The Impact of the Learning Strategy by Playing to Develop the Motor Abilities of Kindergarten Children From 4-6 Years

Hikmat Abdel Sattar Alwan[1], Hind Adil Ghazi[2]
[1,2] College of Physical and Sport Science, University of Thi-Qar, Thi-Qar,64001,Iraq
E-mail: Hikmat.alwan@utq.iq
E-mail: hindadel165@gmail.com

Abstract
The importance of the research through the use of the method of learning by playing to develop the motor abilities of the children of Riyadh at the age of (4-6) years, which contributes in the future to their interaction with the environment that surrounds them and also to increase the development of their capabilities and transfer them to the special sports skills on which all sports events and games depend. The problem of the research lies through the field visits carried out by the researcher to some kindergartens, conducting interviews with the Riyadh administrations and teachers, reviewing the curricula in general and physical education classes in particular, and speaking with their parents, so it became clear to her that purposeful games are not used in kindergartens that develop their capabilities and motor abilities. From the foregoing, the research problem is determined by designing group motor games according to the strategy of learning by playing as a program from which we guarantee the good use of these games and their employment in their natural field, as well as knowing the impact of their use on motor abilities as an educational measure, and the research objectives were to design small games according to the learning strategy By playing for children aged 4-6 years, and identifying the effect of small games according to the strategy of learning by playing in developing motor abilities (balance, agility, flexibility) for children aged 4-6 years, and identifying the differences between the control and experimental groups in the post-tests for children aged 4-6 Years. As for the research methodology, the researcher followed the experimental approach with two equal groups, the control and experimental groups (with pre and post test), and the research community was, so the research community was determined, represented by kindergartens for ages (4-6) years in Dhi Qar Governorate, whose number is (571) children, males and females. One of the most important conclusions is that the use of the learning strategy by playing directly and significantly affected the effectiveness of children's performance, which led to the development of motor abilities, the subject of research.
Keywords: learning strategy; kindergarten children; ability

1. Introducing the research

Introduction and the importance of the research

The childhood stage is the focus of attention of educators and educational institutions since the early years, because of its importance and great impact in building the child's personality and his psychological, mental and motor behaviour.
The first years of a child's life are of great importance because it is a well-formed and prepared material, and because it has a great influence on him about his life, which highlights the importance of raising and caring for a child at this stage of life and his interaction with society and the environment.
"The active child is the child who is constantly moving and working, because his spirit and mind are looking for something external to express him." (1)
The child is hidden behind a closed door, the door to play, and through play we can enter the child's world and deal with him and know his psychological, mental and motor tendencies that are compatible with the environment in which he lives because of their great impact on his upbringing and the formation of his personal characteristics.
Play is an activity that takes place with the intention of pleasure, and the child is pushed to do it through a group of physical movements, so the child's activity is characterized as a play activity and that his preoccupation is play. It is considered essential for pairing communication, as it is a means for the child to interact with his environment and a means for his development and learning. Play is also a means for acquiring and developing different behavior patterns, and it also provides opportunities for mental development for children and meets their natural tendencies. Children and their care in all aspects, which is a preparation to face the development and change that we are experiencing today, and to reach the child during the educational process to such advanced stages of mental, motor and scientific development, it is necessary to use interesting educational methods that stimulate their tendencies and desires and encourage them to learn, and the method of learning by playing increases the interaction The child is with his peers and with the environment that surrounds him, as the motor aspect represents one of the important axes that societies care about in the childhood stage,

doi.org/10.31838/hiv23.03.88 Received: 05.10.22, Revised: 27.11.22, Accepted: 25.12.22.

especially motor abilities such as compatibility, speed of response, balance, agility, flexibility ... etc., as it is considered the basic basis for the motor practice of the child, as the Practicing and caring for its development is a basic pillar of motor practices in the sports activity of the following age stages, and leads to Perform better mathematical skills in the child's future life.

And because the method of learning by playing depends primarily on motor abilities, and that it can mix in an organized way, which is a suitable environment for learning.

