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The effect of the strategy of the quintuple learning cycle (5E) in learning some basic basketball skills for female students

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Abstract--In order to achieve the learning goals as quickly and as little as possible, as well as to achieve the best results in various activities and skills, many interested people have been studying technical means to organise the subject matter in physical education by focusing on the main learning methods for controlling and kinetic sports skills and how to invest These methods, as choosing the most appropriate methods, methods and strategies and the most economical in time and effort, is an important matter and a major aspect of the teaching process when teaching activities and sports motor skills in the field of physical education lessons, and from this objective understanding devoted effort through the use of modern strategies and their effective role sports activities and the development of events, especially for students, to raise the scientific aspect After presenting, analyzing, and discussing the results, the researcher reached the following conclusions ,The strategy of the five-year learning cycle (5E) has a positive effect on learning some basic skills of basketball in the research sample, The significance of the statistical differences between the post-tests for the experimental and control groups showed significant differences in favour of the experimental group in all tests, The experimental group outperformed the members of the control group in (plumping-chest handling-shooting from stability).

Keywords--strategy, quintuple, learning cycle (5E), basketball skills.

Introduction

In order to achieve the learning goals as quickly and as little as possible, as well as to achieve the best results in various activities and skills, many interested people have been studying technical means to organise the subject matter in physical education by focusing on the main learning methods for controlling and kinetic sports skills and how to invest. These methods, as choosing the most appropriate methods, methods and strategies and the most economical in time and effort, is an important matter and a major aspect of the teaching process when teaching activities and sports motor skills in the field of physical education lessons, and from this objective understanding devoted effort through the use of modern strategies and their effective role sports activities and the development of events, especially for students, to raise the scientific aspect of the importance and role of basic skills in basketball. The research problem is that the information received by the student is theoretical and practical. Why does it not remain in the memory for a long time as a result of focusing on the cognitive aspect only of memorising facts and concepts as a theoretical material, whether it is skills materials, law or game plans? So the researcher decided to find a strategy that could provide more information and knowledge by resorting to asking questions and answering and activating. So she devoted her efforts to researching this issue because of its significance in the student's process of learning basketball skills. Level of performance and cognitive achievement, improving their teams and results, and contributing positively to the development of the game of basketball.

The practical part

The researchers used the experimental method on first-year students in the College of Physical Education and Sports Sciences at the University of Al-Qadisiyah for the academic year (2021–2022), whose total number is 60 students divided into two divisions (A and B), with thirty students for each division, and the sample is. The first group of female students is a division (b) working in the manner followed by the subject teacher, and their number is 20. They represent (33.33%) of the original population, which is the control group, while the second group of female students is a division (c) working in the manner followed by the subject teacher. It is the experimental one that works with the strategy (the five-year learning cycle 5E) and its number is 20 students, and they represent (33.33%) of the original population. Female students outnumbered male students by (5) in each section of the exploratory experiment and (16.17%) in the research community.

Field Research Procedures Steps

Determining the basic basketball skills used in the research

The basic skills of basketball, the subject of the research, were determined by the researcher according to the curriculum vocabulary for the skills in the first stage of the College of Physical Education and Sports Sciences-University of Al-Qadisiyah from the academic year (2021-2022 AD) for the first semester, and the basic skills in basketball are (Al-Tabataba-handling-scoring).(De Wail et al 2022)

Determining the basic skills tests used in the research

For the purpose of determining the tests of the basic skills used in the research (plumping-handling-scoring), the researcher looked at the scientific sources and references for this aspect, and a special questionnaire was prepared to explore the opinions of experts and specialists in the fields of teaching methods, kinetic learning, and basketball, see Appendix (1), and after collecting forms, data discharge, and statistical processing, The nomination of basic skills that achieved a degree of (60) or more of importance and of (54.6%) of relative importance was accepted, according to the opinion of eleven (111) experts and specialists. testing the accuracy of the free throw scoring skill (10 throws)

Exploratory experience

An exploratory experiment is a preliminary experimental study carried out by the researcher on a small sample before she conducts her research in order to choose the research methods and tools. Therefore, the exploratory experiment was conducted on (5/12/2021) in order to identify the following matters:

- Determine the most important obstacles that the researcher will face.
- The number he needs from the assistant staff
- Ensure the safety of the equipment's work and its powers.
- Appropriateness of the tests to the research sample
- Time to take the tests.

The scientific basis for the tests

Honesty

Honesty is also one of the most important criteria for test quality. Validity does not mean the test's connection to itself as well as stability, but it does mean the relationship between the test and some external criteria that are distinguished by being independent of the test or measuring instrument. And the validity of the test means what does the test measure? This measurement is correct, and it is defined as the accuracy with which the test measures what it was designed for.(picciano et al 2016). The tests were presented to a group of experts and specialists in the fields of testing, measurement, learning, teaching methods, and basketball, and they confirmed the validity of using the skills tests.

