

Effect of TPS strategy in teaching basketball defensive skills in female students of Physical Education and Sports Sciences

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ABSTRACT

The aim of the present study was to recognize the effect of the TPS strategy in teaching defensive skills in basketball for female students. The research community was identified, represented by the second-level students of the faculty of Physical Education and Sports Sciences of Dhi Qar University. In this study, participants were allocated into two groups, experimental group and control group, with n=16 participants in each group. Control group participants were given training with basic curriculum and experimental group participants were given educational training based on the TPS (Think - Pair - Share) strategy. The findings of the present study revealed significant improvement in the defensive skills of the participants of the experimental group.

KEYWORDS

TPS strategy; Basketball; Defensive skills; Physical Education.

1. INTRODUCTION

The physical education training to the students holds key importance in achieving the educational goals in the university or school and is the first through which the desired benefits are reaped in the prescribed curriculum. Hence emphasis is given on the need to develop modern teaching methods to meet the requirements of the training. The TPS (Think-Pair-Share) strategy is one of the essential strategies in teaching and learning; it is based on the participation of the most significant number of students in the class and giving them enough time to think on their own and then think with the rest of the colleagues and share their ideas. This leads to a significant improvement in student achievement, their retention and consolidation of information in their minds will be better than using the usual method.

The TPS strategy has multiple benefits for the teachers as well as for the learners. It makes the female students more focused towards the educational process. It makes the learners more enthusiastic and motivated with great zeal to increase their level of academic performance by making the educational atmosphere healthy and competitive. Healthy educational atmosphere helps the teachers to teach their students with more positivity and constructivism (Al-Shamry and Al-Dulaimi, 2012).

Defensive skills are among the essential skills, which makes the teacher to utilize diverse teaching strategies based on effective interaction between the teacher and the student, which is reflected in the correct construction of the physical education lesson (Abood et al, 2022; Mashkooor & Hameed, 2022; Monadi et al, 2022). Hence the present study was conducted to increase the level of defensive skills among female students by use of modern strategy in the form of TPS. Hence the present study was an attempt by the researchers to consolidate the use of modern strategies in teaching, to serve as the basic building block on which physical education teachers depend when planning and preparing for their lessons (Obaid, 2008).

The educational curricula based on teaching strategies makes the learner an active and vital element in the lesson, as the learner has a principal role. The student is the focus of the educational process, so the researchers decided to use the TPS strategy in the lesson, through which basketball defensive skills are taught, in a step to consolidate concepts based on the use of modern strategies in teaching, so that strategies may be more appropriate to basketball skills (Obaid, 2008).

The objective of the present study was to find out the effect of the TPS strategy in teaching some defensive skills in basketball for female students and to identify the significant differences between groups in teaching defensive skills in basketball for female students. The hypotheses were that statistically significant differences would be found between experimental group and control group in teaching defensive skills in basketball players, and that statistically significant differences would be found between pre-test and posttest findings within both groups in teaching defensive skills in basketball players.

2. METHODS

2.1. Design and participants

The present study had an experimental design, with the participants allocated in two groups: experimental group and control group. The study was completed within the time frame of December

2020 to February 2021. The research community, with a total of 49 students was identified, represented by second-year's students of the faculty of Physical Education and Sports Sciences, of Dhi Qar University, in the academic year 2020-2021. A total of 32 students, from two divisions (A and B), were recruited as sample for the study. The sample was selected based on the random sampling method using lottery method. The proportion of the research sample was (65.306%) from the original community. Participants were equally allocated in two groups with $n=16$ in each group. In the present study, 16 students representing the division (A), using the (TPS strategy), and the second random group numbering 16 students representing Division (B), using the method followed by the subject's teacher (Al-Rahman, 1996).

2.2. The homogeneity of the sample

To overcome the individual differences, the researchers conducted a test for homogeneity within the members of the same group by using the law of the skew coefficient in the research variables (Tables 1 & 2).

