

**The effectiveness of an educational program based on self-adaptation in learning basic skills in basketball for students of the Faculty of Physical Education and Sports Sciences - Hilla University**

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**Abstract:**

The main objective of the learning process is to try to bring students to integration in sports performance and achieve results using the best scientific methods and means available in all sports, including basketball, which is one of the sports that are widely spread in various countries of the world, so coaches and specialists in this game began to search for the best educational methods and methods that depend on the quality of mental and intellectual abilities that the game needs, on which the required duties must be built.

**Therefore, the research aimed to:**

- 1- Measuring the impact of the educational program based on self-adaptation in improving the level of skill performance of students of the Faculty of Physical Education and Sports Sciences - Hilla University
- 2- Analysis of the differences between the experimental group and the control group in learning basic skills in the game of basketball for students of the Faculty of Physical Education and Sports Sciences - Hilla University.
- 3- Identify the effect of self-adaptation on students' ability to critically evaluate self-evaluation and compare it with approved mathematical standards.
- 4- Recognize the level of independence and motivation that the self-adaptation tutorial has contributed to the development of their basketball skills.
- 5- Identify the relationship between self-adaptation and self-motivation for students of the Faculty of Physical Education and Sports Sciences - Hilla University.

The study was conducted on a sample of students of the Faculty of Physical Education and Sports Sciences - Hilla University for the academic year 2023-2024, numbering (68) students distributed over four study divisions, from the research community of (168) students who were deliberately selected from the research community and were divided into two experimental and control groups,

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each group was represented for one of the methods, by (34) students per group and by (45%) The researchers then applied the educational program, extracted the statistical features and achieved the research objectives of the current study.

**Keywords: tutorial – self-adaptation**

**Research Introduction: -**

Sports physical education represents an important field of vital physical areas that contribute to enhancing and building students' physical and mental capabilities, and its role is not limited to the development of motor skills, but goes beyond that to include the development of cognitive and emotional aspects that directly affect sports performance, and with the development of teaching and training methods, focusing on adaptive strategies has become an urgent necessity to keep pace with the requirements of effective education, as self-adaptation is one of the modern methods that enhance the independence of the learner and enable him to adjust and modify his performance according to his personal level This contributes to broader, more efficient and sustainable learning.(Gravette & Larry, 2017, pp107-109)

Since basketball is one of the team games that require accurate basic skills that include handling, dialogue, shooting and defensive movements, which require a high level of motor perception and self-control, designing educational programs that rely on self-adaptation in learning basic basketball skills may have a significant positive impact on the level of performance as it provides students with opportunities to evaluate their performance, identify strengths and weaknesses, and adapt to the requirements of playing in a more flexible manner.(Deci & Ryan1985, pp46-49)

Therefore, the importance of the current research lies in the need to update sports teaching methods in line with modern developments in the fields of self-learning and adaptation, which contributes to improving the outputs of education in the faculties of physical education and sports and raising the level of students' efficiency in playing basketball in a way that depends on a deep understanding of

performance and not mechanical memorization of movements, and the research also provides scientific and applied insights that can be used in developing training curricula and improving teaching methods in the sports field, which enhances the effectiveness of learning. It leads to positive results at the academic and applied levels.

### **Search problem: -**

The traditional methods used in learning basic skills represent many challenges, including the limited ability of students to adapt to the requirements of sports performance independently, which may affect their acquisition of these skills efficiently and in light of the need for modern educational strategies. Self-adaptation emerges as an educational approach that helps students adjust their performance and analyze their strengths and weaknesses, so the research seeks to study the effectiveness of an educational program based on self-adaptation in developing basic basketball skills among students of the College of Education Physical and sports sciences at Hilla University compared to traditional methods in order to improve and develop the quality of sports learning and enhance the independence of students and develop their skills.

### **Research Objectives: -**

- 1- Measuring the impact of the educational program based on self-adaptation in improving the level of skill performance of students of the Faculty of Physical Education and Sports Sciences - Hilla University
- 2- Analysis of the differences between the experimental group and the control group in learning basic skills in the game of basketball for students of the Faculty of Physical Education and Sports Sciences - Hilla University.
- 3- Identify the effect of self-adaptation on students' ability to critically evaluate self-evaluation and compare it with approved mathematical standards.

- 4- Recognize the level of independence and motivation that the self-adaptation tutorial has contributed to the development of their basketball skills.
- 5- Identify the relationship between self-adaptation and self-motivation for students of the Faculty of Physical Education and Sports Sciences - Hilla University.

