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The Effect of Suggested Exercises on Developing Some Mental Abilities for Children Aged 4-6 Years

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Abstract

The purpose of the current article lies in determining the impact of the suggestive exercises on the development of the mental capabilities of children. The researchers used the experimental method with a single-group design, which was appropriate for the core of the current article. The study shamble has been specified as children aged 4-6 years in Umm Al-Rabi'een Kindergarten, with a total of 95 children. The study samble (15 children) was randomly selected. . After the exercises were completed, the post-tests have been carried out on the sample with similar circumstances as that of pre-tests. Researchers used statistical methods in the SPSS program. After the results were presented, analyzed, and discussed, The researchers concluded that the exercises conducted for the children had a positive effect on how to use and improve the children's mental abilities.

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1. Research Introduction

1.1 Introduction and Importance of the Research

Physical and sports education is a science that, like all other Sciences, has developed so that it has become an effective tool for achieving the goals a healthy society and to export people who are capable of development, it is no longer a set of motor skills, but a consensual and adaptive process for the demarcation (Awad F, 2007) Education is the interaction of the individual and his social environment for the purpose of achieving compatibility or adaptation between person and the values and trends imposed by the environment depending on the degree of material and spiritual development in it, and that the nominal goal of education is to help the human personality to safely develop emotionally and socially safely(Obaid, 2021) Pauline Kergmerd was able to reveal the principles of physical education for children and said: the physical development of a child requires air, light, sun, hygiene and good movement that increases blood circulation and games that strengthen and affect the muscles, since during this time the mental and emotional construction establishing. Also, this stage is the starting point in the general social life through which the child begins to The verbal world, where this responsibility sign on the family first and government institutions second(Ahmed & Seddighi, 2019) As developing mental abilities at this stage is an urgent necessity for children to practice motor activities in which the child expresses his creativity and innovations(Jasem et al., 2023) The importance of research lies in developing some mental abilities at the ages of (4-6) years(ABASS & FADHEL JAMEEL, 2020) (Ali et al., 2023)

As a whole, development refers to the qualitative changes that occur in an children as a whole. A continuous development process takes place when physical, emotional, and intellectual changes are brought about to an individual(Mohsen et al., 2024) It is important to understand that emotional development and mental development are two sides of the same coin(Ahmed & Seddighi, 2019) The effect of exercise on mental abilities includes improving memory and creative skills, in addition to increasing the ability to concentrate. Also, practicing sports in general represents an investment in a healthy life, as it contributes to achieving a balance between body and mind, which leads to improving the quality of life in general.(Othman et al., 2023)

during the researchers' observation of children and reading sources and literature in the field of motor learning, the researchers found that developing some of the mental abilities of children contributes to the children not falling into problems related to the actions they do in their social lives. Also, developing some mental abilities will They have a positive impact on social life and

children will be integrated with their peers, so the researchers decided to use suggested exercises that develop some of the mental abilities of children at this stage.

Materials and Methods

subjects was identified as 95 children aged 4-6 years in Umm Al-Rabeain Kindergarten. The research sample (15 children) was chosen randomly and after (5) children have been excepted for the exploratory experiment. The sample number turned out (10 children), so the researcher specified the sample percentage of the society (10.52).

Equipment employed in the current study :

- "computer ،"Data Show"،"Display screen"،"DVD device" ،International Information Network (Internet ،)Arabic references ،Former studies and research ،Tests ،Data gathering and writings- free forms ،Statistic means ،Interior hall ,15cubes for the laboratory ،A bridge model consisting of 9 cubes ،Timing hours ،Chair ،Balls of different sizes ،number 20 ، Whistle ،Chalk.

Through the researcher's access to Arab and foreign origin and the assistance of those having experience and specialization in the domain of motor learning, the researcher identified the most important mental abilities and their tests in the field of motor learning (focus, memory, and discrimination).

Description of tests:

The first test: "distinguishing and coordinating sizes"(Khalifa & Obaid, 2024)

Purpose of the test: To measure the size discrimination and consistency of balls of different sizes within a minute

Necessary tools:

- Balls of different sizes, 20 balls
- Whistle
- Stopwatch
- Chalk

Procedures: The child stands on the starting line and after hearing the whistle, he collects the largest number of balls of the size within minute .