Table 1. The homogeneity of the experimental group members in the research variables

| Variables | Unit | Arithmetic mean | Standard deviation | Standard error | Skew coefficient | Indication |
|-----------|-------|-----------------|--------------------|----------------|------------------|------------|
| Age | Years | 20.466 | 1.187 | 0.829 | 0.091 | Homogenous |
| Height | Cm | 156.4 | 6.596 | 0.923 | -0.384 | Homogenous |
| Weight | Kg | 51.6 | 7.184 | 0.992 | 0.513 | Homogenous |

Table 2. The homogeneity of the members of the control group in the research variables

| Variables | Unit | Arithmetic mean | Standard deviation | Standard error | Skew coefficient | Indication |
|-----------|-------|-----------------|--------------------|----------------|------------------|------------|
| Age | Years | 19.866 | 0.833 | 0.902 | 0.274 | Homogenous |
| Height | Cm | 160.05 | 3.953 | 1.01 | 0.873 | Homogenous |
| Weight | Kg | 53.2 | 10.159 | 0.928 | 0,717 | Homogenous |

2.3. Equality of the sample

To ensure a single starting line and the absence of differences between the members of the two groups, the researchers used the t-test for independent samples to extract the equivalence (Sabr, 2005), as it is described in Table 3.

Table 3. Equivalence of the control and experimental groups in the research variables

| No | Variables | Unit | Control group | | Experimental group | | T | p |
|----|---------------------|--------|---------------|-------|--------------------|-------|-------|-------|
| | | | Mean | SD | Mean | SD | | |
| 1 | Defensive moving | Second | 10.292 | 1.169 | 10.164 | 0.951 | 0.329 | 0.745 |
| 2 | Defensive follow-up | Number | 6.8 | 1.146 | 6.733 | 1.279 | 0.15 | 0.882 |

2.4. Devices, tools and means used in the research

In the present study, many tools, devices, and aids were used for the purpose of data collection. In order to achieve the objectives of the research, various literature sources were referred by the researcher. Tests and measurements were conducted by asking the participants to fill a questionnaire. This questionnaire included selected tests.

The equipment and tools used for assessment, observation and for data collection included 20 legal basketballs, a tape measure for length, a device for measuring weight, one manual stopwatch and one whistle.

2.5. Determining the skill tests

The test is "a set of exercises given to the individual to identify their abilities, aptitudes or competence". Many tests can measure the skills to be studied, and each of them has specific characteristics (Hassanein, 1995). The researchers presented the tests to experts and specialists, to determine the appropriate test through a form prepared for that, and the test with the highest percentage among the other tests was nominated (Table 4).

Table 4. The percentages of experts' selection of basketball skill tests

| No | Skills | Test | Percentage |
|----|----------------------------------|--|------------|
| 1 | The move of the defensive player | Defensive movement speed | 81.818 % |
| | | Defensive movement | 18.181 % |
| 2 | Defensive follow-up | Pulling the ball from under the goal within 10 seconds | 72.727 % |
| | | Pull balls from the target by jumping | 27.272 % |

2.6. Description of the tests

2.6.1. Defensive Move Test

This test was intended to measure the speed of defensive movement of the player. Various tools required for the measurement of this test included basketball court, medicine balls, chalk, stopwatch, whistle, timer or tester and tape measure. At the start of this test, points were determined from 1 to 6, provided that the distances were equal between the starting point and the other points, the distance measured 6.25 m, where the starting point (starting point) was measured from the vertical point located directly from the point of the basket on the ground. Followed by this, the participant was asked to take a defensive stance, upon hearing the beep, the student was asked to move from point (1) to (4,3,2) face forward and back to point (1) with a defensive movement backwards, meaning that the back is in front of the basket board, and when the point is completed (4), The return to point (1) is to move to the points (5,6) and without stopping, and back to point (1). The scoring was done by calculating the total time taken by the participant to perform the test (Sabr, 2005). Each student was given two attempts, and the time for the best attempt was documented.

2.6.2. Test of pulling the ball from under the goal (defensive follow-up) (Al-Rahman, 1996)

This test was intended to measure the speed of pulling the ball from under the target within 10 seconds through the phosphate system. Various tools required for the measurement of this test included a basketball court, ten basketballs, a stopwatch, and a whistle. When instructed, the participant was asked to jump and pull the ball from target, that is thrown on the target board by the teacher, then jumps to pull another ball and so on for a period of 10 seconds. The scoring was done by calculating the number of times the ball was pulled during 10 seconds.

2.7. Experiments

The two researchers conducted the exploratory experiment on Sunday, 6/12/2020, in the basketball court of the Faculty of Physical Education and Sports Sciences - University of Dhi Qar. The exploratory experiment included 10 students as sample other than the sample of primary experiment. The exploratory experiment was conducted to identify and resolve the actual problems which researcher might encounter while conducting which might affect the primary experiment. (Abdullah and Fayes, 1999). The purpose of the exploratory experiment was to ensure the validity of the devices and tools used in the research, to ensure that the sample members understand the vocabulary of the tests, to identify the obstacles and difficulties and avoiding them, to recognize the efficiency of the assistant team.

