Thi Qar University Journal of Physical Education Vol 2 Issue 3 P1

مجلة جامعة ذي قار لعلوم التربية البدنية

مجلة علمية محكمة تصدرها كلية التربية البدنية وعلوم الرياضة

The effect of the linear programmed learning strategy on learning the skill of transmitting from the bottom for second-year students

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Article history:
Accepted: 20/ 5/ 2025
Published online: 20/6/ 2025

Keywords:
-Linear programmed learning strategy,
- bottom transmitter
-female students.

ABSTRACT

Research Objective Use Strategy Linear programmed learning in learning the skill of sending from below to female students Second year of school, learn about the impact of using the strategy Linear programmed learning in learning the skill of sending from below to female students The second academic year, and the researcher used the experimental approach with two experimental and control groups being the most appropriate approach to address the research problem, the research sample was chosen randomly by lottery and they are students of Division (i) to represent the experimental group, which used the strategy Linear programmed learning in learning the skill of transmitter from Below, the members of the control group have used the method used in the curriculum prepared for the college, and the number of members of the research sample (35) students for each group, and the final number of sample members (70) students, recommends the researcher The results of the research showed that the linear programmed learning strategy contributed positively to improving the learning of the skill of transmission from below among second-year students.The study confirmed that the use of immediate reinforcement after each answer helped enhance students' understanding of the skill more effectively, and it was found that interaction with the successive and diverse stimuli provided by the programmed learning strategy helped accelerate skill learning and reduce the possibility of error, and it is recommended to generalize the use of the linear programmed learning strategy in learning other mathematical skills, because of its positive impact on accelerating learning and improving performance, and it is necessary to develop and adapt this strategy to suit different levels of skills Sports to ensure the continuity of its effectivenessIt is recommended to continue conducting future studies on the impact of programmed educational strategies in improving the physical skills of male and female students..

1- Introduction:

The educational process is the main pillar of the progress of societies through the ages, where the teacher plays a pivotal role in developing students' abilities and developing their skills. This is achieved by employing modern educational strategies that add diversity and integration between the mental and psychological aspects, which contributes to creating a stimulating learning environment that combines enjoyment and readiness to learn, and keeps boredom away and increases the effectiveness of students.Studies show that some educational strategies are able to achieve specific aspects of learning more effectively than others, based on the circumstances of the teacher, the potential of the educational environment, and the extent to which mental and psychological processes are activated during lessons. The linear programmed learning strategy is one of the most prominent of these methods, as it contributes to activating the role of the learner and making him an active focus in the learning process.

In addition , the use of programmed learning strategies contributes to improving the level of skill performance of learners, especially in basic motor skills such as those required by volleyball. These strategies allow immediate feedback, which helps students correct their mistakes and develop their performance continuously, and linear programmed learning is one of the modern educational strategies that depend on dividing the educational material into small and sequential steps that allow learners to move from one step to another according to their individual abilities. It helps This method achieves a gradual understanding of the material, which contributes to enhancing the process of self-learning and increasing students' motivation towards learning.

The skill of serving from below is one of the basic skills in volleyball, which is used as an effective way to start playing and organize attacks. The importance of this skill for students in the second stage of study is highlighted as it forms the basis for the development of the rest of the technical skills in the game. Therefore, learning them requires the use of effective teaching strategies that help students acquire them accurately and proficiently.

The importance of this research lies in the fact that it seeks to explore the impact of the linear programmed learning strategy in learning the skill of transmission from below among second-year students, which can provide a scientific base that supports the use of this strategy in the curricula for teaching volleyball.

Search problem:

The effectiveness of the educational process depends on the extent to which its basic objectives are achieved, which aim to improve students' learning in terms of physical abilities and skills. The teacher is the main

factor in choosing the appropriate teaching methods that contribute to achieving these goals, especially in physical education lessons that require diversity in abilities and skills, especially in the game of volleyball, and through the researcher's observation of the educational process and being a teacher of volleyball at the Faculty of Physical Education and Sports Sciences, and by virtue of his experience Note a noticeable weakness in the level of physical and skill education in volleyball. This decrease is due to the lack of use of effective teaching methods that meet the needs of students and contribute to the development of their performance, and based on this, there is a need to adopt modern teaching strategies that improve students' performance in the physical and skill skills associated with volleyball. Accordingly, the researcher decided to study this problem through the application of linear programmed education methods, in order to identify the extent of the impact of this strategy in learning the skill of transmitting from the bottom For female students in volleyball.