Scoring method: The largest number of balls in a minute is recorded

(Second test) Cube installation test (Khalifa & Obaid, 2024)

- Test objective: To measure concentration and memory

- Used equipment:

1. 15 cubes for the laboratory
2. Bridge model consisting of 9 cubes.
3. Stopwatch
4. Chair
5. Desk

Performance method: The model is placed on a table in front of the laboratory, and the laboratory installs a bridge identical to the model in front of him, he was sitting in a comfortable position.

Recording method: The trainer records the time the laboratory took to install the model.

The probing experiment.

The researcher carried out an exploration experimentation dated 5/07/2023 (Wednesday) on the authentic study study samble with (5) children. The goal of carrying out the exploration experimentation lied in knowing the validity of the tools, to identify the extent and understanding of the sample individuals of the vocabulary and tests, and to identify the extent to which adapting tests to sample individuals and the hindrances confronting the researcher when carrying out his essential experiment and clarifying the sample- related study 's objective.

Scientific bases of tests.

Authenticity of tests*:* A valid test is scaling with a huge accuracy the phenomenon it was designated to scale and not scaling anything else save that . The researcher used content authenticity to extract the validity of the tests by submitting them to a group of highly experienced individuals and specialists and they indicated authenticity and validity of the tests.

Reliability of tests: Reliability of the test giving similar outcomes when the test is re-occurred on the negation of persons under the similar conditions . The means of retesting was used to locate the stability coefficient and a time difference of one week, where the tests have been employed on the sample of the exploration experimentation and then conducted more than once . With the time difference of a week dated 12/7/2023, which coincides with (Wednesday), as shown in Table No 1.

Table 1. Shows test parameters

Test	Stability R	Honesty R	Error level
Distinguishing and	**0.872**	**0.933**	**0.002**

coordinating sizes			
Installing cubes	**0.948**	**0.973**	**0.001**

*At a level of freedom (9) and a significance level (0.05)

The method of handing over the suggested exercises to the children and authentic information after each recurrence by the assisting team is supervised by the researcher .

Field Measures i:

Pretests:

When the exploratory experimentation has been completed , the assistant team supervised by the researchers, carried out pretests on (Friday) corresponding to (14/07/2023) on the chosen subjects.

The core experiment

The assisting team carried out the suggested exercises supervised by the researchers to the current study sample individuals dated (Sunday, 16/07/2023) (from the essential section of the educational unit, with two educational units p/w for a period of 5 weeks. Based on the sports activity of the chosen sample, the suggestive exercises have been started to be used for the research sample, and the duration to apply the exercises lasted for 5 weeks, at the rate of two educational units per week, and work was done as follows:

1. From educational unit No. (1-4) coordination and coordination of sizes.
2. From Educational Unit No. (5-8) Installing cubes
3. From Educational Unit No. (9-10) a joint problem between coordinating and coordinating sizes and installing cubes The exercises were completed on 19August, 2023 (Saturday).

Post-tests

Posttests have been carried out on the current study sample members dated Sunday, twentieth of August ,two thousand Twenty Three with similar circumstances as that in Pretests

Statistical methods: The researcher used statistical methods in the SPSS program, and the following laws were used

1. Arithmetic mean
2. The mediator
3. Standard deviation
4. (t) test

5. The rate of development

Results

Analyzing the results of current study sample members in the pretests and posttests of the research sample for testing composition and cubes analysis and discuss it.

Table 2. Shows results of the mean ," the standard deviations", calculated (t) value, the difference of the means, the deviations, significance, error's percentage , freedom's degree, and percentage of development for the research sample to test the composition of the cubes.

