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An educational curriculum accompanied by balance exercises (dynamic and static) to develop special strength and teach some basic basketball skills to students

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ABSTRACT

The preparation of educational curricula are in need of many foundations and conditions that must suit the mental, physical and functional level of learners and that many researchers seek to prepare educational programs in order to reduce the effort and time in the educational process and achieve the desired goals, the researcher has sought to choose an educational curriculum to develop a sense of learners in the receipt, delivery and performance of the skill of Tabtaba and correction and holding basketball, but make the exercises accompanied by a set of balance exercises that the researcher believes are the same A great impact on the performance of basketball skills, which depend on the performance of skills of stability, movement, standing and jumping on one leg or both and the extent of the impact of those exercises prepared on some of the special strength of the legs, trunk and arms, which participate in the performance of various skills, hence the importance of research and the need for it in the preparation of an educational curriculum accompanied by exercises of static and dynamic

1.1 Introduction and importance of research:

The preparation of educational curricula are in need of many foundations and conditions that must suit the mental, physical and functional level of learners and that many researchers seek to prepare educational programs in order to reduce the effort and time in the educational process and achieve the desired goals, the researcher has sought to choose an educational curriculum to develop a sense of learners in the receipt, delivery and performance of the skill of Tabtaba and correction and holding basketball, but make the exercises accompanied by a set of balance exercises that the researcher believes are the same A great impact on the performance of basketball skills, which depend on the performance of skills of stability, movement, standing and jumping on one leg or both and the extent of the impact of those exercises prepared on some of the special strength of the legs, trunk and arms, which participate in the performance of various skills, hence the importance of research and the need for it in the preparation of an educational curriculum accompanied by exercises of static and dynamic balance to develop the special strength that has an impact on improving and learning basic skills by learning basketball and the accuracy of performance in it.

1.2 Research problem:

Through the experience of the researcher as a teacher and follow-up to the game of basketball and through the application of practical lessons for students, she noticed the inability of students that the learning method used in which the acquisition of basketball skills is a long time, which called for the researcher to prepare an educational curriculum that depends in its application on dynamic and fixed balance exercises and gradually because she believes that raising the level of balance among students is part of the process of performing skills and ease of learning, such as peaceful correction, you need performance, jumping with one leg and a lot of skills You need balance, which the researcher sought to accompany the educational exercises with static and dynamic balance exercises, which corresponds to the characteristics and features of the game of basketball, which at the same time contributes to the development of special strength among students, which is a key pillar for the performance of basic basketball skills and achieve accuracy in it. Hence, the researcher sees the need for the problem by choosing independent variables in order to reduce time and effort in education by developing some of the foundations on which learners rely to learn basic skills in basketball, and from here the problem can be formulated with the following question:

Q: Does the educational program for basic basketball skills accompanying balance exercises (static and dynamic) have a positive impact on teaching basic basketball skills and developing students' special strength?

1-3 Research Objectives: The research aims at the following:

1- Preparing an educational curriculum accompanying balance exercises (static and dynamic).

2- Identify the differences between pre- and post-tests in static and dynamic balance, special strength and some basic basketball skills for the experimental and control groups.

3- Identify the differences in the post-tests in the static and dynamic balance, special strength and some basic basketball skills between the experimental and control groups.

1-4 Research hypotheses: The researcher assumes the following:

2- The existence of some differences between the pre- and post-tests in the static and dynamic balance, special strength and some basic basketball skills for the experimental and control groups.

3- The existence of some differences in the post-tests in the static and dynamic balance, special strength and some basic basketball skills between the experimental and control groups.

1-5 Research Areas: The research areas included the following:

1-5-1 human field: included (20) students from Al-Mustafa High School for Girls in the city of Baghdad

1-5-2Spatial area: yard and hall of Al-Mustafa Preparatory School for Girls.

1-5-3 Time Range: 3/1/2025 to 11/3/2025

2- Research methodology and field procedures

2-1 Research methodology: The researcher used the experimental approach to appropriate solving the research problem and achieving the objectives of the research formulated by the researcher, as the researcher must choose an appropriate experimental design before conducting the study to test the validity of the results deduced from his hypotheses ().[1]

[1] – Diopold van Dalen: Scientific Research Methods in Education and Psychology , translated by Mohamed Nabil and others, Cairo, Anglo-Egyptian Library, 1996 , p. 377.

