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

مجلة جامعة ذي قار لعلوم التربية البدنية

مجلة علمية محكمة تصدرها كلية التربية البدنية وعلوم الرياضة

The Effect of an Educational Curriculum Based on the Ruffini Model on Learning Some Types of Handball Scoring for Students

Ali Hatem Al-Wali

aIi.hatim@uomisan.edu.iq

Faculty of Pharmacy of Maysan University

ABSTRACT

Published online: 20/9/ 2025

Keywords:
Ruffini model, types of handball shooting

The importance of the research lies in the introduction of modern educational models in teaching basic skills, as well as knowing the effect of an educational curriculum according to the Ruffini model in learning some types of handball scoring in students, in order to contribute to the development of teaching methods in the field of physical education and improve their skill performance. The research objectives were (preparing an educational curriculum with the Rovini model to learn some types of handball scoring, and identifying the impact of the educational curriculum with the Rovini model in learning some types of handball scoring for students) and the researcher used the experimental method with two experimental and control groups to suit the research problem, while the research population was the students of the second stage at Maysan University, Faculty of Physical Education and Sport Sciences / Applied Sciences Branch for the academic year 2024-2025, which were 62 and the sample was randomly selected by 40 students and two departments. Randomly divided into two experimental and control groups with (20) students for each group, and (15) students were excluded for various reasons (injury, non-commitment to permanence), and (7) students were excluded for the exploratory experiment, and the appropriate devices and tools were used, as well as the appropriate tests and measurements for the variables researched, and the statistical package (SPSS.26) was used to process the results, and the results were analyzed and discussed according to modern scientific sources, and the researcher reached conclusions such as (There is a development of the experimental group that exceeded the development of the control group in the variables under study, and the educational units used according to the Ruffini model have a positive effect on the development of the variables under study for the experimental group in the research sample) as for the recommendations are (the necessity of using modern models in physical education and mathematical sciences, and the need to use the Ruffini model in teaching various subjects in physical education, especially handball).

1- Introducing the research

1-1 Introduction and Importance of the Research:

Physical education is one of the educational fields that aims to prepare the individual comprehensively in terms of physical, mental, emotional, and social aspects, through practicing various sports activities that provide him with opportunities for integrated growth. Team games, including handball, represent an effective way to develop the physical, skillful, and tactical aspects of students, due to their team and interactive nature that requires speed in performance, and accuracy in the implementation of basic skills, especially the skill of scoring, which is the ultimate goal of attack in the game and one of the most important factors in achieving victory.

With the scientific and pedagogical development in the field of teaching methods and strategies, the need to move from traditional education that focuses on indoctrination has emerged to education based on modern educational models that enhance the role of the student as an active participant in the learning process, take into account individual differences and employ previous experiences to achieve deeper and more sustainable learning. Among these modern educational models, the Ruffini Model stands out. It is considered one of the modern design models in the construction of educational curricula, as it relies on a logical and systematic sequence of learning steps, starting from the definition of educational objectives to the evaluation of learning outcomes.

Rovinci's model is characterized by its focus on the integration of educational technology and the active interaction between teacher and learner, which contributes to building a learning environment that is rich in stimuli and stimulates thinking and experimentation. Therefore, it can be used to teach motor skills within sports, especially scoring skills in handball, which requires a combination of motor precision, visual perception and timing.

The importance of the research lies in the introduction of modern educational models in teaching basic skills, as well as knowing the effect of an educational curriculum according to the Ruffini model in learning some types of handball scoring among students, in order to contribute to the development of teaching methods in the field of physical education and improve their skill performance.

1-2 Research Problem:

The skill of scoring in handball is an essential element in the development of tactical and technical performance in students, and with the variety of teaching methods and the different needs of learners, the question arises as to which educational methods contribute to improving the learning of this skill effectively. The use of the Ruffini model is important because of its focus on organizing the learning process in a systematic and holistic way, which promotes the development of motor skills and provides students with greater opportunities for creativity and diversity in scoring styles.

1-3 Research Objectives:

1. Preparing an educational curriculum with the Ruffini model to learn some types of handball scoring.
2. Identifying the Impact of the Educational Curriculum with the Ruffini Model in Learning Some Types of Handball Scoring for Students.

1-4 Research Hypothesis

1. There are statistically significant differences between the results of the pre- and post-tests of the control and experimental groups and in favor of the post-tests.
2. There are statistically significant differences between the results of the post-tests between the experimental and control groups and in favor of the post-tests in the experimental group.

1.5 Research Areas

1.5.1 Human Field: Students of the second stage at the Faculty of Physical Education and Sport Sciences, Maysan University, Applied Sciences Branch.