Statistical features	Pretest AM ±SD	Posttest AM ±SD	Accounted T -value	F AM	F ±SD	sig	Rate of development
Sample of the research	5.12 0.83	6.25 1.83	-2.34	1.13	0.55	0.05	22.07

*At level of freedom (9) and a sig (0.05)

From Table two , it is evident the arithmetic mean to the pretest has been (5.12) with standard deviation (0.83), while the arithmetic mean for the posttest has been (6.25) with standard deviation of (183), and the calculated (t) value has been (2.34). The variance of means has been (1.13), the variance of standard deviations has been (0.35), rate of error has been (0.05), and the rate of development has been (22.0) at a level of freedom (9) and a degree of significance (0.05), which shows that there are essential variances between the pretest and the posttest for benefit of posttest.

Table 3. It shows the results of the arithmetic means, standard deviations, T−calculated value, difference of means, deviations, significance, error 's percentage, degree of freedom, as well as development's percentage for the current study's sample to test the discrimination and consistency of sizes.

Statistical features	Pretest AM ±SD	Posttest AM ±SD	Accounted T -value	F AM	F ±SD	sig	Rate of development
Sample of the research	5.25 0.88	5.75 0.88	-2.34	1.13	0.55	0.05	22.07

***At level of freedom (9) and error probability (sig) (0.05)**

From Table three , it is evident that the arithmetic mean for the pretest reached (5.25) with a standard deviation of (0.88), while the arithmetic mean for the posttest reached (5.75) with a standard deviation of (0.88). The calculated (t) value is (-1.87) and The variance of means reached (0.5), the variance of standard deviations reached (0), the error's percentage has been (0.10), and the percentage of development reached (9.52) at a level of freedom (9) and a degree of significance (0.05), which shows that there are essential variances (differences) between the pretest and the posttest for benefit of the posttest.

Discussion

The outcomes have been submitted in Table (2) and (3) between the pretest and posttest for the selected ability tests for benefit of the posttest. The researcher gave reasons of progress lying in the chosen exercises used by the researcher that had an impact.

The good thing about developing the mental abilities of the research subjects is that the educational means of the teaching process is to urgently have there a progress in learning process as long as the teacher or trainer adheres steps of the explicit basses of learning and teaching process(Fadil & Mohammed, 2022) The researcher concluded that the members of the research subjects have performed these abilities well because they have acquired neuromuscular compatibility. Through their repeated practice, which played a major role in achieving the correct performance of the skill with consistency,(Hamad et al., 2024) harmony, and control, and without stiffness or tension, Researchers in the development of mental abilities in children attribute the use of the suggested exercises to the lack of distraction and inattention, and they have the ability to focus, distinguish, and remember better. (Othman, 2022)Mona Fayyadh says that early entry into school develops all the child's talents, such as observation, attention, intelligence, feeling, and reasoning. This development is achieved through various games, and it is necessary to give each child the opportunity to develop all his abilities at this stage (Setar Mohammed et al., 2023) (Othman et al., 2024)

Conclusions

1. The proposed exercises contributed to developing children's mental abilities (discrimination - concentration – memory) and their level.
2. The research subjects excelled in all of their tests, from the post-test to the pre-test.

Recommendations

1. Carry out similar studies on samples at variant age levels and with variant games.
2. The need to focus on mental abilities of children and different age stages.

Thanks and appreciation

We would like to thank the research sample, which is children aged 4-6 years.

Conflict of Interest

The authors declare that there is no conflict of interest.

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Appendices

Appendix 1.

A sample of an educational unit

The first educational unit

educational aim: Develop memory – and concentration

Time: (120) minutes Date : 16-07-2023

Components of the educational unit	Time	Content	Repetition
Main department	120m	1. Remember me game Objective : 1. That the child acquires a new linguistic vocabulary. 2. To develop the child's ability to remember Tools (pen - ruler - cup - plate – spoon) How to present the activity The researcher shows the children three objects on the table in front of them, arranged in a specific order, then asks the children to look at them for a moment and then close their eyes. Meanwhile, she hides an object behind her back and then asks the children to open their eyes and mentioned the name of the thing you hid. 2. Who am I game ? Objective 1. The child gets to know some new words. 2. Listen to the explanation of the game Tools Pictures of some objects on it, for example (pen - book – scissors) How to present the activity Three things are displayed in front of the child, for example (a pen - a book - scissors and a spoon), then we say to the children (I draw with it, write the answer with it, and scribble the paper with it, and the children must say the correct name of the thing).	6