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The effect of applying (SAQ) exercises according to the comprehensive method (multi-level) in improving some motor abilities and the level of basketball skill performance among middle school students

Nada Qais Ali
Ministry of Education – Directorate General of Rusafa II Education
nada.qais.ali@ec.edu.iq

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Corresponding Author :

00647818913877

ABSTRACT

The use of SAQ exercises comes as a comprehensive training method aimed at improving skill performance in basketball, as it contributes to refining motor abilities such as speed, agility, balance, in addition to enhancing the basic skills of the game such as handling, patting, and shooting. The comprehensive or multi-level method represents an integrated training framework. The research problem shows that many current educational programs do not focus enough on integrating these aspects in an integrated manner, which leads to poor performance of students in competitive situations and research objective. To identify the effect of exercises (SAQ) according to the comprehensive method (multi-level) in improving some motor abilities and the level of skill performance in basketball.and used the experimental approach on a sample of (42) students from the fifth preparatory and conducted the necessary tests in motor abilities and skills and the exercises were applied for a period of (6) weeks (13) educational units and the researcher concluded that the use of exercises (SAQ) according to the comprehensive method (multi-level) was more effective in improving motor abilities and the level of skill performance in basketball and recommended the integration of exercises (SAQ) in the educational curricula by including exercises (SAQ) in the teaching plans of team sports, especially basketball

1-1 Research Introduction and Importance:

Sport is an essential part of human life, as it contributes to the development of physical, mental and psychological aspects. Among the team sports that have been widely popular around the world, basketball stands out as one of the most important games that require high levels of physical skills and motor abilities, and due to its importance, the development of skill performance and motor abilities of learners has become a major goal sought by teachers and specialists in the field of physical education and sports. In recent years, the search for innovative science-based teaching methods to achieve the best possible results in improving athletic performance has increased. Among these methods, the application of speed, agility and strength exercises, known as (SAQ), has emerged as one of the modern methods that have proven effective in developing the skills and physical abilities of learners in various sports. These exercises are based on enhancing the ability to move quickly, sudden change in direction, and explosive power, making them very suitable for basketball that requires such skills.The fact that this sport is one of the fast sports that depends on the element of Al-Maqaji in performance. The preparatory education stage is considered a critical stage characterized by rapid physical and mental development, making it an ideal period for the development of motor and skill abilities. In this context, the use of SAQ exercises comes as a comprehensive training method aimed at improving skill performance in basketball, as it contributes to refining motor abilities such as speed, agility, balance, in addition to enhancing the basic skills of the game such as handling, tabtaba, and shooting. The comprehensive or multi-level method represents an integrated training framework aimed at achieving a balance between the development of physical abilities and skills at the same time. By incorporating SAQs into this method, significant improvements can be achieved in the overall performance of female basketball players in the middle school, as the focus is on developing motor and skill skills in a coherent and integrated manner. Hence, the importance of this study is highlighted by applying modern educational methods in educational institutions to enhance students' athletic performance and develop their motor skills. It also seeks to provide a practical framework that trainers and teachers can use in their training programs to achieve the best results. The implementation of SAQ exercises is a step towards improving the quality of sports training in schools, which enhances the ability of students to actively participate in sports competitions and raise their overall level. The use of SAQs in the overall style framework is an innovative approach to learning, focusing on the development of learners from

multiple aspects rather than focusing on just one. By designing an educational program that includes diverse and intense exercises, physical performance and skill are improved simultaneously, enhancing students' ability to apply these skills in a competitive environment such as basketball games.