1-5-2 Temporal Domain: From 6/10/2024 to 9/3/2025

1.5.3 Spatial Field: The Hall of the Faculty of Physical Education and Sport Sciences at Maysan University.

1.6 Definition of Terms:

1.6.1 Rovini model:

Ruffini believes that "taking into account the principles of instructional design in online courses can help produce a new quality of courses, this model can be applied at the level of one lesson, or at the level of a single unit, or on a course or an entire course, and the application of this model requires prior knowledge of educational technology and educational media, and there are some educational procedures that must be taken into account when applying this model, such as the educational reality, educational objectives, and the measures and tests that are used to judge the achievement of goals. Teaching and teaching strategies, learning resources, and the role of both learners and other human elements. The model also deals with the structure of the initial construction, and the processes of adjustment, evaluation, and feedback that help in the processes of interdependence and adjustment in all steps of the educational system. (نوري و اخرون 2022، 18)

2- Research methodology and field procedures:

2-1 Research Methodology:

"The experimental method is one of the most used methods in physical education research because it is based on two main pillars, which are observation and experimentation, so the researcher used the experimental method with the design of the two equal experimental and control groups to suit the research problem.(عبد 2019، 81)

2-2 Research Population and Sample:

The research population was selected from the students of the second stage at Maysan University, Faculty of Physical Education and Sport Sciences, Branch of Applied Sciences for the academic year 2024-2025, which were 62, and the sample was selected by random method with 40 students, and they were randomly divided into two experimental and control groups with (20) students for each group, and (15) students were excluded for various reasons (injury, non-commitment to permanence), and (7) students were excluded for the exploratory experiment, and homogeneity was made between the two groups for variables (height, weight, and chronological age).) as shown in Table (1)

Table (1)

Shows the homogeneity of the research sample

Torsion coefficient	on	Broker	Arithmetic mean	Unit of Measurement	Variables
0.65	3.77	174.5	174.73	Poison	Length
0.88	4.67	71	71.96	kg	Weight
0.80	0.67	22	22.56	Year	Chronological age

2.3 Means, Devices and Instruments Used:

- (Interview, Observation, Questionnaire, Test)
- Results Verification Forms
- Laptop Type (DELL)
- Canon Type 2900 Laser Printer .
- (1) SONY Stopwatch
- Whistle.
- Tape measure.
- Adhesive tape for layout 5cm width.
- Plastic Cones (20)
- Handball court
- Handballs (10)
- Curtain containing 4 squares measuring 40 x 40 cm

2.4 Field Research Procedures:

2.4.1 Tests of certain types of aiming:

First of all: Shooting from the Stability (10) balls from the line of (9) meters (أبوزيد و الشافعي 2007، 227)

- **Purpose of the test:** Measure the accuracy of aiming from stability.
- **Tools:** (10) Hand Balls + Curtain to Close the Goal with four squares representing the four corners of the goal measuring (40 x 40) cm.
- **Method of performance:** The player chooses two squares to aim at, one upper and the other lower and one diameter, the player stands behind the line of (9) meters holding the ball, and when giving the signal (whistle), the player aims at one of the two squares, then holds another ball and aims at the other square after hearing the signal and continues like this until he finishes the ten balls (five balls on each square).
- **Rules:** One foot must be stable , and the player aims within (3) seconds after the whistle.
- **Scoring:** The player is given a score on each correct shot within the specified box and the test score is (0-10) marks.

Secondly: Correction of Jump forward (كريم، 2023 63-64)

- **Purpose of the test:** Measure the accuracy of aiming from close to jumping forward.
- **Tools:** (10) handballs, a handball goal drawn on the wall with five circles with a diameter of (60 cm), four of which are drawn at a corner and the fifth in the center below the crossbar.
- **Method of performance: The** tester stands with a ball in his hand behind the throwing line (7 m) and aims ten balls to the circles hanging in the goal after taking three steps, then jumping, then throwing, starting with the circle in the upper right, left, middle, then the lower right corner, and then the left.

- **Rules and Conditions:** Each tester is given ten attempts to enter the ball into the circles, with two balls for each circle, noting that each circle has a different value, two attempts are allowed before the start of the test, the aim is after taking three steps and then jumping, and it is not allowed to touch or exceed the shooting execution line (7 m) before throwing.
- **Registration:** The laboratory awards two marks for each ball that enters the circles in the upper right and left corner, one score is awarded for each ball that enters the middle circle, and three marks are awarded for each ball that enters the lower right and left circles, and the test score is (0-22) degrees.