2-2 "Research community and sample: The "community" of the research identified the students of the fourth stage of Al-Mustafa Preparatory School for Girls in the city of Baghdad for the academic year 2024-2025, whose total number is (153) students, and the researcher chose a random sample of (20) students randomly and a percentage of (13.07%) and was divided into two groups:

The first group: experimental: which implemented the experimental variable, which is (an educational curriculum accompanying the exercises of static and dynamic balance)

The second group: the officer: implemented the traditional curriculum of the subject school.

The sample was "homogeneous" in (height - weight - age - heart rate) as shown in Table (1).

Table (1) shows the arithmetic media, deviations and coefficient of variation of variables (height, weight, chronological age and heart rate)

Coefficient of variation	deviation	middle	Variables
4.75	7.53	158.47	Length
5.54	2.94	53.04	Weight
0.941	0.14	14.87	lifetime
2.76	2.15	77.65	Heartbeat

It is clear from the table that the sample difference coefficient ranged between (0.941) to (5.54), which is less than (30%), so the sample has been distributed normally.

2-3 Tools, devices and means used in research:

1- Arab and foreign sources - registration forms. - tests and measurements - Internet formality - balls of different weights - collars - wooden platform - terraces - basketball court - terraces - barriers - hand calculator - - whistle - computer - basketball - stopwatch - electronic heart rate meter)

2-4 **Tests used in the research:**

1- First: Peaceful correction test.[2]
2- Second: Jumping aiming test [3].

[2] Fayez Bashir Hamoudat, Muayad Abdullah Jassim: Basketball, University of Mosul, Dar Al-Kutub for Printing and Publishing, 1987.p. 202

[3] Fayez Bashir Hamoudat: Ibid., p. 210

3- Third: Test the accuracy of passing by pushing (chest pass).[4]
4- Fourth: Dialogue test (Tabtaba).[5]

Second: Balance Test

1. Hard balance (on rubber ball [6]

2. Kinetic balance[7]

Third: Special Strength Tests:

1-Speed characteristic force of the arms [8]

2- The power characteristic speed of the trunk (from the position of extending the knees) through (15) seconds[9]

3- The power characteristic speed of the two legs (full 15 seconds) [10]

Fourth: Measuring heart rate : through a blood pressure and electronic heart rate measuring device.[11]

2-5 Pre-tests: The researcher conducted the pre-tests on the research sample on 4/1/2025 and at ten o'clock in the morning in the stadium and hall of Al-Mustafa Preparatory School, in the presence of the assistant work team and on the experimental sample, as follows:

On the first day, the experimental group sample was measured by static and motor balance tests, then basic basketball skills under study were measured, and then special strength tests.

On the second day, the same tests and measurements were repeated on the control sample and at the same place and time.

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4 Fayez Bashir Hammoudat: Ibid., p. 225

5 Fayez Bashir Hamoudat: Ibid., p. 229

6 Loay Kazem Muhammad: The effect of a rehabilitation approach according to the biorhythm of its physical cycle on some physical characteristics, range of motion and biochemical variables after the removal of the meniscus of the knee joint, PhD thesis, University of Basra, 2010, p 135

7 Hashem Miteb, Ammar Jassim, Laith Mohammed: The effect of an educational curriculum according to a scale designed for brain sovereignty in the development of some aspects of football learning. Published Master Thesis, College of Physical Education, University of Basra, 2017. p. 124

8 Bastawisi Ahmed: Foundations and Theories of Sports Training, Dar Al-Fikr Al-Arabi, Cairo, 1996.

9 Muhammad Matar Arak: Evaluation of Some Physical Abilities and Skill and Physiological Abilities According to Different Physical Classifications of Football Players, PhD Thesis, Faculty of Physical Education, University of Babylon, 2007, p. 77

10 Muhammad Matar Arak: Ibid., p. 79

11 Ammar Jassem: Qalb al-Riyadi, August Press, 2009, Baghdad, p. 125

2-6 Experimental variable:

After reviewing the scientific sources, references, studies and research in physical exercises and how to prepare and choose them, especially in the exercises that are used in teaching non-specialized and non-practicing students of the game of basketball by acquiring the basic skills that are under study, but by paying attention to accompanying those exercises with fixed and mobile balance exercises, which are exercises similar to the performance of the basic skills of basketball, which emphasizes the muscles that participate in performance.

