equivalence of the two groups in the skills of chest passing and the lay-up shot in basketball, as shown in Table (1).

Table (1)

shows the equivalence of the two research groups (control and experimental) in the variables investigated.

Skills	Unit of measurement	Experimental group		Control group		Calculated t-value	Sig. value	Type of significance
		x	Sd	x	sd			
Chest control	Degree	2.750	0.683	2.875	0.806	-0.473	0.640	Not significant
Chip shot	Degree	2.563	0.629	2.625	0.619	-0.283	0.779	Not significant

2 -4-4-3 Implementing the Adelson Model Training Program:

An Adelson model training program was developed and implemented with the experimental group. (8) training units were applied to the skills of chest passing and lay-up shooting in basketball, divided over (4) weeks, with two units per week. The week, starting from Sunday (24/12/2023) until Tuesday (16/1/2024), and the duration of the educational unit is (90) minutes,

2-4-4-4 Post-tests:

Post-tests for the skills of chest passing and lay-up shooting in basketball were conducted for the two research groups (experimental and control) of first-year students, totaling (32) students, on Sunday, January 12, 2025. The researcher took into account all the conditions, requirements, and procedures that were followed in the pre-tests. Student performance is assessed by two evaluators using the direct method.

5-2. Statistical Methods:

The Statistical Package for the Social Sciences (SPSS) was used to calculate the results using the following statistical formulas:

- Arithmetic mean
- Standard deviation
- Pearson correlation coefficient

• Independent samples t-test

• Paired samples t-test

3. Presentation, Analysis, and Discussion of Results:

3.1 Presentation, Analysis, and Discussion of Pre- and Post-Test Results for the Experimental Group:

Table (2)

Shows the arithmetic means, standard deviations, and calculated t-value for the pre- and post-tests of the experimental group

Skills	Unit of measurement	Pre-test		**Post-hoc test**		Mean of differences	Standard deviation of differences	Calculated t-value	Sig. value	Type of significance
		x	**sd**	**x**	**sd**					
Chest control	Degree	2.750	0.683	8.125	0.885	5.375	0.885	24.292	0.000	**Significant**
Chip shot	Degree	2.563	0.629	7.938	0.929	5.375	1.025	20.982	0.000	**Significant**

By observing Table (2), which shows the arithmetic mean, standard deviation, calculated t-value for paired samples, significance level, and significance of the difference for the experimental group in the pre- and post-tests, it was found that there were significant differences between the pre- and post-tests; because the significance level (sig) was lower than the significance level when

(0.05) in favor of the post-test.

The researcher attributes the significance of the differences to the steps followed in teaching according to Adelson's model, which are characterized by their ability to create a kind of interaction between the teacher and his students. On the other hand, the educational units moved the students from The traditional approach, which makes them passive recipients of information presented by the

teacher, is replaced by a new, more effective model. Working according to this model also provides students with ample opportunity to exchange information, accelerate learning, and take an active role in the learning process, actively participating in exercises within collaborative groups, thus increasing effectiveness. This process of learning, in turn, is reflected in the learning and improvement of skill performance. This result is consistent with what Zaghloul et al. (2001) indicated: "The teacher who facilitates communication between learners moves among them with guidance and direction, clarifying the objective of this stage: for students to learn from one another and providing opportunities for all students." Participating in the competition and expressing opinions. (Zaghloul et al., 2001, p. 36)

3-2 Presenting, analyzing, and discussing the results of the pre- and post-tests for the control group:

Table (3)

Shows the arithmetic means, standard deviations, and calculated t-value for the pre- and post-tests of the control group

Skills	Unit of measurement	Pre-test		Post-hoc test		Mean of differences	Standard deviation of differences	Calculated t-value	Sig. value	Type of significance
		x	**Sd**	**x**	**sd**					
Chest control	Degree	2.875	0.806	7.125	0.719	4.250	1.065	15.969	0.000	Significant
Chip shot	Degree	2.625	0.619	7.000	1.155	4.375	1.204	14.533	0.000	Significant

By observing Table (3), which shows the arithmetic mean, standard deviation, calculated t-value for paired samples, significance level, and significance of the difference for the control group in the pre- and post-tests, it was found that there were significant differences between the pre- and post-tests; because the

significance level (sig) was less than the significance level at (0.05) and in favor of the post-test.