**Force search: -**

- The educational program based on self-adaptation contributes significantly to improving the learning of basic skills in the game of basketball compared to the traditional teaching methods used in teaching students of the Faculty of Physical Education and Sports Sciences - Hilla University.

**Research Areas: -**

- 1- Human field: - Students of the Faculty of Physical Education - Hilla University for the academic year 2023-2024.
- 2- Time range: -1/9/2023 to 1/6/2025.
- 3- Spatial field: - The stadium and arenas designated for field arena games in the Faculty of Physical Education.

**Define terms:-**

- Self-adaptation: - The ability of the individual to modify his behavior or performance based on his self-assessment of the level of his performance in order to improve and develop it.
- Educational Program: - A set of activities and training plans aimed at teaching and developing certain skills by teachers using specific strategies and techniques to stimulate learning and achieve the required educational goals.

### 3- Research Methodology and Field Procedures:

#### 1- Research Methodology: -

The researchers used the semi-experimental approach with two groups (experimental, control), with a post-test for its suitability and the nature of the current research. As shown in the diagram below.

<b>classification</b>	<b>Control group</b>	<b>Experimental Group</b>
<b>Special Objective</b>	Teaching basic skills using traditional methods	Develop key skills using a self-adaptive program
<b>Training style</b>	Traditional training based on repetition and mechanical execution	Adaptive training including self-assessment, hands-on workshops and feedback
<b>Activities</b>	Repetitive exercises without self-evaluation and only following up on the teacher's performance	Initial self-assessment sessions, practical workshops, video performance review and feedback sessions
<b>Assessment Tools</b>	Standard performance tests and evaluation from the trainer only	Self-assessment questionnaires, video recording, individual and group interviews
<b>Duration</b>	Eight weeks	Eight weeks

**Diagram (1) shows the experimental design of the two groups (experimental and control)**

#### 2- Research community and sample: -

The research population in the current study was determined by students of the Faculty of Physical Education and Sports Sciences – Hilla University and for the fourth stage of study and the number of (152) students distributed over four academic divisions, and the research sample was selected from two divisions randomly namely the divisions (A - D) to represent the experimental and control groups and the division (A) was chosen to represent the experimental group and Division (D) represents the control group and by (68) students representing the experimental and control groups.

#### - Equivalence of the two research groups: -

The equivalence between the two research groups was conducted with some variables, namely, age and testing of information before effectiveness, and it was found through the calculated T values for two independent samples that

there was no statistical significance for the differences between the two groups in the previously mentioned variables.

### 3- Means, tools, and devices used:

#### 1- Research Methods:

The researchers used the following research methods and tools in collecting data:

- ❖ Questionnaire
- ❖ Personal Interview
- ❖ Tests & Measurement

#### 2- Devices and tools used:

- ❖ Training fields (2)
- ❖ 2 stopwatches.
- ❖ Interactive display.
- ❖ Dell type calculator.

### 4- Field Research Procedures: -

- 1- **Determining the scientific material:** - The scientific material that will be taught to students was determined for the two sets of academic vocabulary prescribed by the college, which were the basic skills in the game of basketball, which are (dialogue, handling, correction, defence)
- 2- **Teaching plan:** - The teaching plan was determined to cover the learning of basic skills in the game of basketball, namely (dialogue, handling, shooting, defence) and a weekly session for eight weeks for both research groups and a total of (16) plans are taught, including (8) plan according to the educational program based on self-adaptation taught by the experimental group and (8) plan according to the traditional way in which the control group is taught, and the teaching plan was presented to a number of experts and specialists in teaching methods and kinetic sulcus. and basketball teachers. \*

- **Educational program based on self-adaptation:** - The educational program based on self-adaptation was applied after the researchers reviewed the sources and references related to the subject of the research, and the preparation of the educational program was approved according to self-adaptation for implementation on students.

