A Proposed Program Based on Motor Play to Develop Flexibility and Balance Abilities for Preschool Children

Hind Adel Ghazi Hussein
Hindadell65@gmail.com

ABSTRACT

This research aims to identify the impact of using the motor play strategy on the development of some basic motor abilities of preschool children, especially the ability **of balance and flexibility**, because of the importance of this age stage in building the motor and physical foundations that contribute to the child's interaction with the environment around him, and pave the way for his later transition to learning sports skills related to various sports games and events. The research problem was identified through the field visits conducted by the researcher to a number of kindergartens, conducting interviews with Riyadh administrations and teachers, reviewing the approved curricula and physical education classes, as well as communicating with parents, where it was noted that the lack of use of targeted motor games that contribute to the development of children's motor abilities was observed. Hence, the need to design a program based on group motor games according to the strategy of motor play, which ensures the proper investment of these games and their educational employment, and to identify their impact on Developing motor abilities as an organized educational procedure.

The researcher adopted the experimental method using the method of two equal groups (control and experimental) with pre- and post-tests. The research population consisted of (Mama Falla Al-Ahliyya) kindergarten children aged (4-6) years in Dhi Qar Governorate, who were (30) children of both sexes, who were divided into two groups.

1. Introducing the research

1-1 Introduction and Importance of the Research:

Childhood has been the focus of attention of educators and educational institutions since the early years, due to its great importance in shaping the child's personality and psychological, mental and motor behavior. This stage forms the cornerstone of the rest of the age stages, as the first years of a child's life represent a fertile period for upbringing and formation, as they have a great impact on his future life, highlighting the importance of education and care during this period, in addition to the child's interaction with the community and the environment around him.

An active child is defined as a child who is always moving and working, as his mind and soul seek to express his needs through his physical activity. The child is considered hidden in his essence, but play is the key to entering his world, as it is the best way to identify his psychological, mental and motor tendencies, and direct them in a way that suits the environment in which he lives, because this has a great impact on his upbringing and the formation of his personal characteristics.

Play is a fun activity, through which the child practices a range of physical movements, and it is the main activity that occupies the child's attention. Play also represents a means of social interaction with peers, an opportunity to learn and develop different patterns of behavior, and allows him to develop mentally and meet his natural tendencies.

From this point of view, the use of interesting educational methods, such as motor play, stimulates children's tendencies and desires, and encourages them to learn through interaction with their peers and with the surrounding environment. The motor aspect is one of the main axes that societies are interested in during childhood, especially motor abilities such as coordination, responsiveness, balance, agility, flexibility, and others, as it represents the basic basis for practicing motor activity in children. The development of these abilities is also a solid foundation for sports skills in the later stages. This contributes to improving the child's performance in various sports games and events in the future.

Due to the reliance of the motor play style on motor abilities and its potential to create an organized environment for learning, the importance of this research came in the use of the motor play strategy to develop the balance and agility abilities of kindergarten children aged (4-6), which contributes to enhancing their interaction with the surrounding environment, and increasing their ability to acquire and develop the basic sports skills necessary for various events and sports

1.2 Research Problem

Play has characteristics that kindergarten houses can benefit from in raising children, building their personalities, and enhancing their mental and motor balance. Play is also of great importance in the child's life, as it allows him to interact with the surrounding environment and communicate with his peers, and it is an essential means of acquiring abilities related to sports activities. Games are characterized by diversity and innovation, but each game has a unique specificity and a specific goal that is suitable for the child's age between (4-6) years.

As for the research problem, it emerged through the field visits made by the researcher to some kindergarten homes, in addition to conducting interviews with Riyadh administrations and teachers, reviewing the general curriculum and physical education classes, as well as communicating with parents. These visits showed that the games used in kindergartens were not sufficiently targeted to develop children's motor abilities and physical abilities.### 1-3 Research Objectives:

1- Identifying the effect of small games according to the strategy of motor play in developing the abilities (balance and flexibility) of Riyadh children.