Stability

The test method was chosen and the test was re-applied to a sample of ten female students from outside the research sample on (12/8/2021) at ten in the morning, and the test was repeated seven days after the first test on (12/15/2021) at ten in the morning. The result was that all tests had a high coefficient of stability.

Objectivity

It is the agreement between two judgments when measuring an individual in the results obtained by using the correlation coefficient between the results. Subjectivity is part of the error variance, and it is a kind of constancy. Therefore,

objectivity is a matter of degree. (Dunford et al 2021). So, the tests used in the research were graded by two different people. The simple correlation coefficient (Pearson) between the results of the two different people was used to figure out how objective the tests were. (Griffiths et al 2019)

The educational curriculum and its implementation

After reviewing the vocabulary of the basketball curriculum for students of the first stage at the College of Physical Education and Sports Sciences-University of Al-Qadisiyah, the educational curriculum for the strategy of the five-year learning cycle 5E was developed in the form of educational units in the fields of teaching methods and basketball. The strategy of the five-year learning cycle (5E) outside the educational units for students. In preparing the educational units for offensive skills in basketball, the researcher relied on the teaching professors and their experience in the field of teaching basketball, as well as following up on the scientific and educational resources and consulting experts and specialists in the field of basketball and teaching methods. giving continuous feedback during performance in the educational unit, according to the following points:

The stages of the application of the five-year learning cycle **Busy phase**

At this stage, the teacher works to arouse the students' interest in the topic of the lesson by asking questions and receiving the students' answers, and this is a good opportunity for the teacher to reveal the students' levels, mental abilities, and misconceptions. During this stage, the students present what they already know about questions such as why and how. (Brett et al 1993). The goal of this stage is to motivate the learner and arouse his motivation, curiosity, and interest, and the role of the teacher is to create excitement and encourage prediction, and to ask thought-provoking questions, revealing the learner's previous experiences and showing how he thinks about the topic or concept. The important concepts presented to his learners: 1).

Exploration phase

At this stage, students are given an opportunity to work together with less guidance from the teacher, and his role is to help students generate questions by asking questions and observing. According to Piagetian theory, students at this stage reach a state of cognitive imbalance, which prompts them to test predictions and hypotheses, choose alternatives, and discuss them. With peers, recording notes and ideas and commenting on judgments, (Linck et al 2018). The learning is centred around the student and his activity in discovering the concept to be learned by performing a series of operations, making use of the available materials and directions to collect data through sensory-motor experiences to realise the meaning of the concept they are studying. To explore (2)

The interpretation stage

At this stage, the teacher must encourage students to interpret concepts in their own way, clarify their own interpretations, listen to and evaluate others' explanations, and the teacher's explanations.

Expansion phase

Students apply concepts and skills in new situations, using formal definitions while reminding them of alternative explanations, data, and evidence to explore new situations, because students must use previous information to ask questions, make decisions, suggest experiments, and work out solutions. This stage is suitable for students to apply what they have learned, by example or by additional experiences to provoke new investigative skills for them, or by studying the interrelationship between the learning curve and sufficient proficiency. at the same level at a higher level.

Calendar stage

At this stage, evaluation takes place during the lesson, by following up and observing the teacher for the students' knowledge and their application of advanced concepts, and the amount of change in thinking. Here the teacher asks questions that encourage investigation and exploration. It is important here to recall that the evaluation process should be postponed until the completion of the lesson, and the teacher can know, through his teaching experience, the way his lesson is going, and is helped by asking self-assessment questions such as: What have the students learned? Is it related to the objectives you set for the lesson? How can they explain what they have learned to their peers?

The main research experience

Tribal tests

After the researcher applied two introductory units to familiarise the students with skills and tests, the researcher conducted tribal tests on the research samples of the control and experimental groups in skill performance on Wednesday (22/12/2021) and on the playground of the College of Physical Education and Sports Sciences-University of Qadisiyah and with the help of the assistant work team. The researcher used the skill performance test to find out the basic skills of basketball (like dribbling, passing, and scoring) based on how well the students did technically. The researcher has fixed the conditions and the method of conducting the tests in order to achieve the same conditions when conducting the post tests. The following has been done through it:

- Describe the basic skills in detail before conducting the test on the sample members.
- Performing skills so that sample members understand them and the correctness of their application

Implementation of the educational program (5e learning cycle strategy)

The teaching was applied with the design of (the five-year learning cycle strategy 5E) to the members of the experimental group within the educational units prepared for the first-stage basketball, which amounted to (16) educational units, at a rate of two units per week, with a time of (90) minutes for one educational unit, as the teaching continued for eight weeks, while the control group studies according to the approved educational method followed by the subject's teachers. Teaching for the experimental group started on Sunday (26/12/2021) and continued until Wednesday (16/2/2022). The educational units included the vocabulary of educational content by designing education with teaching methods to display the educational material, including the vocabulary of strategy, and the advantages that this method possesses that help the female learners and thus teach them according to their characteristics and capabilities, as well as "the use of exercises with appropriate repetitions and teaching aids according to the characteristics of the learners and their needs to acquire and learn the cognitive and skill aspects within practical educational units as detailed in Appendix (7).