As well as the researcher prepared a set of exercises and implemented them gradually in terms of the number of repetitions, rest and degree of difficulty, and the educational units were started on 5/1/2025 for a period of (8) weeks and at a rate of (2) educational units per week, meaning the number of units reached (16) units and the educational curriculum ended on 5/3/2025 and the time rate of the unit was (30-45) minutes, and the researcher explained two models for two educational units in the appendices (1), as shown by the exercises prepared in Appendix No. (2)

2-7 Post-tests: The post-tests were repeated on 6/3/2025 for two days, the first day of the experimental group and the second day of the control group, with the same mechanism and under the same spatial and temporal conditions carried out by the researcher in the tribal tests.

2.8 Statistical methods: [12]
(Percentage - coefficient of variation - arithmetic mean - standard deviation **-**(T) for correlated and incorrelated samples)

3- Presentation and discussion of research results

3-1 Presentation and discussion of the results of tests and measurements before and after the static and dynamic balance and strength characteristic of speed for the legs, torso, arms and basketball skills under study for the experimental and control groups

[12] Marwan Abdul Majeed Ibrahim: Descriptive and Inferential Statistics, 1st Edition, Amman, Dar Al-Fikr for Printing and Publishing, Distribution, 2000.PHAR105

Table (2) The arithmetic mean, standard deviation, and T-and (Sig) value between tests and measurements before and after represent the static and dynamic balance and the force characteristic by speed for the legs, torso and arms of the experimental and control groups

level Indication	Sig	t	Go away		southern		test	
			deviation	middle	deviation	middle		
D	0.00	3.07	1.62	14.04	1.07	8.11	Fixed balance	Experimental
D	0.00	2.97	1.64	16.86	1.94	18.84	Moving balance	
D	0.00	3.52	1.21	7.74	1.64	5.3	The characteristic power of speed for the legs	
D	0.03	2.88	1.14	3.53	1.04	2.62	The characteristic force of speed of the arms	
D	0.01	3.02	1.04	5.93	1.73	3.11	The characteristic force of the speed of the trunk	
Non D	0.06	1.96	1.62	10.85	1.07	8.87	Fixed balance	Officer
Non D	0.08	1.64	1.82	18.88	1.93	19.01	Moving balance	
Non D	0.07	2.91	1.1	5.94	1.05	5.06	The characteristic power of speed for the legs	
Non D	0.07	2.14	1.03	3.17	1.64	3.13	The characteristic force of speed of the arms	
Non D	0.6	2.66	1.53	4.09	1.20	3.03	The characteristic force of the speed of the trunk	

* Tabular value (t) under the level of significance (0.01) at the degree of freedom (9) (2.82)

Table (2) shows that there are significant differences in favor of the post-test of the experimental group in all tests and measurements under consideration because the values of (SIG) is less than (5%).

While all tests in the control group will not make significant differences, except for the strength test characterized by speed for the two men, the value of (Sig) was less than (5%). It is also clear from Table (2) that the experimental variable prepared by the researcher had a significant impact on the height and development of static and dynamic balance and strength characteristic of speed for the legs, trunk and arms, and the researcher believes that the reason is due to the pattern of exercises,

their content, the way they perform, the number of repetitions and interstitial breaks that give the opportunity to recover and perform the following repetition As best as possible as well as restoring energy systems.

Raysan Khreibit 1995 states that the interest in rest between the performance of exercises contributes to raising the functional efficiency as well as the development of the level[13] , which did not happen in the traditional approach of the coach, which caused a slight rise in the level did not constitute statistically significant differences.