2- Identifying the differences between the control and experimental groups in the post-tests of Riyadh children.

1-4 Research Hypotheses:
1- There is a positive effect of small games according to the strategy of motor play to develop the motor abilities of Riyadh children.
2- There are statistically significant differences between the control and experimental groups in the post-test and in favor of the experimental group for Riyadh children.

1-5 Research Areas:
1.5.1 Human Field: Children of Mama Falla Kindergarten, located in the center of Dhi Qar Governorate, aged between (4-6) years.

1-5-2 Temporal Domain: For the period from (2/4/2024) to (14/9/2024).

1-5-3 Spatial Field: The playground and games hall in Mama Falla Al-Ahliyya Kindergarten in the center of Dhi Qar Governorate.

2- Research methodology and field procedures:
2-1 Research Methodology:
The method is defined as the path taken by the researcher to achieve his goals, based on a set of rules and foundations, the most prominent of which is the study of the nature of the problem under research, which obliges the researcher to choose the most appropriate method to reveal the facts presented. [1]

Accordingly, the researcher adopted the experimental method using two equal groups: control and experimental, with pre- and post-tests being conducted, due to the high suitability of this method for the current research procedures. The experimental method is the most capable scientific method for analyzing causal relationships, as it does not only describe the situation or determine the case under study, but also allows the control of independent factors and determining their effect on the dependent factors, within precise conditions and controls to ensure the validity of the results.

2-2 Research Population and Sample:

221 Research Population :

"One of the things that is taken into account in scientific research is the research sample, as it is the part that represents the community of origin on which the researcher is conducting his work"[2], so the sample is the main focus of the work.

Therefore, the research population represented by kindergartens for the ages of (4-6) years in Dhi Qar Governorate, which is (30) male and female children, was identified.

(1) Muhammad Hassan Allawi and Osama Kamel Rateb. <u>Scientific Research in Physical Education and Sport Psychology</u> , Cairo: Dar Al-Fikr Al-Arabi, 1999, p. 232.

Ahmed Badr, **Origins and Methods of Scientific Research**: (Kuwait, Publications [2] Agency, 1988), p. 324.

222 Research Samples:

The research sample was determined by the method of comprehensive inventory of the children of Mama Falla kindergarten , which are (30) male and female children for the academic year (2024-2025) deliberately.

2-6   Sample homogeneity and parity of the two research groups:
261 Sample homogeneity :

Before starting the implementation of the tests, and to ensure the control of variables that may affect the accuracy of the research results, the researcher verified the **homogeneity of the research sample** with regard to morphological variables, namely: height, weight, and age, as shown in the following table:

Table (1)

Shows the variables (height - weight) and the coefficient of difference

Divergence coefficient	+S	Going to	Unit of Measurement	Statistical Milestones Variables
4.66	5.32	114.12	Poison	**Length**
9.41	2.11	22.41	kg	**Weight**

The table shows (1The values of the coefficient of difference are less than (30), which indicates the homogeneity of the members of the research sample in these variables.

2.6.2 The parity 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 the experimental variable that affects the experimental group without the control, and accordingly, the parity between the two research groups was made in the pre-tests of the tests My balance and flexibility For children of the age of (46) years and there were no significant differences between them, which confirms the parity and the table (2) illustrates this.

Significance Level	SIG Grade	Calculated value (t)	Control Group		Experimental Group		Statistical Methods
			on	Going to	on	Going to	Variables
Insignificant	0.562	0.571	1.16416	8.3400	2.04006	8.0300	Stem twisting 20 s
Insignificant	0.644	0.492	1.25296	3.3367	1.11603	3.2200	Stand on one leg twisting the torso

23 Research Methods and Tools Used:

2.3.1 Research Methods: The researcher shall use the following research methods:

1- Arab and foreign references and sources.

2- Questionnaire of the opinions of experts and specialists on determining the validity [of *]

:

* Motor abilities tests.

*Personal interview [**].

2.3.2 Devices and tools used:

1- Medical scale.

2- Lenovo Type 3 Laptop 1.