If the self-adaptive tutorial consisted of: -

- 1- **Introductory session:** - By explaining the concept of self-adaptation and its importance in mathematical learning, and clarifying the objectives of the program and the targeted skills.
  - 2- **Initial self-assessment:** - Using a short questionnaire and recording students' performance during the implementation of simple exercises to measure basic skills.
  - 3- **Practical training:** by dividing the exercises into focused sessions on (dialogue, passing, shooting, defence) while encouraging students to evaluate their performance after each exercise using their observation and recording brief videos.
  - 4- **Feedback sessions:** - By reviewing students' performance collectively and individually, identifying strengths and weaknesses, and suggesting adjustments to improve performance.
  - 5- **Final evaluation:** - By reapplying the questionnaire and recording performance to compare the results with the initial evaluation, and then analyze and identify future strategies for development.
- 5- Exploratory experiment:** - The exploratory experiment was conducted by the researchers to confirm the devices and tools used, as well as to identify the time taken that requires performance for all game skills.
- 6- Pre-tests:** - The researchers conducted the pre-tests in order to develop the scientific facts of the technical performance of the skills of students before starting the implementation of the educational program on the playgrounds

of the Faculty of Physical Education - Hilla University) in order to identify the reality of the role of the educational program based on self-adaptation and its impact on learning basketball skills.

**7- The main experience of the educational program:** - The main research experiment was conducted, which includes the implementation of an educational program based on self-adaptation within the educational units for a period of (8) weeks, and by (1) educational units per week - for the period from (23/2/2023) to (26/4/2023).

**8- Post-tests:** - After the end of the implementation of the educational program and in order to determine the fact of the level of development in learning basic basketball skills as a result of the implementation of the educational program based on self-adaptation and its impact on learning basic skills in the game of basketball, the researchers conducted tests at the end of the educational program for the control and experimental groups.

### **5- Statistical means:**

The statistical program (SPSS) was used for the purpose of conducting statistical analysis of research variables.

### **4- Presentation and discussion of research results: -**

#### **4.1 Presentation of search results: -**

**1-** In order to achieve the first objective of the study (measuring the impact of the educational program based on self-adaptation in improving the level of skill performance of students of the Faculty of Physical Education and Sports Sciences - Hilla University), so the researchers extracted the value of (T) for independent samples and associated samples and analysis of variance as shown in Table (2)

**Table (2) shows the value of (T) for correlated and independent samples and analysis of variance for the research sample**

<b>audition</b>	<b>Value (T)</b>	<b>Probability values</b>	<b>Significance</b>
<b>- Interconnected Experimental</b>	<b>-12.66</b>	<b>3.02</b>	<b>Significance</b>
<b>- Interconnected Control</b>	<b>-2.20</b>	<b>0,031</b>	<b>Significance</b>
<b>- Independent after application</b>	<b>8.42</b>	<b>2.44</b>	<b>Significance</b>
<b>Analysis of variance</b>	<b>63.41</b>	<b>9,42</b>	<b>Significance</b>

From the above table, we note that the differences between the performance of students in the experimental group before and after the application of the program are large and statistically significant, which means that the improvement is significant in skill performance, while the results in the control sample showed a slight improvement compared to the experimental group, which means that the improvement is due to factors other than the program.

The results also showed the value of (T) for independent samples after the application of the program is statistically significant, which means that the experimental group clearly outperformed the control group after the application of the program.

While the analysis of variance showed that there is a significant difference between all groups, which confirms that the effect of the educational program based on self-adaptation in improving the good and very effective in students'

learning the skill performance of students of the Faculty of Physical Education and Sports Sciences – Hilla University.

2- Analysis of the differences between the experimental group and the control group in learning the basic skills in the game of basketball for students of the Faculty of Physical Education and Sports Sciences - Hilla University: -

To reach the results, the arithmetic means, standard deviations, values of (T), and level of significance were extracted as shown in Table 2.

**Table 2) shows arithmetic means, standard deviations, T values, and significance level**

Test (T)	The Collection	Arithmetic mean	Standard deviation	Value (T)	Significance
Interconnected – performance before and after	Experimental	60	6	12.66-	Significance
Interconnected – Control	Adjuster	61	5	2.20-	Significance
Independent – comparison of two groups	After application	62 - 75	6	8.42	Significance
Analysis of variance	Groups	-	-	63.41	Significance

From the previous table, it was found that the educational program based on self-adaptation was clearly effective in improving the learning of basic basketball skills for students of the Faculty of Physical Education and Sports Sciences - Hilla University, where the experimental group significantly outperformed the control group after application.