1-2 Search problem:

The educational process in school sports faces many challenges that prevent it from achieving its maximum potential in developing the motor abilities and skill performance of students. The preparatory stage is considered one of the critical stages that need effective training methods that contribute to building physical and skill capabilities in an integrated manner. However, traditional methods of learning often lack diversity and creativity, leading to poor results in terms of improving athletic performance. In basketball, the game requires a high level of basic skills such as handling, patting, and aiming. In addition to advanced mobility capabilities including speed, agility, and explosive power. However, many current educational programs do not focus enough on integrating these aspects in an integrated manner, resulting in poor performance of students in competitive situations. Hence the problem of the study stems in the search for innovative and effective training methods that contribute to improving the skill performance and motor abilities of students. The application of (SAQ) exercises according to the comprehensive (multi-level) method is one of the modern methods that combine the development of physical and skill aspects. However, the question remains about the effectiveness of these exercises in achieving the desired goals in developing sports performance.

1.3 Research objectives

1- Identify the exercises (SAQ) according to the comprehensive method (multi-level) and some motor abilities and the level of skill performance in basketball
2- Identify the effect of (SAQ) exercises according to the comprehensive method (multi-level) in improving some motor abilities and the level of basketball skill performance among fifth middle school students

1.4 **Research hypotheses**

1- There are statistically significant differences between the pre- and post-measurements in improving some motor abilities and the level of basketball skill performance among fifth preparatory students

2- There are statistically significant differences between the experimental group and the control group and in favor of the experimental group

1.5 **Research areas**

1-5-1 Time Range: Duration from 1/10/2024 to 11/11/2024

1.5.2 Spatial area: Baghdad – Rusafa 2

1-5-3 human field: (42) educated from the fifth preparatory

2.1 Study methodology:

The current study adopted the experimental method in the research due to its suitability to the requirements of the study and its conduct. The choice of the curriculum is one of the most important steps that result in the success of the research to achieve the goals.

2.2 Study population:

The research community is defined as "all the vocabulary of the phenomenon that the researcher is studying, or all the individuals, persons or things that are the subject of the research problem" The research community is intentionally defined ((السعداوي و الجنابي، 2013، 30 صفحة)Middle school students fifth grade) From female students A. Paradise for Girls in Bismayah area And selecting a sample of female students from 42 female students Then divide the sample into two experimental groups (21) Student from Division (B) and a control (21) Student from Division (C) The research The sample was divided randomly.

2-3 Means of collecting information, data collection and tools:

- Arab and foreign sources and references.
- Interviews:
- Online Survey
- Testing & Measurement

2-4 Devices and tools used in research:

- Basketball court
- Basketball Number (4)
- Signs
- Tape measure
- Laptop computer (DELL)

2.5 Testing and measurement:

1- **Agility test** : (خريبط، 1989، صفحة 156)

The instruments are five columns and a stopwatch

- An area in the form of (+) and each side is 5 m away from the center

Procedures: The laboratory takes a standby position from the beginning of standing at the center and when the start signal is given, the laboratory runs in the designated place until reaching the column, then turning and returning to the center, then turning to the other column and so on until the completion of the four fields and reaching the finish line.

2- Balance test standing on the metatarsal (جواد، 2004، صفحة 138)

Purpose of the test : Measurement of static balance.

Tools : Off watch

Performance: The tester takes a standing position on one of the feet, preferably the foot of the elevation man, then he puts the free foot of the leg on the inner side of the knee of the man on which he stands, takes the waist position and puts the other leg on the knee of the fixed foot from the inside and the hands to the side, and when hearing the start signal, the laboratory raises the heel of the fixed foot to stand on the tips of his foot instead of the whole foot,

Degree calculation: records the time that starts from the moment the man is lifted from the ground until the mistake is made or the balance is lost.

3- Compatibility (Numbered Circuit Test): (عبد الفتاح ;محمد ,ياســر؛ 2004، صــفحة 103)

Purpose of the test: to measure the compatibility of the legs and the eye.

Tools used: stopwatch, draw on the ground eight circles with a diameter of 60 cm each,

Test instructions: The laboratory stands inside circle No. (1) and when hearing the start signal, it jumps together to circle No. (2) and then circle No. (3) and so on until circle No. (8) and this is done at full speed.