The researcher attributes the significant differences to several variables and influences that interacted in the learning process, leading to the emergence of significant differences between the pre- and post-tests. Among these was the feedback provided by the subject teacher, which played an effective role, as feedback on the teaching method is given directly to the student during the performance. This is given at the end of the lesson, as confirmed by Al-Dairi and Batanieh (1987): "After the application period ends and the lesson is ready, the teacher corrects the students' mistakes." (Al-Dairi and Batanieh, 1987, p. 66). In addition, the teacher's role, style, and method, as well as their guidance and direction in performing the exercises and games, all contribute to this. Stimulating students both physically and psychologically is one of the things created by the atmosphere of excitement, suspense, and competition, which brings joy and pleasure to the students. Furthermore, it creates a motivation for them to continue and a love of learning, and makes the student proactive in utilizing their abilities and interacting with the lesson. This is what Abu Harjah et al. (2000) confirmed: "The use of Exercises and games in physical education lessons stimulate the nervous and physical systems and play an influential role in developing the psychological aspects of accepting parts of the lesson with happiness and joy, which generates motivation and inclination towards practicing sports" (Abu Harja et al., 2000, p. 125). Melhem (2001) believes that Adelson's model is one of the effective educational models. Which are concerned with developing their individual mental, motor and physical abilities, as these educational models rely on good planning of education in a way that is easy for the student and follows his self-learning and paves his own way, and these models work to stimulate the learner's motivation and move his self-activity towards the learning goals within the scope of a specific plan (Malham, 2001, 238). This, in turn, motivated the members of the control group to attend regularly, be diligent, and show a strong desire to learn.

3.3 Presentation, Analysis, and Discussion of Post-Test Results for the Experimental and Control Groups:

Table (4)

Shows the arithmetic means, standard deviations, and calculated (t) value for the post-tests of the control and experimental groups

Skills	Unit of measurement	Experimental group		Control group		Calculated t-value	Sig. value	Type of significance
		x	**sd**	**x**	**Sd**			
Chest control	Degree	8.125	0.885	7.125	0.719	3.508	0.001	Significant
Chip shot	Degree	7.938	0.929	7.000	1.155	2.531	0.017	Significant

By observing Table (4), which shows the arithmetic mean, standard deviation, calculated (t) value for independent samples, significance level, and significance of the difference in the post-tests for the control and experimental groups, it was found that there are significant differences in the post-tests for the control and experimental groups; because the significance level (sig) It was less than the significance level at (0.05) and in favor of the experimental group.

The researcher attributes the significant differences to the use of Adelson's model, given its suitability in terms of organization and presentation for this group, as it is one of the active learning methods. This type of model increases student interest and keeps them in a state of continuous attention as they engage with the tasks assigned to them while applying the model's steps in the learning unit. And their interaction with it, as Al-Huwaidi (2005) indicates that "active learning methods aim to teach the learner how to learn, how to think, and how to participate effectively through strategies that make learners more effective and develop new skills that help them adapt to new developments, and through which they move from a passive state to an active one." The active, dynamic state helps in acquiring educational experiences effectively (Al-Huwaidi, 2005, p. 78). This improvement in post-test scores, favoring the experimental group over the control group, can be explained by the fact that Adelson's model is considered one of the effective educational models that focuses on developing individual and motor skills. These educational models focus on effective learning planning that facilitates student learning, encourages self-directed learning, and empowers students to forge their

own path. These models also stimulate student motivation and direct their independent activity towards learning objectives within a defined plan. (Malham, 2001, p. 338) The application of the educational program using Adelson's model is considered one of the educational methods. Active learning methods increase student interest and keep them constantly engaged in the tasks assigned to them while applying the model's steps in the learning unit and interacting with them. Mar'i and Al-Haliyah (1995) believe that active learning methods aim to teach students how to learn, how to think, and how to participate effectively through... Its strategies make learners more effective and develop new skills that help them adapt to new developments, through which they move from a passive to a dynamic and active state, thus helping them acquire educational experiences effectively (Al-Huwaidi, 2005, p. 78). Mar'i and Al-Haliyah (1995) believe that applying such strategies... Active learning models enable students to acquire specific skills, knowledge, and attitudes. This type of learning is enjoyable and engaging for the learner, transforming the educational process into a pleasurable partnership between student and teacher (Mar'i & Al-Haliyah, 1995, p. 265).

4. Conclusions and Recommendations:

4-1 Conclusions:

1. Adelson's model has a positive effect on learning the chest pass and layup skills in basketball.

2. Teamwork and cooperation among students increased the learning process, self-confidence, and the exchange of ideas.

3. The program, designed according to Adelson's model, contributed to increasing students' motivation towards problem-solving by allowing them to ask questions about their level of understanding of the skill.

4. The method used by the teacher helped develop the chest passing and lay-up basketball skills of the control group.

4-2 Recommendations:

1. Use the Adelson model in teaching the technical performance of basketball skills, as it is a modern, interactive model.

2. Emphasize the use of modern models in teaching physical education and move away from traditional methods and approaches.

3. Conducting courses and workshops to explore the effectiveness of modern educational models.

4. Conducting similar studies using Adelson's model on different samples and other games.

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