Table (3) shows the arithmetic means and standard deviations of the basic skills of basketball between the pre- and post-tests of the control and experimental groups

Significance level	Calculated T	Sig	Go away		southern		auditions	
			deviation	middle	deviation	middle		
D	3.63	0.02	1.04	10.54	1.12	5.07	Free Throw Shooting	Experimental
D	2.97	0.00	1.03	8.94	2.83	10.43	passing	
D	3.75	0.01	2.94	13.11	2.42	15.06	A pat on the back	
D	2.94	0.00	1.41	8.65	1.43	5.84	Free Throw Shooting	Officer
Non D	1.84	0.17	1.94	10.32	1.06	11.04	Scroll	
Non D	1.94	0.07	1.75	14.06	2.03	15.53	Pampering	

* Tabular value (t) under the level of significance (0.01) at the degree of freedom (9) (2.82)

Table (3) shows that there are statistically significant differences in favor of the post-tests of the experimental group in the basketball skills tests under study because the value of (SIG) is greater than the value of 5%, while the control group

[13] Raysan Khreibit Majeed: Applications in Physiology, Pioneering Training, Noon Office for Preparation of Irrigation Day, 1st Edition, Al-Kitab Center for Publishing, Cairo, 1997, p. 309

achieved only significant differences in the skill of shooting from the free throw only because the value of (SIG) is greater than the value of 5%

The researcher sees superiority differences in the experimental sample of the quality of skill exercises that emphasize the correct skill performance and give sufficient time to the sections of movement and the use of force that suits each stage through guidance and correction during the performance of the experimental sample in addition to that the high level of special strength of the muscles working on the performance reflected on the improvement of skill performance and accuracy.

The researcher also believes that the different exercises and their diversity contribute to the tendencies and motivation to learn, retain skills and develop the level of learners.

This is confirmed by Khion 2010 that the educational curriculum should contain exercises in different forms and situations that can be implemented and through explanation and correction of errors the level is improved.14

3-2 Presentation of the results of tests and dimensional measurements in tests and dimensional measurements of the static and dynamic balance and the force characteristic of speed of the legs, torso and arms between the experimental and control groups

Table No. (4) represents the arithmetic mean, standard deviation, and value of T and (Sig) in the tests and dimensional measurements of the static and dynamic balance and the force characteristic of speed for the legs, trunk and arms between the experimental and control groups

level Indication	t	Sig	Officer		Experimental		test
			deviation	middle	deviation	middle	
D	2.19	0.04	1.62	10.85	1.62	14.04	Fixed balance
Non D	1.66	0.08	3.82	18.88	1.64	16.86	Moving balance
D	2.43	0.00	1.1	5.94	1.21	7.74	The characteristic power of speed for the legs

Yarub Khion: Kinetic Learning between Principle and Application, 2nd Edition, 2010. PHAR56[14]

Non D	**1.57**	**0.09**	**1.03**	**3.17**	**1.14**	**3.53**	**The characteristic force of speed of the arms**
D	**3.05**	**0.00**	**1.53**	**4.09**	**1.04**	**5.93**	**The characteristic force of the speed of the trunk**

* Tabular value (t) under the level of significance (0.05) at the degree of freedom (18) (1.734)

It is clear from Table No. (4) that there were significant differences in the tests of fixed balance and strength characteristic of speed for the two legs and the distinctive strength of the trunk between the experimental and control groups in the post-tests and in favor of the experimental group and there were no differences in the test of dynamic balance and strength characteristic of speed of the arms between the two groups **.**

Table No. (5) represents the arithmetic mean, standard deviation, and the value of T and (Sig**) in the tests and dimensional measurements in some basketball skills between the experimental and control groups**

Significance level	**Calculated T**	Sig	**Officer**		**Experimental**		**auditions**	
			deviation	**middle**	**deviation**	**middle**		
D	**2.74**	**0.00**	**1.41**	**8.65**	**1.04**	**10.54**	**Free Throw Shooting**	**Officer**
D	**2.93**	**0.01**	**1.94**	**10.32**	**1.03**	**8.94**	**Scroll**	
D	**1.84**	**0.03**	**1.75**	**14.06**	**2.94**	**13.11**	**Pampering**	

* Tabular value (t) under the level of significance (0.05) at the degree of freedom (18) (1.734)

It is clear from Table (5) that there were statistically significant differences in the post-tests of the skill of shooting basketball under study between the experimental and control groups and in favor of the experimental.