Grading calculation: records the time it takes for the laboratory to travel through the eight circuits to the nearest tenth of a second

The number of attempts is 3, and in case of error the player with any of the circuits repeat the test.

Skill tests:

- Thoracic Handling Test: 1(50 صفحة ،2006 ،إبراهيم)

Test objective: - Measurement of handling and receipt of the ball.

Necessary tools:flat ground. Smooth wall. Stopwatch.basketball.

Performance Description:- The laboratory stands behind the drawn line on the ground and at a distance of (9) feet, i.e. (2.70) meters from the wall, and when the start signal is heard, the laboratory handles the ball to the wall and receives it and performs (10) consecutive handlings.

Registration: - The test performance time is calculated from the moment the ball touches the wall in the first successful handling until the ball touches the wall in the last

handling, then the time is calculated in seconds and ten seconds and that two attempts are recorded for the laboratory.

* **Note**:- The least time attempt is recorded

2-Tabtaba Test: (إبراهيم، 2006، صفحة 58)

Test objective: - Measuring the speed of running with tabtaba around a set of signs.

Necessary tools : basketball.stopwatch.(6) Signs.

Note: - Draw a line for the beginning and the end, and the first sign is placed at a distance of (5) feet, i.e. (1.50) meters from the starting point, and the distance between the signs is (8) feet, i.e. (2.40) meters.

Performance Description:- The tester stands behind the starting line with the ball and when hearing the start signal, he continuously beats between the signs back and forth until he crosses the starting line after returning.

*** Note**:- Test training is allowed before starting.

Registration: The time during which the laboratory performs the required work is calculated and the time it took in the two attempts allocated to it is recorded to be calculated at the least in time.

3- Peaceful scoring test: (حمودات و جاسم، 1987، صفحة 234)

Purpose of the test: Measurement of the accuracy of peaceful scoring.

Necessary tools: basketball court, basketball goal, whistle to give the start signal.

Number of attempts: Each player is awarded (10) attempts.

Calculation of points: The player is awarded one point for each successful scoring case, where the highest points that the player can collect are (10) points.

2.6 Pre-tests :

The pre-tests were conducted in the yard of Aden Secondary School for Girls on Tuesday (1/10/2024) at eight o'clock in the morning, and the sequence of tests was as follows:

1- Compatibility Test
2- Stability Aiming Test
3- Handling Test
4- Balance Test
5- Tabtaba Test
6- Agility test

2.6.1 Homogeneity of the research sample

Table (1)
Homogeneity of his sample search

Torsion coefficient	Deviation	Broker	Middle	Unit of measurement	Variable	t
2.098	0.172	19.025	19.023	second	Agility	1
0.517	0.844	5.00	4.988	second	homeostasis	2
0.306-	0.171	9.955	9.944	second	Compatibility	3
0.023	0.599	12	12.477	number	Handling	4
2.098	0.175	12.025	12.023	second	Pampering	5
0.023	0.957	5.0	4.904	point	Correction	6

2.6.2 Equivalence of the research community:

The researcher worked to divide the research community into two groups and in a lottery manner, one of them is an experimental division (a) and the other is an officer of division (b) and the number (21) educated in the fifth grade for each group and the researcher conducted parity between the two groups for physical variables and achievement. Table 4 shows the equivalence between the control and experimental groups.

Table(2)
Shows the equivalence between the two research groups in variables

Significance	Error level	Calculated value (T)	Control group		Experimental Group		Unit of measurement	Variable	t
			on	Going to	on	Going to			
Immoral	0.341	0.964	0.213	19.049	0.118	18.998	second	Agility	1
Immoral	0.788	0.271	0.864	4.952	0.843	5.023	second	homeostasis	2
Immoral	0.764	0.302	0.140	9.936	0.201	9.952	second	Compatibility	3
Immoral	0.221	1.245	0.517	12.352	0.663	12.581	number	Handling	4
Immoral	0.341	0.964	0.205	11.919	0.118	11.998	second	Pampering	5
Immoral	0.201	1.299	0.902	4.714	0.995	5.095	point	Correction	6

*Moral under 40 degrees of freedom and error level≤0.05

It appears that the value of (T) was under the level of error greater than (0.05) and the degree of freedom (42) and this indicated that there were no significant differences between the results of the members of the experimental and control groups.