3- Stopwatch.

4- Casioo camera 1.

5- Flexible textile measuring tape to measure lengths and distances.

6- 1 whistle.

7- Balls of various sizes and colors.

8- Colored adhesive tapes.

9- Indicators number 10.

10- 10 collars.

11- Empty carton box of 2.

12- Small chairs of 4

13- Colored artificial sand.

14. 10 balloons.

15- 2 wooden sticks.

16- Data Registration Form.

–   **Motor Abilities Tests :**

Test Name:

Test the twisting of the trunk on the right and left sides on the sign on the wall with your hands within 20 seconds.

–   Purpose of the test:

Measurement of spinal elasticity:

–   Tools Used:

Whistle, hour.

–   Performance Description:

A clear ((X) sign is drawn on the wall.

The tester stands against the wall with his back facing the drawn mark.

When the start signal ("whistle") is heard, the testator twists the trunk to the right and left sides while trying to touch the signE withthe hands.

A member of the assistant team stabilizes the lab feet to prevent the legs from rotating while performing spinning motion.

The distance E between the laboratory and the wall shall be determined to be equivalent to the width of the laboratory shoulders.

–   Calculating Grades:

The lab's score is calculated by the number of times the mark is touched within a time of (20) seconds.

- – Test Name: Standing on one leg, extending the arms to the side, and twisting the torso to the right and left for 15 seconds* .
  Purpose of the test: Measure the motor balance of the body.
  Tools: Whistle, stopwatch.
- - Performance Description:
- - The tester stands on one leg with the arms extended to the sides and when the start signal is heard (the sound of the whistle), the testator twists the trunk to the right and left.
  Calculation of Grades:
  Successful attempts represented by twisting the torso to the sides (15) seconds and failing attempts to twist the torso to the sides with the free foot touching the ground or a little twist of the trunk are counted as not counted, which is estimated by the arbitrator, knowing that each right and left twist is considered one attempt.

2-4 Kinetic play:

2.4.1 Foundations of Preparation and Design of Motor Toys:

The most important foundations that the researcher believes should be taken into account when designing kinetic games for children are:

1- Consideration of motor play for children's physical and motor abilities.
2- Ensuring safety and security standards when performing games.
3- It contains elements of suspense and excitement.
4- The gradation in the level of motor performance contained in the motor duties of each kinesthetic game.
5- Preparing joint group motor games combined with basic motor skills and motor abilities.
6- Focusing on developing the spirit of cooperation, community and social interaction.

2.5 Prerequisites:

The researcher conducted pre-tests For my ability (balance and flexibility) In my day Sunday and Monday, and for both the control and experimental groups respectively, and at nine o'clock in the morning, the researcher also conducted the pre-tests ، The conditions related to the tests, such as the place, time, method of implementing the tests, and the auxiliary work team, were fixed.

2-6 Program Implementation :

 After the preparation and design of a program of motor play, which is used to develop motor abilities, the vocabulary of this program was presented to a number of experts and specialists in the field of physical education, teaching methods and kindergarten education for the purpose of ascertaining the validity of the motor play used in the program, as they expressed some directives and opinions, and the amendment was made according to the recommendations and opinions that were put forward, and the experts unanimously agreed on the validity of all the paragraphs of the program in terms of the safety of the formulation of games, and their coverage of the goals of the program. All of them, and their suitability to the sample level. The application of the games program to the children of the experimental group began by the kindergarten teacher and under the supervision of the

---

* Ra'id 'Abd al-Amir, op. cit., p. 214.

researcher, as the program included (16) educational units over a period of (8) weeks, two educational units per week, the duration of the educational unit (30) minutes. The researcher adopted two games aimed at motor abilities every week, while the control group continued to implement the method and games followed in the kindergarten according to the curriculum of the experience unit 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.

2-8 Post-Tests:

The post-tests were performed on the sample members in the same way as the pre-tests, as the motor abilities tests were performed on the members of the control and experimental group on Sunday and Monday coinciding with nine o'clock in the morning, taking into account that the conditions of the post-test are the same as the conditions of the pre-test.