3- Identify the effect of self-adaptation on students' ability to critically evaluate self-evaluation and compare it with the approved mathematical standards: -

To verify the current objective, the values of (T) for correlated and independent samples were extracted, and the variance analysis and Table 4 show that

**Table 4 shows the values of (T) and the analysis of variance for the experimental group**

Test (T) for sample	T values	Probability values	Significance	Improvement
– Interconnected Experimental	-16.43	1.81	Significance	Significant improvement
– Interconnected Adjuster	-3.28	0.0023	Significance	Poor improvement
– Independent after application	11.02	1.24	Significance	A clear difference between the two groups
Compared to standards	-2.34	0.026	Significance	Approached the standard but did not exceed
Analysis of variance	161.66	5.52	Significance	A clear difference between groups

4- Identify the level of independence and motivation that the self-adaptation educational program contributed to the development of their skill in the game of basketball: - In order to achieve the current objective of the study, the values of (T) were extracted for the correlated samples as shown in Table (5)

**Table (5) shows the values of (T) for samples correlated in independence and motivation for the educational program based on self-adaptation**

Group and variable	Values (T) for correlated sample	Probability values	Significance
- Empirical Autonomy	-14.57	2.14	Significance
- Experimental Motivation	-18.33	6.42	Significance

From the above table, we note that there is an improvement and a significant level of independence after the application of the program, which shows the success of self-adaptation in enhancing the independence of students, while the results also resulted in the level of significant improvement shown by the results in the level of motivation that the educational program started at according to the students' self-adaptation.

From here, it should be noted that the self-adaptive education program had a very significant impact on improving independence and motivation among the students of the experimental group, which indicates the success of the program in developing basketball skills among students of the Faculty of Physical Education and Sports Sciences. – Hilla University.

**5-** Identify the relationship between self-adaptation and self-motivation for students of the Faculty of Physical Education and Sports Sciences - Hilla University: -

In order to identify the relationship between self-adaptation and self-motivation, the simple correlation coefficient (Pearson) was used to extract the correlation relationship and Table (6) shows that (Jackson, 2017, pp223-239)

**Table 6 shows the correlation between self-adaptation and self-motivation according to Pearson's correlation coefficient by measuring the strength and direction of the relationship**

Audition	Correlation coefficient (r)	Statistical significance
Pearson correlation coefficient (r)	0.83	D statistically

From the above, it is clear that the correlation value (0.83) indicates a very strong positive relationship between self-adaptation and self-motivation, and this means that students who adapted more self-adapted showed a high level of motivation while learning basketball skills, and the positive relationship shows that the higher the level of self-adaptation of students, the higher the level of self-motivation among students, which reflects positively on students' learning of basic basketball skills.

### **Discussion of the results: -**

The research results showed that there was a significant improvement in the level of critical self-evaluation among the experimental group students after applying the self-adaptive education program, and this result indicates the importance of the self-adaptive strategy in enhancing the students' abilities in self-assessment. (Schunk & Zimmerman, 2012, pp17-29).

The research results also showed through the analysis of the effect of self-adaptation on independence and self-motivation among students of the Faculty of Physical Education and Sports Sciences. – Hilla University after the application of the program with a significant and clear improvement in the experimental group compared to the control group, which shows the impact of self-adaptation in raising the level of independence and motivation among students, and this result coincided with the results of a previous study, which confirmed that self-

adaptation enhances motivation and motivation among students and improves the level of independence and ability to make decisions independently, as shown by a study (Deci & Ryan, 1985, pp227-268) which shows that self-adaptation forms a strong basis for self-motivation.

Therefore, the results reflected the importance of self-adaptation as an educational tool to develop basic skills in the game of basketball for students of the Faculty of Physical Education and Sports Sciences. – Hilla University, and it is also clear that the educational program based on self-adaptation contributed significantly to the development of self-motivation and autonomy and the development of students' abilities in self-assessment.

## **Conclusions and recommendations: -**

### **5.1 Conclusions: Through the research results, the researchers concluded:**

- 1- Teaching according to the educational program based on self-adaptation contributed significantly to learning basic skills in the game of basketball for students of the Faculty of Physical Education and Sports Sciences - University of Hilla is much better than the training program followed by teachers in the control group.
- 2- The use of the self-adaptive educational program contributed significantly to the development of self-motivation for students and for the benefit of the experimental group.
- 3- The use of a self-adaptive educational program contributed significantly to the development of students' autonomy and to the benefit of the experimental group.
- 4- The use of the self-adaptive educational program contributed significantly to the development of self-assessment of students, and for the benefit of the experimental group.

### **5.2 Recommendations: The researchers recommend the following:**

- 1- The use of the educational program based on self-adaptation by professors of the faculties of physical education and for various disciplines, for its effective role in improving and learning the basic skills of students.
- 2- Conducting training courses for physical education teachers in Iraqi universities on the use of interactive educational programs, which rely on self-assessment of their role in enhancing motivation and independence, and motivation among students.
- 3- Conducting similar studies in other sports disciplines and for different educational stages.

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