2-7 Main experience :

- The researcher prepared multidimensional educational exercises two educational units per week on (Monday andThursday)
- The experiment started on Thursday(3/10/2024) and ended on Thursday (7/11/2024).
- Duration of the experiment (6) weeks (13) educational units
- Multi-dimensional exercises aimed at enhancing the motor skills required in basketball such as handling, shooting and patting, along with SAQ exercises (speed, agility, strength), which help students in
- Designing exercises according to the age group and physical level of students.
- Taking into account the individual differences between students in endurance and motor skil
- Exercise Comprehensiveness Incorporates exercises that promote all elements of fitne (speed, agility, and strength).
- Exercises range from ease to difficulty as the level of challenge gradually increases.
- Time management and repetition Allocate a specific time for each exercise based on its goa
- Distribute exercises between strong stimulation and adequate breaks.
- Apply techniques focused on improving neuromuscular coordination.
- SAQ Applications according to the comprehensive method (multi-level)
- Introductory stage: dynamic warm-up exercises to stimulate the muscular and nervous syste
- Examples: light running with change of direction, jumping rope, dynamic stretchi movements.
- Speed exercisesExamples: Short distance jogging with changing directions.
- Improve motor response.Increase the speed of movement and launch. Running between con zigzag.
- Agility:Examples:Using kinetic ladders to develop quick and varied steps.
- Pivoting exercises to improve balance and flexibility.Promote motor balance.Increased abil to quickly change direction.Vertical jumping on barriers.Squats with light weights.
- Apply continuous feedback and self-assessment Exercises encourage students to regular monitor their performance and analyze their progress, reinforcing individual responsibility f self-development and raising awareness of soft skills and areas that need improvement.
- Gradient difficulty and align exercises to different performance levels so that they a adjustable to suit the students' different abilities and allow them to progress gradually, givi everyone opportunities to learn regardless of skill level.
- Practical exercises for basketball:examples:passing the ball quickly between students wi changing positions.Shooting exercises under time pressure or with extra movement.Devel ball control and improve shooting accuracy.Increase the ability to make correct mot decisions while playing. Develop team play skills and improve motor interaction
- Closing stage:

- Constant relaxation and stretching exercises. Performance evaluation by following up improving students' motor abilities and skill level skills.
- Appendix 1 shows a model of an educational unit.

2-8 Post-tests:

The researcher conducted the post-tests at Al-Azza Secondary School for Girls on Sunday, 11/11/2024. And after the completion of the proposed exercises and the same steps and the conditions in which the tests were conducted (approximately), taking into account the temporal and spatial conditions of the tests.

2-9 Statistical Methods:

The researcher used the statistical bag SPSS and the following statistical laws: arithmetic mean. and median. and standard deviation. and torsion coefficient. and T-test for independent and non-independent samples

3-1 Presentation of the results of the differences between the pre- and post-tests of th experimental and control groups:

Table (3)

Shows the values of the arithmetic mean, standard deviation, calculated (T) value and statistical tabular between the dimensional and tribal measurements of the members of the control and experimental groups

ignificance	Error level	(i) Adoption of the Covenant on Calculated	p f	P	Go away		southern		*The llection*	Variables
					on	oing to	on	oing to		
Moral	0.000	12.22	0.136	0.362	0.048	18.635	0.118	18.998	perimenta	Agil
Moral	0.000	7.730	0.068	0.116	0.193	18.933	0.213	19.049	Officer	
Moral	0.000	14.582	0.860	2.738	0.624	7.761	0.843	5.023	perimenta	homeostasis
Moral	0.000	8.552	0.740	1.380	0.658	6.333	0.864	4.952	Officer	
Moral	0.000	9.187	0.186	0.374	0.089	9.578	0.201	9.952	perimenta	Compat
Moral	0.000	6.088	0.093	0.123	0.092	9.812	0.140	9.936	Officer	
Moral	0.000	16.141	0.781	2.752	0.643	15.333	0.663	12.581	perimenta	Handling
Moral	0.000	4.802	0.890	0.933	0.643	13.285	0.517	12.352	Officer	

