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**Research Paper**

# The Effect of Free Play on The Development of Motor Skills in Children

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**ABSTRACT**

This study aims to examine the effect of unguided free play on the development of basic motor skills in preschool children. This was achieved by comparing the results of a group of children participating in a free play program with a guided play group and a control group. The study used a quasi-experimental approach, and the sample included 150 children, both boys and girls, aged 4–6 years, who were randomly assigned to three equal groups. The two experimental groups underwent a ten-week intervention program, with two sessions per week for each group, while the control group continued with the usual educational program without motor intervention. The MABC-2 and TGMD-2 tests were used to measure motor performance in gross and fine skills before and after the program was implemented. The results showed statistically significant differences between the pre- and post-measurements in favor of the post-measurement in the two experimental groups, with free play outperforming gross motor skills, while the guided play group outperformed fine motor skills. No statistically significant differences were recorded between males and females in response to the intervention. The study concluded that free play is an effective tool for promoting gross motor development in children. It also emphasized the importance of combining free and guided play within educational settings. The study recommends integrating free play into daily activities in early childhood, creating supportive and safe environments for its practice, and providing educators and teachers with appropriate training to employ it effectively.

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## 1. INTRODUCTION

Motor skills are an essential component of a child's development during early childhood, contributing to the building of the physical, cognitive, and social capabilities necessary for interaction with the surrounding environment. These skills include both gross motor skills (such as running, jumping, and balancing) and fine motor skills (such as grasping, drawing, and writing), which are the cornerstones of subsequent learning and active participation in daily and educational activities.

Among the effective means of developing these skills, "free play" stands out as one of the most natural and effective methods. Free play is defined as spontaneous, unguided motor activity that stems from a child's internal motivations without direct adult intervention or the imposition of strict rules. This type of play is characterized by its flexibility and the variety of activities it includes, such as climbing, running, jumping, or even building models with simple tools. This gives children the

opportunity to discover and develop their motor skills gradually and safely. Numerous recent studies indicate the profound positive impact of free play on improving neuromuscular coordination, increasing balance and postural control, and expanding the functional range of movement in children. Pellegrini and Smith (2005) indicated that children who participate in outdoor free play activities show significant improvements in overall motor performance compared to their peers who participate in guided or restricted activities.[1] The American Academy of Pediatrics (Ginsburg, 2007) also stated that free play enhances children's physical, emotional, and social development and is considered a developmental necessity, not a luxury.[2] Despite the growing recognition of the importance of free play, there remains a knowledge gap regarding accurately measuring its impact on the development of fundamental motor skills, especially when compared to structured programs or the complete absence of motor intervention. Based on this, this study aims to evaluate the impact of an unguided free play program on the development of motor skills in preschool-aged children, and to compare its results with those of guided play and a control group, using standardized assessment tools before and after the program's implementation.

This study seeks to provide a real scientific contribution to understanding the relationship between the type of motor activity and motor skill development, and to provide practical recommendations that can be implemented in educational curricula and health programs for children.

**Research Problem**

The first years of a child's life are a critical stage in shaping and developing basic motor skills, given their essential role in supporting healthy physical growth, enhancing neural integration, and developing cognitive and social functions. In this context, play—especially free, undirected play—is considered one of the most important activities, providing children with rich opportunities to explore their environment and develop their motor potential through spontaneous interaction and self-experimentation, without restrictions or direct guidance from adults.

Despite the growing recognition in global educational and health literature of the importance of free play, experimental studies examining its direct and comparative impact on motor skill development remain limited, particularly in the Arab world, where kindergarten programs often focus on guided or formal educational activities. This approach may restrict children's freedom of motor expression and undermine their ability to develop motor skills naturally and gradually. Furthermore, some traditional educational practices still undervalue play, viewing it as a recreational activity with no tangible developmental dimensions.

In light of this, the research problem is defined by the following main question:

- To what extent does unguided free play affect the development of basic motor skills in preschool children, compared to guided play without organized motor intervention?
- This question leads to several research questions, the most prominent of which are:
  - Does free play contribute to a tangible improvement in children's performance in gross motor skills (such as balance, running, jumping, and throwing)?
  - What are the differences in motor performance outcomes between children participating in free play and their peers in guided play?
  - Are there statistically significant differences in children's responses to the free play program due to variables such as gender or age?

The importance of addressing this problem stems from the need to build a scientific knowledge base that contributes to the development of educational policies and practices related to early childhood, supporting the integration of children's motor development and enhancing the effectiveness of related educational and health programs.