Hence the importance of the research through the use of the method of learning by playing to develop the motor abilities of the children of Riyadh at the age of (4-6) years, which contributes in the future to their interaction with the environment that surrounds them and also to increase the development of their capabilities and transfer them to the special sports skills on which all events and games depend. sports.

Research problem

Play has characteristics that can be used by the role of kindergarten in raising children, building their personalities, and their mental and motor balance. Play also occupies a great importance in a child's life because through it he can interact with the environment and communicate with his peers, which is the basis for acquiring abilities related to sports activities. As the games have become very diverse and innovative, but each game has a unique privacy and a specific goal at the age of (4-6) years for the child.

The research problem lies through the field visits* carried out by the researcher to some kindergartens, conducting interviews with Riyadh administrations and teachers, looking at curricula in general and physical education classes in particular, and speaking with their parents. From the foregoing, the research problem is determined by designing collective motor games according to the strategy of learning by playing as a program from which we guarantee the good use of these games and their employment in their natural field, as well as knowing the impact of their use on motor abilities as an educational measure.

Research Objectives

1- Designing small games according to the strategy of learning by playing for children aged 4-6 years.

2- Identifying the effect of small games according to the learning-by-play strategy in developing motor abilities (balance, agility, flexibility) for children aged 4-6 years.

3- Identifying the differences between the control and experimental groups in post-tests for children aged 4-6 years.

Research Hypotheses

1- There is a positive effect of small games according to the learning-by-play strategy to develop the motor abilities of children aged 4-6 years.

2- There are statistically significant differences between the control and experimental groups in the post-test and in favor of the experimental group for children aged 4-6 years.

areas of research

1-5-1 The human field: Pre-school children at the ages of (4-6) years in Al-Yamamah Kindergarten in the center of Dhi Qar Governorate.

1-5-2 The temporal field: For the period from (1/9/2022) to (30/12/2022).

1-5-3 The spatial field: The playground and games hall in the governmental Al-Yamamah kindergarten in the center of Dhi Qar Governorate.

2- Research methodology and field procedures:

Research Methodology

The method is the path that the researcher takes to achieve his goals based on a number of rules and foundations, perhaps the most important of which is knowing the nature of the problem under study, which requires the researcher to choose the appropriate method to reveal the truth at hand.

Therefore, the researcher followed the experimental approach with two equal groups, the control and the experimental one (with pre and post test) to achieve the goal of her research, as it is the most appropriate scientific method for the current research procedures. based on the approved factors, and this is done under controlled conditions" (1).

The research community and its sample

Research community

"One of the things that is taken into account in scientific research is the research sample, because it is the part that represents the community of origin on which the researcher conducts the focus of his work" (), so the sample is the main focus of the work. Therefore, the research community represented by kindergartens for ages (4-6) years in Dhi Qar Governorate, whose number is (571) children, males and females, has been identified.

Research sample

The research sample was deliberately identified by the method of comprehensive enumeration from the children of Al-Yamama Kindergarten, which numbered (130) children, males and females, for the academic year (2120-2022), for the following reasons:

1- There is a sufficient number of the research sample needed by the researcher.

2- Providing the tools needed by the researcher in her research.

3- Availability of indoor halls and outdoor playgrounds.

4- Regularity of children at work.

5- The response of the kindergarten administration and its teachers to the researcher.

The homogeneity of the sample and the equivalence of the two research groups

Homogeneity of the sample

Before starting the implementation of the tests, and in order to control the variables that affect the

accuracy of the research results, the researcher resorted to verifying the homogeneity of the research sample in the variables related to morphological measurements, namely (height, weight, and age), and as shown in the table:
Schedule (1)
It shows the variables (height and weight) and the torsion modulus
for statistical parameters
Variables Unit of measure x + z Coefficient of variation
Length cm 111.57 3.24 2.90
Weight kg 21.11 1.98 9.37
Table (1) shows that the values of the coefficient of variation are less than (30), which indicates the homogeneity of the research sample in these variables.