The researcher believes that the reason for the differences between the experimental group and the control in tables (4) and (5), which illustrates the differences in the special strength and shooting basketball is due to the functional responses shown by the progress in the level of strength characteristic of speed of the arms, legs and legs that participate in the implementation of skill performance as well as the static and dynamic balance and the researcher believes that this was achieved by the exercises accompanying the performance of the educational curriculum to develop skill performance such as scoring and Tabtaba and dribbling and handling, so the researcher believes that the reason for learning And improve skill performance is the improvement of balance and special strength, which showed differences on students educated for skills because the exercises were emphasizing the muscles involved in the muscular work of correction skills as well as the development of motor balance and fixed that participates significantly in the performance of correction skills of stability and movement and jumping, and the researcher also believes that the exercises used in the educational units are part of the development in the physical level, which raises the level of accuracy of skill and tactical performance, which is reflected on Level up. And mentions Adel Majeed Khazal and Mahasen Hussein 2003 "The use of external load accompanying including body weight during the teaching of skill performance leads to the progress of the level as it be a need of learning needs" and the researcher believes that her choice to the characteristic of strength distinctive speed of the arms, legs and trunk is compatible and facilitates skill learning and motor transfer.[15] " In addition to the good selection of exercises in proportion to the mental, physical and age abilities of the research sample. As well as good implementation of the procedures of the experimental variable in terms of the number of repetitions of exercises, which is one of the foundations of learning and rest periods that give an opportunity to restore the energy system, which enables learners to repeat the exercise and skills in a better way, as the researcher believes that the development of special strength has a significant impact on the learning process because the physical characteristic is positively affect the performance of skills.

More importantly, the researcher chose the muscles that are similar to the process of implementation and participation in the process of shooting with basketball, including the kinetic transfer of the legs and the great impact of the trunk muscles in addition to the muscles of the arms.

[15] Adel Majeed Khazal, Mahasen Hussein: Sports training for women and its physiological effects, first edition, 2023. PHAR48

Mohammed Sobhi Hassanein 1987 confirms that "muscle strength increases with the increase of neurostimuli developed by the trainer in his educational and training curriculum,"[16] which is what the researcher sought

Louay Kazim 210 asserts that "learning must be based on the development of physical qualities, including the strength trait through which learning can be improved."[17]

The researcher also attributes the differences with the control group to the time of the variable, the size of the performance and the number of repetitions, which is added to the control group.

Wajih Mahgoub (2001) states that "the content of exercises, which depends on the preparation and consultation of thinking, senses and mental processes, contributed to the development of the physical aspect of the experimental sample."[18]

4- Conclusions and recommendations:

4-1 Conclusions: The most important conclusion of the researcher is the following:

1- The educational exercises prepared by the researcher and accompanied by her balance exercises provoke the learning of skills and the development of special strength.
2- The improvement of special strength contributed to the learning of basic skills and the development of their accuracy.
3- The experimental variable prepared and proposed by the researcher made significant differences between the tests and measurements (static and dynamic balance and the force characteristic of speed of the arms, torso and legs) in favor of the post-tests.
4- The traditional approach of the control group made significant differences in the tests (strength characteristic of speed for the two men only) in favor of the post-tests

16 Muhammad Sobhi Hassanein: Measurement and Evaluation in Physical Education and Sports, 3rd Edition, Dar Al-Fikr Al-Arabi, Cairo, 1995.p 288

17 Loay Kazem Muhammad: The effect of a rehabilitation approach on the biorhythm of its physical cycle on some physical characteristics, range of motion and biochemical variables after the removal of the meniscus of the knee joint, PhD thesis, University of Basra, 2010, p. 123

18 Wajih Mahgoub: Motor Learning Theories, 1st Edition, Dar Wael for Printing and Publishing. Year 2001 page 38

5- The experimental variable prepared by the researcher made significant differences in favor of the experimental group in the correction skills under study in the post-tests.
6- The traditional approach of the control group made significant differences in the tests of the skill of shooting from the free throw area in the post-tests
7- The experimental variable contributed to the high level of learning of the shooting skill despite the small time period of the experimental variable
8- Despite the changes in the control group, they do not rise to the average level compared to the changes in the experimental group.
9- Through the statistical description of the research sample, it is clear the weakness of the physical level of the students, especially the characteristic of strength characterized by speed, which is the basis for the performance of skills.