## 2. RESEARCH OBJECTIVES

1. Measuring the effectiveness of free play in developing gross motor skills such as balance, running, jumping, and throwing in children aged 4 to 6 years.
2. Comparing the effect of free and guided play on improving basic motor skills using standardized assessment tools applied before and after the intervention program.
3. Analyzing gender differences (males and females) in the extent to which the free play program improved motor performance.
4. Examining the differences between the experimental and control groups in the level of change in gross motor performance after the completion of the training program.
5. Formulating practical recommendations that can be implemented in educational institutions and kindergartens, contributing to promoting the integration of free play as a component of the daily educational environment.

**Research Hypotheses**

1. There are statistically significant differences at the level ($\alpha \leq 0.05$) between the mean scores of children in the group that underwent the free play program, in the pre- and post-tests, in favor of the post-test.
2. There are statistically significant differences between the mean scores of children in the three groups (free play, guided play, and control group) in post-motor performance, in favor of the free and guided play groups compared to the control group.
3. Children in the guided play group demonstrated higher motor performance in fine motor skills compared to the free play group, while the free play group achieved greater improvement in gross motor skills.

There are no statistically significant differences between males and females within the free play group in the level of motor improvement after implementing the program.

## 3. RESEARCH METHODOLOGY AND FIELD PROCEDURES

**First: Research Methodology**

This study adopted a quasi-experimental approach, using a design based on three groups (first experimental group, second experimental group, and control group). Pre- and post-tests were used to measure the impact of the intervention program on basic motor skills. This approach was chosen because it is appropriate for the nature of the study, which aims to evaluate the effectiveness of free play compared to guided play and no intervention.

**Second: Research Sample**

**Number of Participants:** The sample comprised 150 children.
**Age Group:** The ages of participating children ranged from (4–6) years.
**Sample Selection Method:** The sample was selected using a simple random sampling method from several kindergartens located in urban areas with similar environmental and social characteristics.

**Sample Distribution into Groups**

**First Experimental Group (Free Play):** 50 children.
**Second Experimental Group (Guided Play):** 50 children.
**Control Group:** 50 children who did not receive any additional motor intervention.

**Third: Research Tools**

1. MABC-2 (Movement Assessment Battery for Children – Second Edition): To measure balance, motor coordination, and fine motor skills.[3]
2. TGMD-2 (Test of Gross Motor Development – Second Edition): To measure gross motor skills, such as running, jumping, throwing, and catching.[4]
3. A specially designed standardized observation card was used to record children's performance during the program sessions, based on standardized scientific criteria.[5]

**Fourth: Intervention Program**

1. **Duration of Implementation:** The intervention program lasted ten weeks.
2. **Number of Sessions:** Two sessions per week for each experimental group, totaling 20 sessions.
3. **Duration of each session:** 60 minutes.

**Session Content:**

- Free Play: A safe outdoor space was provided with various tools (balls, cones, hoops, balance tools), with children given complete freedom to choose and practice activities without direct guidance.
- Guided Play: A set of pre-determined motor activities was implemented under the supervision of the educator, according to a weekly plan aimed at developing specific skills.
- **Control group:** continued to practice traditional daily educational activities without introducing any new interventions.

**Fifth: Field Implementation Steps**

**Preparation Phase:**

1. Obtaining written consent from parents and participating kindergarten administrations.
2. Training the team responsible for collecting data and applying assessment tools, ensuring standardized measurement methods.
3. Ensuring homogeneity of children in each group in terms of age, gender, and pre-test performance level.

**Pre-test:**

The MABC-2 and TGMD-2 tests were administered to all sample members on Sunday, February 2, 2025, using a uniform environment in terms of location and conditions.

**Implementation of the intervention program:**

The sessions were conducted as planned, under the supervision of the researcher, with qualitative observations of the children's behavior and interaction recorded using an observation card.

**Post-test:**

After the program ended, the same assessment tools were re-administered on Thursday, April 3, 2025, using the same method and procedures as the pre-test.

**Data Analysis:**

1. SPSS version 25 from IBM was used to analyze the results.
2. A paired samples t-test was used to compare pre- and post-test results within each group.
3. One-way ANOVA and multivariate analysis of variance (MANOVA) were used to compare the results of the three groups after the application.