The equivalence of the two research groups

In order to be able to attribute the differences to the experimental factor, the experimental and control groups must be completely equal in all conditions and variables except for the experimental variable that affects the experimental group without the control. Accordingly, equivalence was made between the two research groups in the pre-tests for some motor abilities tests, for children aged (4-6).) years, and it appeared that there were no significant differences between them, which confirms the equivalence, and Table (2) shows this.
Statistical means
experimental group variables
the control group
The calculated (t) value of the sig score is the level of significance
Torso twisting 20 seconds 9.0500 1.05006 9.2500 1.16416 0.571 0.572 Not significant
Running in the form of a figure 8 19.2000 1.23969 18.8000 1.19649 1.038 0.306 Not significant
Standing on one leg, torso twisting 2.7500 0.86603 2.9167 0.79296 0.492 0.628 Non-significant
Running around a circle 17.5000 2.23607 18.0500 1.66938 0.881 0.384 Not significant
Walking on two parallel stripes for a distance of 10 m 3.5000 0.53452 3.2500 0.70711 0.798 0.439 Non-significant
Running 15 meters from a standing position 2.3333 0.98473 2.7500 1.05529 1.000 0.328 Non-significant
Partridge with the chosen leg 5m distance 4.3750 0.51755 3.8750 0.64087 1.717 0.108 Not significant
Throwing the ball with one hand from above the shoulder 2.4167 0.66856 2.2500 0.66856 0.528 0.603 Not significant

Research tools, devices and tools used:

Research methods: The researcher used the following research methods

1- Arabic and foreign references and sources.
2- Finding the opinions of experts and specialists about determining the validity of *:
Motor ability tests.
* personal interview ** .

Equipment and tools used

1- A medical scale for measuring weight.
2- 1 Lenovo laptop.
3- An electronic stopwatch.
4- Sony camera, 1 number.
5- A flexible tape measure for measuring lengths and distances.
6- 1 whistle.
7- Balls of various sizes and colors.
8- Colored adhesive tapes.
9- Signs number 10.
10- Collars number 10.
11- Empty carton box number 2.
12- Small size chairs, number 4.
13_ Colored artificial sand.
14_ balloons number 10.
15_ wooden stick number 2.
16_ Data registration form.

Determination of motor abilities

In view of what was stated in the theoretical framework (reference) in defining basic motor skills and motor abilities for kindergarten children, some of the skills and abilities were identified and presented to experts and specialists *
Appendix () On this basis, the basic skills (walking, jogging, hopscotch, throwing) got the most percentage (), and also the motor abilities (flexibility, agility, balance, compatibility) got the percentage (), so they were adopted in the research.

Characterization of motor abilities tests

Testing is "a method that requires research methods such as measurement, observation, experimentation, investigation, identification, interpretation, conclusion, and design" ( ) and also that "the estimation method provides us with estimates or value scores for the application of accurately described methods." ( )
For the purpose of obtaining appropriate tests for motor abilities, which are compatible with the chronological age of the research sample, the researcher surveyed many sources and researches.
Scientific studies related to this, including (Al-Khouli and Ratib, 1982, 434) (Khalifa, 11, 1995)
(Abdul Karim, 1995, 255-298) (Abdul Samad, 1998, 189-229) (Ratib, 1999, 201-311) (Faraj, 2002, 372-390) (Al-Hashik and Damad, 2003, 18-29).
The researcher concluded from this a number of appropriate tests to measure motor abilities, and the following points were taken into account in the tests:
The tests should be clear, understandable, and appropriate to the children's level.
The tests should not take a long time and do not require great effort and capabilities.
These tests should not be devoid of elements of suspense and competition.
The following tests were selected for the motor abilities of kindergartens after they were presented to experts and specialists:

Motor ability tests

Name of the test: Twisting the torso for the right and left sides to touch the mark drawn on the wall with

the hands (20) seconds.
The purpose of the test: to measure the kinetic flexibility of the spine.
Tools: whistle, stopwatch.
Performance description:
Draw an X on the wall.
The tester stands against the wall with his back facing the mark.
- When the start whistle is heard, the tester twists to the right and left sides, touching the mark with both hands.
- One of the workers in the assistant work team holds the feet of the laboratory in order to prevent the rotation of the legs when rotating the spine.
The distance between the laboratory and the wall shall be as much as the width of the laboratory shoulder.
Score calculation:
The number of touches in which the tester touches the mark is calculated in (20) seconds.
Test name: Running around the circle .
The purpose of the test: to measure agility.
Tools: whistle, stopwatch, chalk.
Performance description:
Draw a circle on the ground with a diameter of (2) m.
- The tester stops at one of the beginnings of the diameter of the circle and after hearing the start whistle, the tester runs with the extension of the semi-circle, passing through the diameter of the circle, then completes the run with the extension of the curve of the second semi-circle, also passing through the diameter of the circle, up to the starting point, noting that the running of the two semi-circles is considered to be running for the circle once. .
Score calculation:
Records the time the tester travels when running the circuit for two consecutive times.
Test Name: Standing on one foot, extending the arms to the side, and twisting the torso left and right (15) seconds.
The purpose of the test: measuring the kinetic balance of the body.
Tools: whistle, stopwatch.
Performance description:
The tester stands on one foot with the arms outstretched to the sides, and upon hearing the start signal (the sound of the whistle), the tester twists the torso left and right.

Score calculation

Successful attempts represented by twisting the torso to both sides are counted (15) seconds, and failed attempts represented by twisting the torso to the sides with the free foot touching the ground or a little twisting of the torso, which is estimated by the arbitrator, knowing that each twist to the right and left is considered one attempt.
Test name: Running in the form of (8) .
The purpose of the test: to measure compatibility.
Tools: two high jumpers, the distance between them is (2m), a crossbar is placed on them, the height of the center of the laboratory, and a stopwatch.
Performance description:
- The tester stands on the right side of one of the leaders, and when he hears the start signal, he runs in the form of (8), as the tester makes two turns.
Score calculation:
The time during which the laboratory passes two cycles is recorded.
Note: Only two attempts are given for each of the previous tests.

Experimental exams

An exploratory experiment is a survey of the circumstances surrounding the phenomenon that the researcher wishes to study.*
The exploratory experiment is an experimental study to identify some of the negatives and obstacles that the researcher may face while carrying out the main experiment. The exploratory experiment was conducted on 1/1/2022 on 5 female children only, ages (4-6) years.
The aim of the pilot experiment was:
1. Knowing children's perception and comprehension of tests.
2. Knowing the time taken while taking the tests.
3. Ensure the safety and validity of the devices used.
4. Knowing the difficulties that the researcher faces while conducting the experiment, and working to find appropriate solutions for them.
5. Finding out the researcher's ability and ability to conduct research tests.

Group motor games

Principles for preparing and designing collective motor games

The most important foundations that the researcher believes should be taken into consideration when designing motion games for children are:
1- Taking into account the movement games of children's physical and motor capabilities.
2- Ensure safety and security standards when implementing the games.
3- It contains elements of suspense and excitement.
4- Graduation in the motor performance level that is included in the motor duties for each motor game.
5- Preparing joint group motor games associated with basic motor skills and motor abilities.
6- Focusing on developing the spirit of cooperation, community and social interaction.

Pre-tests

The researcher conducted the pretests for the most important motor abilities on Thursday and Friday (9/29-30/2022), for both the control and experimental groups, respectively, at exactly nine o'clock in the morning. And the method of implementing the tests and the auxiliary work team.