2.7.1. Main Experiment Procedures

In the present study, pre-test measurement of defensive skills of the participants was done by the researchers in the month of December 2020 in the basketball court of the College of Physical Education and Sports Sciences, Dhi Qar University.

2.8. Educational Curriculum

Prior to the start of the experiment, approval was obtained from the Dean of the Faculty of Physical Education and Sports Sciences / the University of Dhi Qar for conducting the research by taking second-level students as the participants of the study. The researchers prepared a unique educational curriculum using the TPS strategy (Think - Pair - Share) in teaching the skill of defensive movement and defensive follow-up to the students. Participants were allocated in two groups. The Experimental group participants were provided with the educational curriculum according to the TPS strategy (Think - Pair - Share). Educational units and the academic units for this group were conducted according to the weekly schedule established by the college. The time of the academic unit was 90 min, divided as Preparatory section (15 min), Main Section (65 min), and educational activity (20 min).

2.9. TPS strategic stages are given (Think - Pair - Share)

A-: TPS strategic stages are given (Think - Pair - Share) as follows: **(Thinking (Think) (1) min)**: This stage begins when the teacher asks the students a question related to what was explained in the lesson. Each student concentrates and thinks calmly, then records the answers and notes on the specified sheet to identify ideas. At this stage, the teacher should avoid questions with specific yes or no answers. **(Pairing (5) min)**: In this, female participants were asked to get divided into pairs, and then each participant was asked to turn towards her partner to share their ideas. By sharing and comparing each other's ideas, they were asked to form one answer which must be most convincing. In the meantime, the teacher moved among the students to guide and follow up on the students. **(Participation (share) (7) min)**: In this step, the teacher asked the pairs to verbally express and share their ideas. Effective practices were transferred from one pair to another so, a quarter or half of them presented with what they thought and at what wrote the students' answers on the board (or on one of the learning environment tools); To be clear to the students, and to recognize the correct answers. **(Evaluation: (7) min)**: The teacher evaluated the students using discussions and short tests during or after the activity to determine the level of understanding of the B- Applied activity (45) min: In this,

the defensive skills were applied through exercises that the teacher asked female students to perform 3- Final section (10) min (Hassanein,1995).

In the control group, the educational curriculum was given to the participants according to the method of the subject teacher and by two academic units per week, where the number of academic units reached 6 academic units, and the academic units for this group were conducted according to the weekly schedule established by the faculty (Obaid, 2008).

Post-test: After successful completion of implementation of the educational curriculum, post-tests were conducted on the participants of the study in the basketball court and under conditions similar to the pre-tests in terms of (place - time - assistant work team - tools) to obtain accurate results.

2.10. Statistical analyses

Statistical analysis was done using the Statistical Package for the Social Sciences (SPSS). The results were extract and processed using means, standard deviations, and different statistic tests including homogeneity tests and independent sample t-tests.

3. RESULTS AND DISCUSSION

In Table 5 we present and analyze the results of the differences between the pre and post-tests of some defensive skills of the experimental group, and in Table 6 we present and analyze the results of the differences between the pre and post-tests for some defensive skills of the control group.

Statistical analysis of the findings of the present study revealed significant differences between pre and post-tests. Based on the results of the study, research hypothesis is accepted. And null hypothesis was rejected. The possible reasons behind the statistical significant results are, firstly, that the TPS education curriculum is based on the scientific foundations. Secondly the exercises were performed with correct technique, selected for specific group of muscles, keeping the optimum repetitions consistent with the level and ability of the participants. In addition, the two approaches included selected exercises, consistent with the age and capabilities of the students. The experimental group applied the curriculum prepared by the researcher according to the TPS (Think - Pair - Share) strategy, while the control group applied the curriculum prepared by the subject teacher. Both the groups remarkable development was observed in terms of increase in their level of performance in defensive movement skill and defensive follow-up.