Research Objective:

- Using the linear programmed learning strategy to learn the skill of sending from the bottom for second-year students.
- Identify the effect of using the linear programmed learning strategy in learning the skill of sending from below for second-year students.

Force Search:

- There are statistically significant differences between the pre- and post-tests in the use of the linear programmed learning strategy in learning the skill of sending from the bottom for second-year students.
- There were statistically significant differences in the post-test between the experimental and control groups in using the linear programmed learning strategy in learning the skill of sending from the bottom for second-year students.

2- Research Methodology and Field Procedures:

2.1 Research Methodology

The researcher used the experimental method with experimental and control groups as it is the most appropriate approach to address the research problem**.**

2.2 Research community and sample.

The research community was chosen in a deliberate way for second-year students at the College of Physical Education and Sports Sciences / University of Diyala for the academic year 2024/2025, since this skill is taught in the second stage, divided into two divisions (i) (j), numbering (84) students, while the research sample was chosen randomly by lot, and they are students of division (i) to represent the experimental

group, which used the linear programmed learning strategy in learning the skill of transmitting from Below, as for the members of the control group, they used the method used in the curriculum prepared for the college, and the number of members of the research sample reached (35) students for each group, and the final number of sample members reached (70) students, after excluding students who failed and postponed and unwilling to apply the strategy, as well as the college team players and members of the exploratory experiment numbering (5) students.

2.3 Means of collecting information, devices and tools used in research:

2.3.1 Means of collecting information.

The following methods were used to collect information: scientific observation, personal interviews, questionnaire, information processing scale, and the Internet.

2 - 3 - 2 devices and tools used in the research experience.

Legal volleyball court, legal volleyball (20) size (3), adhesive tape, tape measure, barriers (10), signs (10), cones (10), paints, camera type (Nikone-D5000). Japanese made, camera Videography.

2.4 Field research procedures:

2 - 4 - 1 tests used in the research:

Test of transmission from the top and from the bottom (Hassanein and Abdel Moneim: 1997: 221)

The purpose of the test / measurement of transmission accuracy from above and below.

Tools/ volleyball (10), volleyball court legal, number of points awarded on the targeted areas.

Performance Specifications / The tester performs five consecutive attempts from the bottom trying to direct the ball to the area in which the highest degree is written, then the tester again performs five consecutive transmissions from the top (tennis send) trying to direct the ball to the area in which it was written the highest degree.

Conditions/

- Each laboratory has ten attempts (five uses transmitter from below, and five uses transmitter from above).
- Points are calculated according to the fall of the ball in the specified area of the field so that the tester obtains the score inside the area where the ball fell.
- If the ball touches the net or goes out of the field, the laboratory gets (zero)

- If the ball falls on the line, it is calculated as if it fell in the area determined by this line, and if it falls on a line common to two areas, the tester is given the score contained in the highest area in grades.

Registration / The laboratory records the grades obtained in the ten attempts it has made, noting that the final score is 50 points.

2 - 4 - 2 Exploratory experience:

The exploratory experiment was carried out on Monday, 7/10/2024 at 10:30 am inside the Martyr Dr. Wolhan Hamid Hall. The experiment included a sample of 5 students from outside the basic sample of the research, and aimed to achieve the following purposes:

1. Ensure the suitability of the tests used for the characteristics of the sample members and the ease of their application.
2. Verify the efficiency of the devices and tools used to ensure the accuracy and correctness of the results.
3. Determine the optimal time to conduct tests to ensure that the research process is organized effectively.
4. Identify potential obstacles during the tests and develop preventive plans to avoid them, in order to ensure that the basic experiment is carried out smoothly and without errors.
5. Ensure that the assistant team is familiar with the required research procedures and ensure their efficiency in conducting measurements and tests and documenting the results accurately.