Application of the curriculum

After preparing and designing a program of competitive group kinetic games, which is used to develop motor abilities, all the components of this program were presented to a number of experts and specialists in the field of physical education, teaching

methods, and kindergarten education for the purpose of ensuring the validity of the kinetic games used in the program, as they expressed some directions and opinions. And the amendment was made in accordance with the recommendations and opinions that were put forward, and the experts unanimously agreed on the validity of all program paragraphs in terms of the integrity of the wording of the games, their coverage of all program objectives, and their suitability at the sample level. As the application of the games program began on the children of the experimental group by the kindergarten teacher and under the supervision of the researcher, as the program included (16) educational units over a period of (8) weeks, at the rate of two educational units per week, the duration of the educational unit is (30) minutes. The researcher relied on games every week, two games aimed at motor abilities, while the control group continued to implement the method and games used in the kindergarten according to the curriculum of the unit of experience and the implementation of the teacher herself, and the educational units were applied to the experimental group on Sunday and Tuesday, and at nine o'clock in the morning.

Post-tests

The post-tests were conducted on the sample individuals in the same way as the pre-tests were conducted, as the motor ability tests were conducted on the control and experimental group members on Sunday and Monday (4-5/12/2022) and at exactly nine o'clock in the morning, taking into account that The post-test conditions are the same as the pre-test conditions.

Statistical means

The researcher used spss version 20 to process the data statistically

Presentation, analysis and discussion of the results

This section includes presenting, analyzing and discussing the results, according to the data obtained, after completing the application of the experimental approach using the learning-by-play strategy to develop some motor abilities of kindergarten children at the age of (4-6) years.

After emptying the data obtained by the researcher, and to verify the validity of the research hypotheses, the data was analyzed statistically using the appropriate statistical methods, "because it is an illustrative tool for the research, and because it reduces the possibilities of error in the next stages of the research, and strengthens the scientific evidence and gives it strength" ().

"The analysis of information means the extraction of quantitative and qualitative scientific evidence and indicators, which prove the answer to questions and confirm the acceptance or non-acceptance of his assumptions" ().

In order to know the results of some motor abilities tests and in the light of the statistical data reached by the research results after conducting the pre and post tests for the research sample, the presentation, analysis and discussion of the results were organized in the following order:

Displaying the results of the differences between the pre and post tests of the most important motor abilities of the control group and analyzing them

For the purpose of finding out the significant differences between the pre and post tests of the most important motor abilities of the control group, the researcher used the (T.test) test, for corresponding samples, as shown in the table

Table (3) shows the arithmetic means, standard deviations, and the calculated and tabulated t-value between the pre and post tests for the control group of (20) children, as the results were as follows:-

Statistical means Variants	Tribal		Tribal		Tribal	Tribal	significance level
	9.2500	1.16416	10.0000	0.79472	moral	0.32	statistical
Torso twisting 20 seconds (flexibility)	18.8000	1.19649	17.7500	2.69258	non-moral	0.087	non-statistical
Running in the form of the number 8 (compatibility)	2.9167	0.79296	3.5833	0.66856	non-moral	0.087	non-statistical
Standing on one leg torso twist (balance)	18.0500	1.66938	17.0000	1.02598	moral	0.017	statistical

In the torso twisting test 20 seconds: The arithmetic mean in the pre-test was (9.2500) with a standard deviation of (1.16416), while the arithmetic mean in the post-test was (10.0000) and with a standard deviation of (0.79472), while the value of (t) calculated was (2.319), which is greater than the tabular value of (t) at the degree of freedom (19) and the level of significance (0.05), which is (0.32). This indicates that there are significant differences in favor of the post-test.

In the running test in the form of number 8: - The arithmetic mean in the pre-test was (18.8000) with a standard deviation of (1.19649), while the arithmetic mean in the post-test was (17.7500) with a standard deviation of (2.69258), while the calculated (t) value was (1.802), which is greater than the tabular value of (t) at the degree of freedom (19) and the level of significance (0.05), which is (0.087). This indicates that there are significant differences in favor of the post-test.