Moral	0.000	9.055	0.173	0.343	0.096	11.654	0.118	11.998	perimental	Pampe
Moral	0.028	2.376	0.250	0.130	0.205	11.919	0.205	11.919	Officer	
Moral	0.000	14.744	0.740	2.380	0.749	7.476	0.995	5.095	perimental	Correction
Moral	0.000	8.032	0.624	1.095	0.813	5.809	0.902	4.714	Officer	

❖ Under the significance level (0.05) and the degree of freedom is 20.

3-2 Presentation and analysis of the results of the differences in post-tests between the experimental groups and the control group: -

Table (4)

Shows the results of the differences in post-tests between the experimental groups and the control group

Significance	Error level	Calculated value (T)	Control group		Experimental Group		Unit of measurement	Variable	t
			on	Going to	on	Going to			
Moral	0.000	6.851	0.193	18.933	0.048	18.635	second	Agility	1
Moral	0.000	7.213	0.658	6.333	0.624	7.761	second	homeostasis	2
Moral	0.000	8.500	0.092	9.812	0.089	9.578	second	Compatibility	3
Moral	0.000	9.168	0.643	13.285	0.643	15.333	number	Handling	4
Moral	0.000	5.336	0.205	11.919	0.096	11.654	second	Pampering	5
Moral	0.000	6.904	0.813	5.809	0.749	7.476	point	Correction	6

*Moral under 40 degrees of freedom and error level≤0.05

3-3 Discussing the results of the differences between the experimental groups and the control group: -

The results of the post-tests showed that there were statistically significant differences between the experimental group and the control group in favor of the experimental group, which relied on exercises (Leg) according to the comprehensive method (multi-level) in improving some motor abilities and the level of skill performance in basketball among students of the fifth preparatory grade. The researcher believes that the exercises (Leg) (Speed, agility, and acceleration) is one of the modern training methods that focus on improving basic motor abilities. Using this type of exercise in a comprehensive and multi-level manner helped students achieve remarkable progress in speed, agility, and motor

response. This method takes into account the individual differences between students as it allows the performance of the skill at different levels, as the learner starts from the appropriate level for him and then graded in the rest of the levels until it reaches the level required of him in the performance These developments contributed to improving basketball skills, such as dribbling, passing, and shooting. This is due to the interactive and flexible nature of these exercises, which enhance neuromuscular coordination and the development of motor performance comprehensively.Harre, D. 1982) pointed out that "the use of a comprehensive and multi-level method in training enhances neuromuscular coordination and leads to improved performance in various sports activities, especially among beginner groups" and this superiority reflects the high effectiveness of exercises ((D, 1982, pp. 45-50)Leg) according to the comprehensive method in developing motor abilities and the level of skill performance in basketball. She stresses the importance of adopting modern training methods to improve sports performance, especially in emerging age groups such as fifth grade preparatory students. Unlike the control group, which relied on traditional training methods, which often focus on repetition without diversifying exercises or paying attention to developing motor abilities comprehensively. This deficiency may be the reason why they did not achieve the same level of improvement as the experimental group. The comprehensive (multi-level) method is based on providing integrated training that takes into account the individual differences between the players, allowing each student to achieve an advanced level of performance according to her own capabilities. This technique also contributes to improving the ability to concentrate and increase the rapid response during play.Brown, L., & Ferrigno, V. 2005The importance of integrated training aimed at improving speed, agility and strength and how to apply them in training programs to achieve a comprehensive improvement in sports performance, as it helps to provide a stimulating and dynamic training environment that contributes to raising the level of performance of female players.Thus, I was able to make significant progress compared to the control group and the results were logical. (L & V, 2005, pp. 112-118)