Dimensional tests

On Wednesday (2/23/2022), the researcher conducted post-tests of the skills under investigation for the two groups at the College of Physical Education and Sports Sciences-University of Al-Qadisiyah itself, with the assistance of the subject teacher and under the direct supervision of the researcher.

Statistical indicators

The researcher used the statistical package for social sciences (SPSS) programme to extract statistical means.

Presentation, analysis, and discussion of the results

Presenting the results of the pre and post tests of the experimental group in the research variables and their analysis.

Table 1

It shows the arithmetic means, standard deviations, and the calculated and tabulated (t) values of the results of the pre and post tests of the research variables for the experimental group

Statistical parameters Variables	pre-test		post-test		t value calculated	Sig	Indication type
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
bouncing	19.35	3.57	14.44	3.21	5387	0.000	moral
handling	12.47	2.58	18.64	3.98	4.99	0.000	moral
Scoring	3.69	1.28	6.36	1.89	5.69	0.000	moral

Presentation of the results of the pre and post tests of the control group in the research variables and their analysis

Table 2

It shows the arithmetic means, standard deviations, and the calculated and tabulated (t) values of the results of the pre and post tests of the research variables for the control group

Statistical parameters Variables	pre-test		post-test		t value calculated	Sig	Indication type
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
bouncing	19.71	3.74	16.87	3.87	4.12	0.001	moral
handling	11.99	2.56	15.64	2.17	4.31	0.000	moral
Scoring	3.24	1.21	5.28	1.16	4.30	0.000	moral

Presentation of the results of the post-tests for the research variables from the experimental and control groups, as well as an analysis of those results

Table 3

It shows the arithmetic means, standard deviations, and the calculated and tabulated t-values for the results of the dimensional tests of the research variables for the experimental and control groups

Statistical parameters Variables	pre-test		post-test		t value calculated	Sig	Indication type
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
bouncing	14.44	3.21	16.87	3.87	4.94	0.000	moral
handling	18.64	3.98	15.64	2.17	4.84	0.000	moral
Scoring	6.36	1.89	5.28	1.16	3.51	0.002	moral

Discuss the results

The results are presented in the aforementioned tables (7, 8, and 9), which show that there are differences between the experimental group and the control group. The researcher attributes the reasons for these differences to the effectiveness of using the strategy (5E learning cycle) in terms of planning and implementing educational units, which facilitated the process of understanding and absorbing the skills under study in its three sections (preparatory, main, and final), in addition to the reasons for these differences due to the new educational situations that the students were exposed to, which are characterised by the clarity of the goal and what the students are required to achieve, and which were not recognised in the regular educational units. Which led to a clear improvement in their performance, and this is what (Fouad Suleiman Qallada) pointed out: "The clarity of the goals and their identification in light of certain behaviours or levels of performance, they are meaningful and effective (), and the interaction between

the members of the same group and their active discussions about the educational task. What they do affects their understanding of the educational material.

In addition, the steps of the strategy of the five-year learning cycle (5E) included a variety of teaching methods such as cooperative learning, brainstorming, discussion, and dialogue, which helped to use different mental skills and train students in the manners of dialogue and discussion, participation in performance (practical application), respect for the opinion of others, and working within organised cooperative groups, making each student keen on Supporting each other and making the educational process full of creativity and fun, as well as diversity in the use of educational aids and activities such as pictures, maps, summaries, and exercises prepared by the researcher, led to a clear development in the technical performance and accuracy of the skills investigated. One of these is the strategy of the five-year learning cycle 5E, and this was confirmed by the study of Aida Ali, Afaf Abdullah, and Basma Naim (2011), which confirms that the student who possesses higher-order thinking skills and metacognition has the ability to act in changing situations within the game, so she works to evoke previous skills and experiences. And employ them in playing situations to achieve excellence in these areas. Standing by the right decision and good implementation of these skills. (Brett et al 1993)

Conclusions

After presenting, analyzing, and discussing the results, the researcher reached the following conclusions:

- The strategy of the five-year learning cycle (5E) has a positive effect on learning some basic skills of basketball in the research sample.
- The significance of the statistical differences between the post-tests for the experimental and control groups showed significant differences in favour of the experimental group in all tests.
- The experimental group outperformed the members of the control group in (plumping-chest handling-shooting from stability).
- The five-cycle learning strategy (5E) helped in teaching design to organise the work of the teacher and invest time better by providing him with general and specific information about the students.
- Instructional Design Students in the experimental group got better at basketball because of the five-year learning cycle (5E).

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