Standing on one leg and twisting the torso: the arithmetic mean in the pre-test was (2.9167) with a standard deviation of (0.79296), while the arithmetic mean in the post-test was (3.5833) with a standard deviation of (0.66856), while the calculated (t) value was (1.876).), which is greater than the tabular value of (t) at a degree of freedom (19) and a level of significance (0.05), which is (0.087). This indicates that there are significant differences in favor of the

post-test.

Running around a circle: The arithmetic mean in the pre-test was (18.0500) with a standard deviation of (1.66938), while the arithmetic mean in the post-test was (17.0000) with a standard deviation of (1.02598), while the calculated (t) value was (2.622), which is Greater than the tabular value of (t) at the degree of freedom (19) and the level of significance (0.05), which amounts to (0.017). This indicates that there are significant differences in favor of the post-test.

Presenting and analyzing the results of the differences between the pre and post tests of the most important motor abilities of the experimental group

For the purpose of finding out the significant differences between the pre and post tests of the most important motor abilities of the experimental group, the researcher used the (T.test) test, for corresponding samples, as shown in Table (4):							
Statistical means	Trial before me		Trial before me		Trial before me	Trial before me	significance level
variants	9.0500	1.05006	14.9000	1.16529	statistical	0.000	Statistical
	19.2000	1.23969	15.1500	1.22582	11.284	0.000	Statistical
Torso twisting 20 seconds (flexibility)	2.7500	0.86603	5.5833	0.66856	8.224	0.000	Statistical
Running in the form of the number 8 (compatibility)	17.5000	2.23607	14.5500	1.46808	4.878	0.000	Statistical

Table (4) shows the arithmetic means, standard deviations, and the calculated and tabulated t-value between the pre and post tests for the control group of (20) children.

In the torso twisting test 20 seconds: The arithmetic mean in the pre-test was (9.0500) with a standard deviation of (1.05006), while the arithmetic mean in the post-test was (14.9000) with a standard deviation of (1.16529), while the value of (t) calculated was (13.773), which is greater than the tabular value of (t) at the degree of freedom (19) and the level of significance (0.05), which is (0.000). This indicates that there are significant differences in favor of the post-test.

In the running test in the form of number 8: - The arithmetic mean in the pre-test was (19.2000) with a standard deviation of (1.23969), while the arithmetic mean in the post-test was (15.1500) and with a standard deviation of (1.22582), while the calculated (t) value was (11.284), which is greater than the tabular value of (t) at the degree of freedom (19) and the level of significance (0.05), which is (0.000). This indicates that there are significant differences in favor of the post-test.

Standing on one leg and twisting the torso: the arithmetic mean in the pre-test was (2.7500) with a standard deviation of (0.86603), while the arithmetic mean in the post-test was (5.5833) with a standard deviation of (0.66856),

the calculated (t) value was (8.224).), which is greater than the tabular value of (t) at the degree of freedom (19) and the level of significance (0.05), which is (0.000). This indicates that there are significant differences in favor of the post-test.

Running around a circle: The arithmetic mean in the pre-test was (17.5000) with a standard deviation of (2.23607), while the arithmetic mean in the post-test was (14.5500) with a standard deviation of (1.46808), while the calculated (t) value was (4.878), which is Greater than the tabular value of (t) at the degree of freedom (19) and the level of significance (0.05), which amounts to (0.000). This indicates that there are significant differences in favor of the post-test.

Discussing the results of tests of the most important motor abilities of the control and experimental groups

When discussing the results of the research that were presented and analyzed in the two tables (), (), for the pre and post tests and for the control and experimental groups, significant differences appeared in favor of the post tests for motor abilities (compatibility, agility, flexibility, and balance) of the experimental group, but as for the control group, there were differences Significant and in favor of the dimensional tests of motor abilities (flexibility, agility), and this appears clearly through the arithmetic mean differences of the two tests, and this indicates that children at this stage have flexibility in their bodies because they are in the stage of growth, as well as within the curriculum of Riyadh is the development and development of flexibility, compatibility and agility And balance..etc..but the use of games was not properly organized and their goals were limited.

The researcher attributes the reason for this development to the control and experimental groups with regard to flexibility ability.