Table 5. Results of the experimental group

| Variables | Unit | Pre-test | | Post-test | | T | p |
|---------------------|--------|----------|-------|-----------|-------|-------|--------|
| | | Mean | SD | Mean | SD | | |
| Defensive move | Degree | 10.164 | 0.951 | 8.744 | 0.539 | 8.422 | 0.000* |
| Defensive follow-up | Degree | 6.733 | 1.279 | 8.4 | 0.726 | 5.358 | 0.000* |

* Significant at ≤ 0.05

Table 6. Results of the control group

| Variables | Unit | Pre-test | | Post-test | | T | p |
|---------------------|--------|----------|-------|-----------|-------|-------|--------|
| | | Mean | SD | Mean | SD | | |
| Defensive move | Degree | 10.292 | 1.169 | 9.595 | 1.012 | 3.229 | 0.006* |
| Defensive follow-up | Degree | 6.8 | 1.146 | 7.8 | 0.676 | 3.873 | 0.002* |

* Significant at ≤ 0.05

Despite the significant findings in both the groups, still the development in the control group was not at the level of development of defensive skills amongst the participants of experimental group. Since, the curriculum was based on the subjective decisions of the teachers. Without taking into account the individual differences, all the students were bound to obey the commands without any discussion regarding same. This led the teachers to be unaware regarding capabilities of the students. Thus the lack of cooperation and enthusiasm was also seen amongst the students of the control group while performing the defensive skills in contrast to the experimental group. The TPS strategy adopted by the researchers gave a vital role for each student to participate in the discussion and query session. This helped the student to understand the skill and learn its correct method of application. This indicates the positive reflection of the strategy used by the researchers, and consequently, these moral differences appeared clearly between the pre and post-tests (Al-Shamry and Al- Dulami, 2012; Obaid, 2008; Sabr, 2005).

The statistical analysis of the findings of the present study revealed significant differences between the experimental and control groups in the post-tests of the skill (defensive movement and

defensive follow-up) in favor of the experimental group (Table 7). Hence the research hypothesis was accepted and researchers rejected the null hypothesis in the study.

Table 7. Results of the post-tests in the control group and experimental group

| Variables | Unit | Control group | | Experimental group | | T | p |
|---------------------|--------|---------------|-------|--------------------|-------|-------|--------|
| | | Mean | SD | Mean | SD | | |
| Defensive move | Degree | 9.595 | 1.012 | 8.744 | 0.539 | 2.872 | 0.008* |
| Defensive follow-up | Degree | 7.8 | 0.676 | 8.4 | 0.726 | 2.324 | 0.024* |

**Significant at ≤ 0.05*

TPS is a novel strategy of teaching. Its multiple stages, cognitive questions and various exercises contributed to provision of maximum information regarding basketball game skills, TPS strategy helped the participants by augmenting their level of thinking, increased their focus and attention, made them more motivated and enthusiastic for giving their best performance in the game. TPS strategy led to a fundamental improvement in students' achievement, retention and consolidation of information in their minds in contrast to the usual method of teaching. It creates a democratic atmosphere and reduces the authoritarian atmosphere in the classroom, thus increasing the motivation for learning and thus increasing academic achievement (Obaid, 2008).

In addition to this, the learners in the experimental group had more chances to participate in the interactive sessions with their teacher. It helped them in thorough understanding of the skills by increased exploration regarding the concept and its practical application in real game. TPS strategy makes the learners link between the concept and the main and subconcepts, which makes the learner go through a replay.

Continuous education, makes learning meaningful. The regular teaching methods are purely based on the subjective decisions taken by them, overlooking the individual abilities and differences in the level of understanding of the students. Every student is different so their minds are. All the students cannot be taught with the similar strategy. Thus, it does not contribute to create real learning among students. Abdul Rahman (1996) stated that prevailing traditional method in the schools does not contribute in creating real learning amongst students. Hence, regular attempts have been made by

researchers to identify the modern methods of teaching, which help the students to understand the key concept through speaking, deep thinking and the self-organizing ability.

4. CONCLUSIONS

Based on the findings of the present study, the authors concluded that the curriculum prepared by the two researchers using the TPS strategy (Think - Pair - Share) for the experimental group, as well as the curriculum prepared by the teacher according to the method used for the control group, had a positive role in developing the level of skill performance for both groups. The TPS (Think - Pair - Share) strategy had a significant impact on improving the level of skill performance (defensive movement and defensive follow-up) in basketball among the experimental group members. Therefore, the authors recommend to include the TPS strategy in the educational curriculum of the students to raise their level of performance in the basketball game.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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