2-9 Statistical Methods:

The researcher usedSPSS software version 20 to process the data statistically.

3- Presentation, analysis and discussion of the results:

This section includes presenting, analyzing and discussing the results, according to the data obtained, after the completion of the application of the experimental method using the motor play strategy to develop some motor abilities of Riyadh children aged (4-6) years.

After emptying the data obtained by the researcher, and to verify the validity of the research hypotheses, the data were analyzed statistically using the appropriate statistical means "as they are considered an explanatory tool for the research, and because they reduce the chances of error in the later stages of the research, and because they strengthen the scientific evidence and give it strength." [3]

"Analyzing information means extracting quantitative and qualitative scientific evidence and indicators that prove the answer to questions and confirm the acceptance or disapproval of his hypotheses." [4] .

In order to know the results of some motor abilities tests and in the light of the statistical data obtained by the research results after conducting the pre- and post-tests of the research sample, the results were organized, analyzed and discussed in the following order:

3.1.3 Presentation and analysis of the results of the differences between the pre- and post-tests of the most important motor abilities of the control group:

- Rudy Shtemler, <u>Methods of Statistics in Physical Education</u> , translated by: Abd Ali [3] Nassif and Mahmoud Al-Samarrai, (Baghdad, Dar Al-Hurriya Printing, 1974), p. 35.

- Saleh Hamad Al-Assaf, Introduction to Research in Behavioral Sciences : (Riyadh, Obeikan Library, 1995), p. 11 . [4]

For the purpose of knowing the significance of the differences between the pre- and post-tests of the most important motor abilities of the control group, the researcher used the test (T.test), for symmetrical samples and as shown in Table (3):-

Significance Level	SIG Grade	Calculated value (t)	Go away		Before me		Statistical Methods Variables
			on	Going to	on	Going to	
Moral	0.32	2.319	0.79472	10.0000	1.16416	9.2500	**Stem Twist 20 S (Flexibility)**
Insignificant	0.087	1.876	0.66856	3.5833	0.79296	2.9167	**Standing on one leg twisting the torso (balance)**

Table (3) shows the arithmetic mediansE, standard deviationsE, and the calculated and tabular values of (t) for the differences between the pre- and post-tests, which amounted to (20) children, and the results resulted in the following:

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

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

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

Running around a circle test:
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). The calculated value of (t) was (2.622), which is greater than the tabular value of (t) at the degree of freedom (19) and the significance level of (0.05) which is (0.017), which indicates that there are statistically significant differences in favor of the post-test.

 3-1-3 Presentation and analysis of the results of the differences of the pre- and post-tests of the most important motor abilitiesof the experimental group:

For the purpose of knowing the significance of the differences between the pre- and post-tests of the most important motor abilities of theExperimental , the researcher used the test (T.test), for symmetrical samples and as shown in Table (4) :

Significance Level	SIG Grade	Calculated value (t)	After me experimental		Tribal Experimental		Statistical Methods
			on	Going to	on	Going to	Variables
Moral	0.000	13.773	1.16529	14.9000	1.05006	9.0500	**Stem Twist 20 S (Flexibility)**
Moral	0.000	8.224	0.66856	5.5833	0.86603	2.7500	**Standing or one leg balance)**

Table (4) shows the arithmetic media, standard deviations, calculated and tabulated (t) values for the differences between the pre- and post-tests of the experimental group, which consisted of (20) children, and the results were as follows:

Stem Wicking Test (20 seconds):

The mean value in the pre-test was (9.0500) with a standard deviation of (1.05006), while the arithmetic mean in the post-test increased to (14.9000) with a standard deviation of (1.16529). The calculated value of (t) was (13.773), which is greater than the value of (t) at the degree of freedom (19) and the significance level of (0.05) which is (0.000), which indicates that there are statistically significant differences.