As for the control group, the researcher attributes the reason for this development to the fact that children at this stage have flexible bodies due to the abundance of movement, as well as the practice of activity and play, which led to the development of flexibility.

As for the experimental group, the researcher attributes the reason for that development to the games of motor education, because of its effective development of the ability to agree, as the games that include (running, walking, jumping, hopscotching, matching, etc.) and using them in a targeted manner All of this contributed to the development of this ability by the researcher.

With regard to the ability of agility, the researcher attributes the reason for this development to the control and experimental groups, to the fact that the

children of this stage enjoy vitality and activity, so we see them in constant movement and we find that they tend to practice activities that enjoy the continuity of movement, which contributed to the development of agility ability.

As for the control group, the researcher attributes the reason for this development to the kindergarten curriculum containing a group of kinetic games that contributed to providing an opportunity for children to practice activity and play, which led to the development of agility.

As for the experimental group, the researcher attributes the reason for that development to the learning process and the motivation for learning that the children possess. The researcher also attributes the reason for that development in the experimental group to the effect of different games to develop the ability of agility, which indicates the validity of the play-learning strategy developed by the researcher, "The Good Curriculum". For physical education, it includes a broad framework that provides almost all students with the opportunity to learn and participate in various sports, whether individual or group selected.

As for the ability of flexibility, the researcher attributes the reason for that development in the experimental group to the fact that the use of games for kinetic education had a positive impact on its development, in addition to the researcher taking into account when preparing games for kinetic education and taking some important points into account, such as the factor of suspense, excitement and diversification in games as well as Motivation and enhancing success experiences, as well as the performance style, which made the children not feel tired and bored during the performance, but rather they had a strong desire to move and play, and this agrees with (Wajih Mahjoub) when he stated that "we have to observe the daily program drawn according to the abilities and age of the child And it must be drawn on the basis of the general program of the nursery and focus on a diverse program and different styles, and not on one style, provided that the program is to satisfy the imaginary and traditional needs of the child and withdraw all suppression and pent-up negative emotions" (), this is in addition to starting early training for flexibility." The child constantly needs a targeted increase in flexibility exercises, and the increase in exercises that lead to increased flexibility in children gives a much better result. As if the child grows old." ( )

As for the balance ability, the researcher attributes the reason for that development for the experimental group to the children's rapid motor learning ability as a result of the maturity factor and the nature of growth, and this is confirmed by (Shafiq Falah) by saying that "training if it comes at the right time, which is the time when the child is ready in terms of Maturity to benefit and receive was useful and successful and contributed to the motor development of the child" (), and the researcher attributes the reason for that development to the effectiveness of educational units as well as the impact of games that aimed to develop the ability of balance and help children to adapt and develop in this ability, and this indicates that The games developed by the researcher were inclusive of all required motor abilities, which led to their development, while the usual approach followed with the control group focused on some abilities.

And when we discussed the results that were presented and analyzed in the table () for the post-tests of the control and experimental groups for motor ability tests, significant differences appeared in favor of the experimental group, and this means that the use of the learning-by-play strategy has achieved better development than the kindergarten curriculum, and the reason for that development is due to the effectiveness of This strategy, which included in its content games concerned with the development of (running, walking, jumping, ... etc.), and thus the games included in the educational units contributed to the development of these abilities.

By presenting, analyzing and discussing the results of the research, the research objectives and hypotheses set by the researcher were achieved, and the learning strategy by playing has achieved its objectives in developing the most important motor abilities of preschool children at the age of (4-5) years.

We can say that the strategy of learning by playing had a specificity in developing the most important motor abilities, because it contains purposeful games that contributed to satisfying children's desire for movement and activity, through correct motor guidance that led to achieving motor development. With the children's level, age, gender and ability, this was shown through the moral results and the children's desire to practice, as well as a good investment of time that serves the development of the most important motor abilities of pre-school children.