4-2 Recommendations: The most important recommendation of the researcher is the following:

1- Adopting the exercises prepared by the researcher to increase the speed of the learning process for students in the skill of shooting with basketball.
2- Emphasis on the development of the characteristic of motor balance and stability, especially for the muscles involved in the performance of skills.
3- Increasing attention to raising physical fitness, especially the characteristic of strength characterized by speed for working muscles.
4- Encouraging students to participate in the application of the physical education lesson in schools because of its physical, health, functional and psychological returns.
5- Conduct research in and using other means and methods in order to speed up the learning process and increase the suspense in the case of the lesson.

Appendix No. (1) showing the educational units

Educational Unit: (30-45) Educational Objective: Emphasis on raising the psychological aspect

Educational Objective: 1- Learn the skills of passing - scoring Educational unit: first

Rest time between workouts	Rest time between iterations	Number of repetitions	Exercise time	Exercises suggested in the curriculum	Main Section: Educational Activity:	t
2 /D	45s	3	2/min	4		1
2 /D	45s	2	2/min	16		2
2 /D	45s	1	2/min	13		3
2 /D	45s	3	2/min	6		4
2 /D	45s	2	2/min	11		5
2 /D	45s	1	2/min	3		6

"Educational Exercises"

1- Tabtaba with the path with the movement of the ball between the feet and to the back of the body and forward the body while maintaining the movement by changing the direction of the ball by fingers and the movement of the wrist and keeping the freshness often forward during the walk.

2- Tabtaba between the height signs (160 cm) the distance between them (75 cm) the number of signs 6 Perform the exercise back and forth.

3- Tabtaba between the signs of its height (160 cm) the distance between them (60 cm) the end of the fourth sign is from the free throw point and then the aim is made.

4 - signs (4) distributed on the outer circle of the free throw the player Baltabba rapid movement back and forth for each sign and return to the center of the circle and with the completion of the last sign is corrected.

5- Tabtaba 5 signs distance between them 75 cm starting from the middle of the arena and when they pass the throw of the ball handling to a person under the basket who returns it and then plays the role of defense to prevent shooting at the target.

6- Jumping on barriers with a height of (25 cm) number (5) Tabtaba after it and shooting from the bottom of the basket (peaceful) from the sides and front.

7- From half of the arena, the handling begins in the middle player and in the form of (8) and progress to shoot.

8- The middle of the square Tabtaba and in the form of No. (8) and then correction.

9- Long handling in the middle of the arena to the coach at the bottom of the basket and then running (5) meters with passing 3 obstacles with a height of 40 cm 3 signs moves between them and then receives the ball from the coach to perform the shooting.

10- Throwing the ball on the board from the free throw area and running to follow the ball and re-shoot from the bottom of the basket.

11- Throwing the ball on the board from the free throw area and running to follow the ball and catch it and return to the free throw area and turn to score by jumping in the free throw.

12- Running and patting from the middle of the arena and then scoring from the free throw area with a negative defender. After each repetition he passes 3 contraindications with a height of 30 cm .

13- Standing and the player's back facing the basket and the ball is received and then back with the drum, then rotation and then scoring on the basket. After each performance, 4 obstacles with a height of 40 cm are passed.

14- Handling from the middle of the arena to a coach under the basket, then running and jumping over a 40 cm height, then receiving the ball in the free throw area, and then scoring by jumping (peacefully) from over the "terrace".

15 - Tabtaba from the middle of the field and make movements of deception and camouflage and rotation to pass the opponent and scoring. The performance of the exercise is interspersed with a height of 35 number 4.

16 - jump over barriers height (30 cm) (6) barriers and then receive the first ball in which he performs handling and the second receives it for scoring.

17- The player has his back facing the basket from both sides and in front while moving on the free throw line, and each receipt rotates and jumps over two blockers with a height of 45 cm and then shoots.

18- A long throw from in front of the middle of the arena to the player below the target, who runs to the free throw point and throws the ball on the board stage to be followed by the first player and scores. Where is it during the transition for all learners to jump over a blocker number two with a height of 50 cm

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