Running test in the form of (8):

The mean value of the pre-test was (19.2000) with a standard deviation of (1.23969), while the mean of the post-test was (15.1500) with a standard deviation of (1.22582). The calculated value of (t) was (11.284), which is greater than the tabular at the significance level of (0.05), which indicates that there are significant differences in favor of the post-test.

Stand test on one leg with torso wicking:

The mean of the pre-test was (2.7500) with a standard deviation of (0.86603), while the mean in the post-test was (5.5833) with a standard deviation of (0.66856). The calculated value of (t) was (8.224), which is greater than the tabular value at the significance level of (0.05), which indicates that there are significant differences in favor of the post-test.

Running around a circle test:

The mean in the pre-test was (17.5000) with a standard deviation of (2.23607), while the mean in the post-test was (14.5500) with a standard deviation of (1.46808). The calculated value of (t) was (4.878), which is greater than the tabular value at the significance level of (0.05), which indicates that there are statistically significant differences in favor of the post-test.

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

The results of the research, as stated in the tables of the pre- and post-tests of the control and experimental groups, showed that there were statistically significant differences in favor of the post-tests in the motor abilities (compatibility, agility, flexibility, and balance) in the experimental group, while the significant differences in the control group were limited to some motor abilities, especially flexibility and agility.

This improvement in children is due to the nature of the age in which children are physically flexible as a result of their development, in addition to the fact that the kindergarten curriculum includes activities aimed at developing various motor abilities,

but these activities in the control group were not carried out according to a clear systematic organization and their objectives were limited.

The researcher attributes the development in the flexibility of the control group to the children's frequent movement and their continuous practice of activity and play, which contributed to the development of this ability naturally.

The remarkable development of the experimental group is due to the use of kinesthetic education games, due to their effectiveness in developing adaptive abilities, through activities that include running, walking, jumping, partridge, and others, which were implemented in a targeted and organized manner.

With regard to the ability to be agile, the researcher attributes this development in both groups to the activity, vitality and constant movement of the children of this stage, as well as their tendency to engage in activities characterized by motor continuity. The kindergarten curriculum in the control group also contributed to providing appropriate opportunities for practicing kinesthetic play, which led to the development of this ability. In the experimental group, the development in agility was attributed to the high motivation to learn in children, as well as the positive effect of the various motor games adopted by the researcher, which confirms the effectiveness of the motor play strategy used.

In terms of flexibility, the clear improvement in the experimental group is attributed to the systematic use of kinesthetic education games, taking into account factors of suspense, excitement, variety, motivation, and enhancing success experiences, as well as the appropriate performance style, which made the children perform activities enthusiastically without feeling tired or bored, which is in line with the opinions of a number of researchers on the need to plan motor programs in accordance with the child's age characteristics and physical abilities.

As for balance, the researcher attributes the reason for the development of the experimental set to the high susceptibility of children to motor learning as a result of the maturity factor and the nature of growth, which Shafiq Falah confirmed by saying: "If the training comes at the right time, which is the time when the child is maturously ready to benefit and receive, it is useful and successful and contributed to the child's motor development.

The researcher also attributes this development to the effectiveness of the educational modules, in addition to the effect of games that are specifically designed to develop the ability of balance and help children adapt and grow in this ability. The results indicate that the games prepared by the researcher included all the required motor abilities, which led to their comprehensive development, while the traditional approach applied to the control group focused on the development of only some abilities.

When discussing the dimensional results of the control and experimental groups of motor abilities tests, it was found that there were clear significant differences in favor of the experimental group, which indicates that the use of the motor play strategy led to a better development compared to the traditional curriculum for kindergarten children, and the reason for this development is due to the effectiveness of the program, which includes various games that are concerned with the development of running, walking, jumping and other skills, which directly contributed to the development of children's motor abilities.

Through the presentation, analysis and discussion of the results of the research, it was found that the two objectives of the research and its hypotheses developed by the researcher were achieved, as the results showed that the motor play strategy has achieved its objectives in developing the most important motor abilities in preschool children at the age of (4).6) years.