2.4.2 Exploratory Experiment:

"The exploratory experiment is one of the most important required and necessary procedures in order to identify the accurate scientific weight of the tests that are candidates for work and to avoid errors and obstacles that may face the researcher when implementing the main experiment"(545 ،2022 مجيد) Exploratory experiment On Sunday, the 6th./10/2024 (7) students from the research community and outside the sample Before conducting his research with the aim of choosing research methods and tools.

2.4.3 Pre-Tests:

The researcher, along with the assistant team, conducted the pre-tests before starting the training curriculum, which included the variable tests under study at ten o'clock on Wednesday, 9/10/2024, and in the hall of the Faculty of Physical Education and Sport Sciences at Maysan University. The parity was extracted through the tests as shown in Table (2).

Table (2)
Shows the parity of the two research groups

Significance	sig	t. test	Control Group		Experimental Group		Unit of Measurement	Tests
			on	Going to	on	Going to		
Insignificant	0.30	1.04	1.18	2.35	0.92	2.70	Degree	Straightening from Stability
Insignificant	0.32	0.99	1.14	13.05	1.38	12.65	Degree	Aim from Jump Forward

- Insignificant at the significance level of (0.05) and the degree of freedom ((n1+n2) – 2) = (38)

2.4.4 Main experience:

The educational units of the experimental group were applied only from Sunday, 12/1/2025 until Thursday, 6/3/2025, and on the hall of the Faculty of Physical Education and Sport Sciences at Maysan University with two units per week for eight weeks, i.e. (16) educational units according to the following:

After the completion of the pre-tests, the main experiment was carried out within the educational curriculum prepared to teach the skill of scoring from stability and during movement in handball, using the Ruffini model as one of the modern educational models that focuses on organizing content, setting goals accurately, and employing educational aids to serve the achievement of high learning outcomes among students, and the educational units of the experimental group were applied only from Sunday, 12/1/2025 until Thursday, 6/3/2025 .The Faculty of Physical

Education and Sport Sciences at Maysan University with two units per week for eight weeks, i.e. (16) educational units according to the following:

The module lasted (90 minutes) and was divided into three main parts: the preparatory part (20 minutes), the main part (60 minutes), and the concluding part (10 minutes).

First: Preparatory Part (20 minutes)

The researcher began by organizing the educational situation by recording attendance and absence, then explained the purpose of the lesson and its importance in developing the accuracy of scoring. Afterwards, the general warm-up was carried out, which included a light run around the field and various stretching exercises for all parts of the body, followed by a special warm-up that focused on exercises similar to the scoring movement to prepare the muscles working in the performance. Educational tools (balls, cones, goal) were also prepared in preparation for the main part of the unit.

Second: Main Part (60 minutes)

This part was implemented according to the steps of the Rovini model, which included the following:

1. Setting Educational Objectives: The educational goal of the students was clarified which is to master the performance of the scoring skill accurately from stability and during movement, with an emphasis on the technical aspects of proper performance.

2. Content analysis and segmentation: The researcher provided a detailed explanation of the stages of the technical performance of scoring, starting from the correct position of the feet, through the movement of the arm and shoulder, to the moment of release and follow-up of the ball. The researcher used an educational board and a short video to present the technical stages of the skill.

3. Identifying Teaching Methods and Strategies: The researcher used a combination of teaching with individual and group practice, with the application of the small group learning method to enhance interaction between students, while employing aids (balls, cones, goal, and educational board).

4. Organizing the learning situation: The students were divided into small groups, with each group performing a specific exercise within a specific area of the playground, which provided greater opportunities for repetition, observation, and correction by the researcher.

5. Implementation of educational activities: The activities included the practical application of the skill of scoring from standing first, then moving to scoring while moving, and then the implementation of mini-play situations (2 vs. 2) that allow the application of the skill in situations similar to the match. This segment concluded with a light competition between groups to increase the motivation of the students.

6. Evaluation and feedback: The researcher observed the students' individual performance and corrected errors immediately during implementation, while providing positive feedback to promote correct performance and stabilize the motor learning of the skill.

Third: The Final Part (10 minutes)

The final part included stretching and relaxing exercises for the muscle groups used during the performance, as well as a quick review of the learning stages and a discussion of the difficulties they faced while scoring. At the end of the unit, the researcher gave his concluding remarks and gave verbal reinforcement to motivate the students to commit and persevere in the upcoming modules.

Thus, the educational module was applied according to the steps of the Ruffini model, which contributed to organizing the learning process, increasing student interaction, and raising the level of performance accuracy of the scoring skill from stability and during movement.