2 – 4 – 3 Pre-test:

The researcher conducted the pre-tests for the study sample on Tuesday 8/10/2024 in the hall of the martyr Dr. Wolhan Hamid The tests were launched at 10:30 am in the presence of the assistant work team, and under the direct supervision of the researcher who followed up the implementation of the procedures for the variables under study, and the researcher also conducted the equivalence process among the sample members to ensure balanced and fair distribution, in order to achieve the neutrality of the results and reduce the impact of experimental variables on the research outputs.

2 – 4 – 4 Linear programmed learning strategy:

After preparing the necessary requirements to carry out the experiment for the research group, the application of the use of the linear programmed learning strategy began on Thursday, 10/10/2024, at a rate of two educational units per week for a period of (6) weeks, and by (12)

educational units, and the following is an explanatory explanation of how to apply the educational curriculum, The programmed (linear) learning curriculum was applied to the experimental group, while the method approach was applied to the control group, in which the procedures for the strategy were followed:

1- The time of the educational unit is (90) minutes.
2- Inform students of the time of the educational unit and prepare before its start (at break).
3- Read the instructions and explain how to use the programmed learning method with an explanation of how to deal with the curriculum.
4- The educational unit begins on the stands of the closed hall with the educational section, which is divided into two parts. The first part includes reading the required material within the educational unit, with a focus on following the illustrations on the left of the page, which illustrate the steps to perform the skill accurately. Students are then asked to answer the assigned question, located on the next page of the framework, which enhances understanding and interaction with the educational content.

In the educational part, the researcher asks the questions (exciting) and provides the answer to the student (response), then the student receives (reinforcement) based on her answers. This is done by turning the page to find the answer to the frame-related question on the next page. If the student's answer is correct after reviewing the answer, this is considered an enhancement of her answer, and then moves to the next frame until all the frameworks in the module are completed.

5- The applied section of the educational unit is carried out according to the sequence of the educational unit and the application of exercises based on the strategy of programmed (linear) learning.
6- In this part, the student applies the skill to teach herself according to what she undertook, absorbed and learned from the educational part according to the strategy.
7- The final or final section includes general relaxation and calming exercises as well as a small game for the purpose of recreation and suspense, after which the tools and balls are collected and an orderly withdrawal to the classroom.

The implementation of the programmed (linear) education strategy was completed on Sunday, 24/11/2024.

2 - 4 - 5 Post-tests:

The researcher conducted the post-tests for the members of the study sample on Thursday 28/11/2024, in the hall of the martyr Dr. Wolhan Hamid, the tests began at 10:30 am, and in the presence of the assistant work team and the researcher on the tests of the variables under research.

2.5 Statistical means.

Data is processed statistically using the S.P.S.S. program to process the data and extract the results.

3- Presentation, analysis and discussion of results:

3-1 Presentation, analysis and discussion of the results of the pre- and post-tests of the members of the research sample:

Table 1

Shows the results of arithmetic means, standard deviations, standard error, percentage of error and level of significance in the pre- and post-tests of the two research groups

Significance level	Error rate	T value	Standard error	Standard deviation	Arithmetic mean	audition	The Collection
Moral	0.000	12.287	0.963	3.465	29.481	Tribal	Experimental
			0.781	3.904	40.922	Post	
Moral	0.000	4.923	0.671	3.355	29.523	Tribal	Adjuster
			0.369	1.848	33.402	Post	

Table 2

Shows the results of the arithmetic media, standard deviations, standard error, error rate and significance level in the post-test between the experimental and control groups

Standard error	Standard deviation	Arithmetic mean	The Collection	Skill
0.781	3.904	40.922	Experimental	The skill of transmitting from below
0.369	1.848	33.402	Adjuster	

Table 3

Shows the results of the difference of arithmetic means, standard deviations, standard error, error rate and level of significance in the post-test between the experimental and control groups

Significance level	Error rate	T value	Standard error	p f	SSF	Skill
Moral	0.000	8.901	0.844	4.224	7.521	The skill of transmitting from below