It can also be concluded that the strategy of motor play has a clear specificity in the development of basic motor abilities, because it includes purposeful games that

contributed to satisfying the children's need for movement, through proper guidance, which led to a tangible motor development. In light of the results obtained, it was found that the application of the educational units was compatible with the children's level, age and physical characteristics, and their abilities, which was reflected in the appearance of positive moral differences, in addition to increasing the children's motivation and desire to practice. In addition, A good investment of time contributed to the development of the most important motor abilities of preschool children.

4- Conclusions and recommendations:

4-1 Conclusions:

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

1. The motor play strategy has directly and significantly affected the effectiveness of children's performance, which has contributed to the development of the motor abilities targeted in the research.
2. The results of the tests confirmed the effectiveness of the educational modules prepared by the researcher, as they contributed significantly to the development of the most important motor abilities in children.
3. It was found that the kinetic play strategy achieved better progress compared to the Riyadh curriculum, which contributed to achieving the desired goals and objectives.

4-2 Recommendations:

Based on the researcher's conclusions recommends It comes :-

1- The researcher emphasizes the importance of applying the motor play strategy in kindergartens during the motor education class, as it has an effective effect on enhancing and developing basic motor abilities in preschool children aged (4-6) years.

2- Highlighting the importance of reviewing the kindergarten curricula to ensure the effective promotion of children's motor abilities.

3- The need to pay attention to children's motor abilities by developing specially codified curricula for this purpose, and providing appropriate squares and playgrounds for contemporary technological development, considering that motor abilities form the basis for various sports events.

4- Ensuring the appointment of specialized university educational cadres to work in kindergartens to support the educational and educational process professionally.

Sources

- Mohamed Hassan Allawi and Osama Kamel Rateb. <u>Scientific Research in Physical Education and Sport Psychology</u>, Cairo: Dar Al-Fikr Al-Arabi, 1999.
- Ahmed Badr, <u>Origins and Methods of Scientific Research</u>: (Kuwait, Publications Agency, 1988)
- Rudy Shtemler, <u>Methods of Statistics in Physical Education</u> , translated by: Abd Ali Nassif and Mahmoud Al-Samarrai: (Baghdad: Dar Al-Hurriya Printing, 1974).
- Saleh Hamad Al-Assaf: Introduction to Research in Behavioral Sciences: (Riyadh, Obeikan Library, 1995)

Appendices

Attachment (1)

Kinetic Play Strategy Program

First week

 Day / Sunday   Lesson Duration / 30 minutes

Game Duration / 20 minutes

Overall Goal/Balance Development

Warm-up / 5 minutes / Walking - Jogging - Some exercise.

Game Name / Funnel Load

Tools/Christmas Funnel 4 Number, Bar.

Implementation Steps / In the tape, the starting line and the end line are determined, the length of this line is 10 cm and the width of 5 cm and the distance between the starting line and the finish line is 8 m, the children are divided into two teams, the teacher puts the funnel on the head of each two children who start the game and then walk to the finish line and when they arrive each child obliges his funnel and returns running to the starting line and then stands at the end of each team.

Relax / 5 minutes / Give some exercises to breathe and calm down.

Today/Wednesday Lesson Duration/ 30 minutes

Game Duration / 20 minutes

General Objective/Developing the Skill of Walking

Warm-up / 5 minutes / walking - jogging - some exercise.

Name of the game / Walk on geometric shapes.

Tools/bar for drawing geometric shapes. Draw a palm on the wall.

Steps of Implementation / Drawing three geometric shapes in the ground in sequence (triangle, square, circle), and determining a line with a different color to start and end with for each of the three shapes, the children stand in the shape of a locomotive at a distance of 3 meters behind the specified starting line, and when the whistle is heard, the first child begins to walk, and when reaching the first geometric shape, he walks on the borders of each shape, and when the geometric shapes are finished, he walks towards the palm of the hand drawn on the The wall to touch his palm and then return to the starting line.

Relaxation / 5 minutes / Give some exercises to breathe and calm down.