2.4.5 Post-tests:

After completing the application of the main experiment, which is 8 weeks, the researcher conducted the post-tests of his research sample (experimental and control group) on Sunday, 9/3/2025, and he followed the same method as he followed in the pre-tests, and the researcher was keen to find all the conditions for the pre-tests and their requirements when conducting the post-tests in terms of time, place, and means of testing to ensure the safety of the results.

2.5 Statistical Methods:

The researcher used the statistical package (spss.26) to extract the following values:

(mean of arithmetic, standard deviation, median, torsion coefficient, test test for two independent samples, test test for one sample, mean differences, standard error, degree of freedom, significance level)

3. Presentation, analysis and discussion of the results:

3.1 Presentation of the results of the pre- and post-tests of the experimental group:

Table (3)
Shows the results of the pre- and post-tests of the experimental group

Significance	sig	t. test	Standard Error	Average spreads	Dimensionality		Tribalism		Unit of Measurement	Tests
					on	Going to	on	Going to		
Moral	0.000	21.79	0.22	5.0	0.47	7.70	0.92	2.70	Degree	Straightening from Stability
Moral	0.00	18.81	0.35	6.70	0.58	19.35	1.38	12.65	Degree	Aim from Jump Forward

- Significant at the significance level of (0.05) and the degree of freedom (n-1) = (19)

Through Table (3), it is clear that there are statistically significant differences between the pre-test and post-test of the experimental group and in favor of the post-test in the test of accuracy, the arithmetic mean of the pre-test reached (2.70) with a standard deviation of (0).92) While the arithmetic mean of the post-test was (7.70) degrees with standard deviation (0.47) The mean differences between the two tests were (5.0) A score while the standard error was (0.22) By statistically treating these results with the (T) test, where the calculated value of (T) was (21.79) This is a significant function because the value of the significance level of the test of (0.000) compared to the significance level of (0.05) and the degree of freedom (19) is less than (0.05),

and this indicates that the differences were significant and in favor of the post-test of the experimental group.

As for the test of shooting from jump forward, there are statistically significant differences between the pre- and post-test of the experimental group and in favor of the post-test, where the arithmetic mean of the pre-test reached (12.65) with a standard deviation of (1).38) The mean of the post-test was (19.35) with a standard deviation of (0).58) The mean differences between the two tests were (6.70) points, while the standard error was (0.35) Statistically treating these results with the (T) test, where the calculated value of (T) was (18).81) This is a significant function because the value of the significance level of the test of (0.000) compared to the significance level of (0.05) and the degree of freedom (19) is less than (0.05), and this indicates that the differences were significant and in favor of the post-test of the experimental group.

3-2 Presentation of the results of the pre and post tests of the control group:

Table (4)
Shows the results of the pre- and post-tests of the control group

Significance	sig	t. test	Standard Error	Average spreads	Dimensionality		Tribalism		Unit of Measurement	Tests
					on	Going to	on	Going to		
Moral	0.000	6.84	0.22	2.10	0.51	4.45	1.18	2.35	Degree	Straightening from Stability
Moral	0.000	10.44	0.30	3.15	0.41	16.20	1.14	13.05	Degree	Aim from Jump Forward

- Significant at the significance level of (0.05) and the degree of freedom (n-1) = (19)

Through Table (4), it is clear that there are statistically significant differences between the pre-test and the post-test of the control group and in favor of the post-test in the test of accuracy, as the arithmetic mean of the pre-test reached (2.35) with a standard deviation of (1).18) The arithmetic mean of the post-test was (4.45) degrees with standard deviation (0.51) The mean differences between the two tests were (2.10) Score, while the standard error was (0.22) By statistically treating these results with the test of (t), where the calculated value of (t) was (6.84) This is a significant function because the value of the significance level of the test of (0.000) compared to the significance level of (0.05) and the degree of freedom (19) is less than (0.05), which indicates that the differences were significant and in favor of the post-test of the control group.

As for the test of shooting from jump forward, there are statistically significant differences between the pre-test and the post-test of the control group and in favor of the post-test, where the mean of the pre-test was (13.05) with a standard deviation (1).14) The mean of the post-test was (16.20) with a standard deviation of (0).41) The mean differences between the two tests were (3.15) Score, while the standard error was (0.30) Statistically treating these results with the (T) test, where the calculated value of (T) was (10).44) This is a significant function because the value of the significance level of the test of (0.000) compared to the significance level of (0.05) and the degree of freedom (19) is less than (0.05) and this indicates that the differences were significant and in favor of the post-test of the control group.