Conclusions and recommendations

Conclusions

In light of the results of the tests, their analysis and discussion, the researcher reached the following conclusions:

1- The use of the learning strategy by playing directly and greatly affected the effectiveness of children's performance, which led to the development of motor abilities, the subject of research.

2- The results achieved by the tests proved the validity of the educational units prepared by the researcher through the clear development in the most important motor abilities.

3- The strategy of learning by playing achieved a better development than the Riyadh curriculum, and thus achieved the goals and objectives that were set for its realization.

4- The researcher found, through statistical indications, that the Riyadh Curriculum applied to the control group contributed to the development of

some motor abilities of that group.
5- The two motor abilities (compatibility and agility) do not receive enough attention during the application of the motor education lesson in kindergarten.

4-2 Recommendations

Based on the conclusions reached by the researcher, she recommends the following:
1- Adopting the strategy of learning by playing in kindergarten, in the period allocated for the motor education lesson, because of its positive impact on developing the most important motor abilities of pre-school children at the age of (4-6) years.
2- It is necessary to reconsider the kindergarten curricula in order to contribute significantly to the development of motor abilities in children.
3- The need to pay attention to the motor abilities of pre-school children, through the development of special curricula for this purpose, in addition to providing arenas and playgrounds for kindergarten children that are compatible with contemporary technical development, to develop the motor ability of children, on the basis that motor abilities are important and necessary because they represent the basis for various Types of sporting events.
4- Interest in appointing specialized (university) educational cadres to work in kindergartens.
supplements
Accessory (1)
Learning strategy program by playing
the first week
Today / Sunday Date / 10/2/2022 Lesson duration / 30 minutes
Game duration / 20 minutes
Overall goal/balance development
Warm up / 5 minutes / walk - jog - some exercise.
The name of the game / load the funnel
Tools / Christmas funnel number 4, tape.
Implementation steps: The tape marks a start line and an end line, the length of this line is 10 cm, the width is 5 cm, and the distance between the start line and the finish line is 8 m. The children are divided into two teams. The teacher puts a funnel on the head of each two children who start the game, then they walk to the finish line and upon reaching Each child must run their own cone and run back to the starting line, then stand at the end of each team.
Relax / 5 minutes / give some exercises to breathe and calm down.
Today / Wednesday Date / 10/5/2022 Lesson duration / 30 minutes
Game duration / 20 minutes
The general objective is to develop walking skills
Warm up / 5 minutes / walk - jog - some exercise.
The name of the game / walking on geometric shapes.
Tools / tape to draw geometric shapes. Draw a hand on the wall.
Implementation steps: Draw three geometric shapes on the ground in sequence (triangle, square, circle), and mark a line with a different color of tape to start and finish with for each of the three shapes. Children stand in the shape of a locomotive 3 meters behind the specified starting line and when the whistle is heard The first child starts walking, and when he reaches the first geometric shape, he walks on the borders of each shape, and when he finishes the geometric shapes, he walks towards the palm of the hand drawn on the wall to touch his palm, and then run back to the starting line.
Relax / 5 minutes / give some exercises to breathe and calm down.

The References

Gardner, H. (1983) "Frames of Mind: the Theory of Multiple Intelligences" New York: Basic Books
Gardner, H, frames of mind ;The theory of multiple intelligence , N ,Y ,Baric Books , 1983 .
Wafaa Turki Al-Ghurairy: Building a test battery for motor intelligence for children aged 4-6 years, research promotion, University of Kufa, College of Education for Girls
Wajih Mahjoub, Kinesiology, Motor Learning, 2nd Edition: (University of Mosul, Dar Al-Kutub for Printing and Publishing, 1989.
Wajih Mahjoub; Scientific research methods and approaches in physical education: (Baghdad, Higher Education Press, 1988
William Obaid and Ezzou Ismail Afana; Thinking and the School Curriculum, 1st Edition: (Kuwait, Dar Al-Falah for Publishing and Distribution, 2003)
Robert v. hockey: physical fitness the path way to helpful living, the c.v. Moby compung ,1981, .