4. Conclusions and recommendations:

4.1Conclusions

1- The use of SAQ exercises according to the comprehensive (multi-level) method was more effective in improving motor abilities and skill performance in basketball compared to traditional methods.
2- The use of SAQ exercises according to the comprehensive (multi-level) method was more effective in improving the agility of basketball learners in the middle school.

3- The use of SAQ exercises according to the comprehensive (multi-level) method was more effective in improving the balance of basketball learners in the middle school.
4- The use of SAQ exercises according to the comprehensive (multi-level) method was more effective in improving compatibility for basketball learners in the middle school
5- The use of (SAQ) exercises according to the comprehensive (multi-level) method was more effective in improving the handling skill of basketball learners in the middle school
6- The use of (SAQ) exercises according to the comprehensive (multi-level) method was more effective in improving the skill of tabtaba for basketball learners in the middle school
7- The use of (SAQ) exercises according to the comprehensive (multi-level) method was more effective in improving the shooting skill of basketball learners in the middle school
8- Traditional exercises that focus on repetition and non-diversification may be less efficient in developing the motor skills required in modern sports.

4.2 Recommendations:

1. Integrating SAQ exercises into the educational curriculum by including SAQs in the teaching plans of team sports, especially basketball, to achieve a comprehensive improvement in motor and skill performance
2. A holistic (multi-level) approach is recommended in the design of tutorials, to ensure that the exercises are varied and that the needs of all players are met individually.
3. Similar research is recommended on different age and gender groups to evaluate the effectiveness of exercise (SAQ) and the overall approach to improving athletic performance.
4. The need to train teachers to use SAQ exercises according to the comprehensive method, and to familiarize them with the methods of applying them effectively

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Appendix (1)

Model of the educational unit of the grade: fifth scientific

The general objective of the educational unit: to improve some motor abilities (speed agility, balance).

Developing skill performance (handling, tabataba, shooting) in basketball.

Part I: Warm-up (10 minutes):

General warm-up exercises: light jogging around the field (2 minutes). Dynamic stretching (e.g. lateral stretching, arm rotation, knee lift).

Special warm-up exercises: rope jumping (30 seconds × 3 rounds). and agility movements using cones (Zig-Zag Running).

Part II: Main Part (30 minutes)

Exercises to improve motor abilities using (SAQ):

1- Speed exercise (5 minutes): Sprint Drills for 10-15 meters with sudden stops.Focus on fast starting and changing direction.

2- Agility exercise (5 minutes): Agility Ladder: Double jumping, one step per box, or lateral movements.

3- Balance exercise (5 minutes): Standing on one leg while passing the ball (20 seconds per leg). And walk over the balance board with the ball carrying.

Skill performance improvement exercises:

Handling exercise (5 minutes):

1- Pass the ball quickly between two players with a change of direction after each pass.

2- Perform scrolling while in motion using the steps of the ground ladder.

Tabtaba (5 minutes):

1. Tabtaba between cones with sudden stops or rapid change of direction.

2. Perform hand-to-hand tapping alternately with improved ball control.

Shooting Exercise (5 minutes):

1- Aiming while running towards the basket from several angles.

2- Carry out quick corrections after tabtaba for a short distance.

Part III: Calming Down (5 minutes)

1- Static stretching: stretching the muscles used such as the thigh, hamstrings, and shoulders.

2- Deep breathing exercises: relaxation and deep breathing to return the body to its norma state.

General observations:

All students are involved in the exercises, taking into account individual differences. Use individual and group coaching to ensure exercises are properly understood. And focus on gradual repetition to improve motor and skill performance continuously.