3.3 Presentation of the results of the post-tests for the experimental and control groups:

Table (5)
Shows the results of the post-tests of the experimental and control groups

Significance	sig	t. test	Control Group		Experimental Group		Unit of Measurement	Tests
			on	Going to	on	Going to		
Moral	0.000	20.94	0.51	4.45	0.47	7.70	Degree	Straightening from Stability
Moral	0.000	19.66	0.41	16.20	0.58	19.35	Degree	Aim from Jump Forward

- Significant at the significance level of (0.05) and the degree of freedom ((n1+n2) – 2) = (38)

Table (5) shows that there are statistically significant differences between the post-test of the experimental and control groups and in favor of the experimental group in the test of accuracy, as the arithmetic mean of the post-test of the experimental group reached (7.70) with a standard deviation of (0).47) The mean of the post-test for the control group was (4.45) with a standard deviation of (0.51) Statistically treating these results with the (T) test, where the calculated value of (T) was (20).94) This is a significant function because the value of the significance level of the test of (0.000) compared to the significance level of (0.05) and the degree of freedom (38) is less than (0.05), and this indicates that the differences were significant and in favor of the post-test of the experimental group.

As for the test of shooting from jump forward, there are statistically significant differences between the pre-test of the experimental and control groups and in favor of the post-test of the experimental group, where the arithmetic mean of the test for the experimental group was (19.35) with a standard deviation of (0).58) The mean of the post-test for the control group was (16.20) with a standard deviation of (0.41) By statistically treating these results with the (T) test, where the calculated value of (T) was (19).66) This is a significant function because the value of the significance level of the test of (0.000) compared to the significance level of (0.05) and the degree of freedom (38) is less than (0.05), and this indicates that the differences were significant and in favor of the post-test of the experimental group.

3.4 Discussion of the Results:

Through the results shown in Table (5), it is clear that there are statistically significant differences between the post-tests of the experimental and control groups and in favor of the experimental group, and the researcher attributes the reason for these results to the fact that the Ruffini model allows the researcher to organize the educational content sequentially, starting from the definition of educational and behavioral goals, passing through the analysis of the content into interrelated units, and then determining the appropriate educational aids for each goal. This sequence made the learning process clearer and more effective for students, which reflected positively on the level of skill performance.

He pointed out Rovini Until "Designing lessons according to specific and clear steps in terms of objectives, means, and implementation makes the learner more aware of the learning path and increases his efficiency in acquiring motor skills" (Rovini 2015 ، 42)

The nature of the modules according to this model also helped to diversify teaching methods between explanation, presentation and group application, which created an active and interactive learning environment that provided greater opportunities for experimentation, observation and correction. Where (Ahmed Al-Zaloul 2018) that "Learning based on the organization of content and activities according to a step-by-step model that ensures the survival and continuity of the learning impact as a result of organized and guided repetition by the instructor" (الزغلول، 2018، 133)

The evaluation and feedback step in the Rovini model also contributed to enhancing student motivation through continuous performance correction and providing immediate feedback, which he confirms. (Magill 2020) He said: "The timing of feedback during motor learning is one of the most important factors affecting the speed of skill acquisition and the accuracy of its performance" (Magill 2020، 215)

Through the results, it can be said that the great improvement achieved by the experimental group is attributed to the effectiveness of the educational units based on the steps of the Ruffini model, which made the learner the center of the educational process, and provided him with opportunities for gradual application from simple to complex and from fixed to mobile, which led to an improvement in neuromuscular compatibility and performance accuracy, and this is consistent with what was found To him (Abdullah Hassan 2022) "The The use of structured educational models contributes to raising the level of skill performance as a result of the logical link between the stages of learning and practical application" ، (Hassan 2022, 95) As Confirm This is the result he pointed out (Schmidt & Wrisberg) that "Systematic organization of the motor learning environment contributes to improving motor response and increasing performance efficiency" (Schmidt و Wrisberg 2019، 178)

Thus, it can be said that the superiority of the experimental group in the post-test is a clear proof that the educational modules according to the Ruffini model were more effective in developing the shooting skills of stability and forward jump compared to the traditional method relied on by the control group.

4. Conclusions and Recommendations:

4.1 Conclusions:

1. There is an evolution of the experimental group that exceeded the development of the control group in the variables under study
2. The educational units used according to Rovinci's model have a positive effect on the development of the variables under study for the experimental group in the research sample.
3. There was a clear superiority of the post-tests of the control and experimental groups at the expense of the pre-tests

4.2 Recommendations:

1. The necessity of using modern models in physical education and sports sciences
2. The need to use the Ruffini model in teaching various subjects in physical education, especially handball.
3. Conduct similar research on other samples.

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