3.2 Discussion of the results:

By studying the table (1) The results showed that there are statistically significant differences between the pre- and post-tests and the two research groups (experimental and control) and in favor of the post-test and the researcher attributes this improvement in the two groups to the use of programmed education (linear) for the experimental group and the method used for the control group The research included a linear method that clearly affected the improvement of the learning process. As confirmed (Morgan, 1987) "The factors that increase the retention of the study material after learning it are motivation, the organization of the study material, and the method of study." (Morgan:1987: 21) These elements are available in programmed education, where the programmed learning method is subject to a series of procedures such as setting goals accurately, formulating them logically, and organizing the content of the material in the correct psychological way, which facilitates the process of understanding and teaching skills related to volleyball. Linear programmer education also has a clear impact on teaching volleyball transceiver skills, which positively affected the experimental group. This method provides the student with a space of freedom to absorb the educational material. And that the difference does not happen to the learner with the abilities and skills he acquires except through practicing them, as his efficiency does not increase except through practice and self-effort." The method of programmed education (linear) depends on the principle of self-education, despite its difference in application and method of answer, and the researcher agrees with (Abu Al-Naga, 2005)) in that "programmed education Linear It allows learners to learn according to their abilities taking into account individual differences, and this has helped improve the performance of the experimental group" (Aboul Naga): 2005 127:)

Programmed learning is one of the successful methods in building the right ideas for learning based on the ideas accumulated as a result of observation, practice and presentation of the successful model" (Fleah:2020: 217), as "this type of method appears in the first stage of learning the skill when the learner needs to recognize important points after each performance to help him correct his technical performance" (Abdul Karim: 1990: 79)

The results of tables (2) and (3) showed that there were statistically significant differences between the experimental and control groups, and

they were in favor of the experimental group in the post-test. The researcher attributes this to the fact that the linear programmed learning strategy excelled compared to the traditional lecture method, as this strategy was able to improve the learner's retention and information retention. This is because linear programmed learning enhances the student's attention and concentration, which helps her move from the initial behavior to the desired final behavior, which contributes to delaying the correct response, as well as stimulating thinking through new information and stimuli. And that written programmed education is one of the methods of education in which the educational material is formulated in steps to achieve the goal to be reached and in which the role of the teacher here is positive and effective" (Al-Husseinawi: 2019: 304) In other words, the student's response is directly enhanced. Thus, the linear method displays sequential and precisely organized information, each part of which evokes an appropriate response. The material is broken down into independent and graded parts according to the level of difficulty, which contributes to determining the final method accurately, and depends on the use of all types of reinforcement, which helps in improving the performance of skills. The methods are several to raise the learner's motives towards the event or game to learn its skills and practice and these methods are to facilitate motor learning opportunities and clarity of the appropriate goal to learn the skill and its embroidery as well as balance in satisfying the needs of the learner" (Mohammed:2019: 5)

4. Conclusions and recommendations:

Conclusions:

1. The results of the research showed that the linear programmed learning strategy contributed positively to improving the learning of the skill of transmission from below among second-year students.
2. The study confirmed that the use of immediate reinforcement after each answer helped enhance students' understanding of the skill more effectively.
3. Interacting with the cascading and varied stimuli offered by the programmed learning strategy has been shown to help speed up skill learning and reduce the likelihood of error.
4. The results showed that this strategy is suitable for second-year students, as it helped improve the level of performance and techniques for transmission from below.

5. A significant improvement in the accuracy and effectiveness of implementation was observed among students after using this educational strategy.

References:

1. It is recommended to generalize the use of the linear programmed learning strategy in learning other mathematical skills, because of its positive impact on accelerating learning and improving performance.
2. It is essential to develop and adapt this strategy to suit different levels of sports skills to ensure its continued effectiveness.
3. It is recommended to continue conducting future studies on the impact of programmed instructional strategies in improving students' physical skills.
4. It is recommended to provide an interactive learning environment that contains various educational stimuli that support the learning process continuously.
5. An element of periodic review and evaluation should be included to ensure the effectiveness of the strategy at each stage of skill learning.

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