## 4. RESULTS

Measuring the effectiveness of free play in improving gross motor skills

**Table 1:** Shows the average performance of the groups before and after the intervention in the program under study

| Gross motor skill | Average group performance (before intervention) | Average performance (post-intervention) | change | Significance level |
|---|---|---|---|---|
| Balance | 12.4 ± 2.1 | 16.8 ± 1.9 | +4.4 | 0.003 ** |
| Running | 10.2 ± 1.8 | 13.5 ± 2.0 | +3.3 | 0.014 * |
| Jumping | 8.9 ± 1.5 | 11.7 ± 1.6 | +2.8 | 0.029 * |
| Throwing | 7.8 ± 2.2 | 10.6 ± 2.1 | +2.8 | 0.041 * |

Statistical significance at *p < 0.05, strong significance at ** $p < 0.01$

### Comparing the effect of free play with guided play:

**Table 2:** Shows the statistical differences between the groups

| Skills | Free play (Δ) | Directed play (Δ) | Control group (Δ) | Statistical differences between groups | significance |
|---|---|---|---|---|---|
| Balance | +4.4 | +5.1 | +0.6 | Between free and directed: Not significant | Non sig. |
| Running | +3.3 | +4.8 | +0.5 | Directed is better ($p = 0.047$) | Sig. |
| Jumping | +2.8 | +3.0 | +0.2 | No significant differences | Non sig. |
| Fine Skills | +1.1 | +3.5 | +0.4 | Directed is better ($p = 0.009$) | Sig. |

### Gender differences

**Table 3:** Shows the statistical differences between the gender

| Skills | Males (Δ) | Females (Δ) | Statistical differences (p) | significance |
|---|---|---|---|---|
| Balance | +4.6 | +4.2 | 0.312 | Non sig. |
| Running | +3.5 | +3.1 | 0.441 | Non sig. |
| Throwing | +3.2 | +2.5 | 0.219 | Non sig. |

Changes between the three groups after the intervention

**Table 4:** Shows the changes between the three groups after the intervention

| The group | Average overall improvement in skills (Δ) | Significance level vs. control |
|---|---|---|
| Free play | +3.4 ± 1.2 | $p = 0.017$ * |
| Guided play | +4.2 ± 1.1 | $p = 0.009$ ** |
| Controlled play | +0.6 ± 0.9 | - |

## 5. DISCUSSION OF RESULTS

The results of the statistical analysis showed statistically significant differences in favor of the dimensional measurements among the group of children who participated in the unguided free play program. This indicates the effectiveness of this type of activity in developing gross motor skills, such as balance, running, jumping, and throwing. This result confirms the validity of the hypothesis that free play has a positive effect on the basic motor skills of preschool children.

The noticeable improvement in the children's performance is attributed to the open motor environment they were provided with, characterized by diversity and flexibility. This gave children the opportunity to freely choose activities and practice them at their own pace, leading to the gradual and balanced development of their motor skills. Furthermore, self-involvement in stimulating play, without direct instruction or excessive teacher intervention, helped enhance intrinsic motivation and natural motor interaction, which is consistent with the literature that emphasizes that children learn best through free movement and direct experimentation. Regarding the comparison between the free play and guided play groups, the results revealed an improvement in the performance of both groups compared to the control group. However, there was a difference in the skills developed.[6] The guided play group achieved a significant advantage in fine motor skills and visual-motor coordination, which is attributed to the organized structure of the activities and the direct guidance that characterizes this type of program. In contrast, the free play group's results stood out in gross motor skills, reflecting the positive role of the open motor environment in enhancing children's overall motor performance.[7]

Regarding the hypothesis related to gender differences, the results showed no statistically significant differences between males and females in the level of motor improvement within the free play group. This result indicates that children's response to this type of activity is not affected by gender at this age and supports the findings of some previous studies, which found that opportunities to benefit from a free play environment are equal for both genders when stimulating and supportive conditions are provided. Regarding the differences between the three groups, the results confirmed significant differences between the experimental and control groups on post-test measures, highlighting the positive impact of motor intervention, whether free or guided, compared to no intervention.[8] This result demonstrates the importance of regular motor activity in early childhood, not only as a recreational activity but also as a key developmental factor that supports the integration of physical, neurological, and cognitive development in children.[9]

These results are consistent with the findings of numerous field and theoretical studies, which have confirmed the positive relationship between motor play and the development of motor skills. They also indicated that environments rich in motor stimuli contribute to improved self-regulation, attention, and fine motor control, which enhances the value of integrating this type of activity into approved kindergarten educational programs.[10]

## 6. CONCLUSIONS

In light of the results obtained during this study, the following conclusions can be drawn:

1. The free play program demonstrated clear effectiveness in improving gross motor skills in preschool children, including balance, running, jumping, and throwing skills, reflecting the positive impact of unrestricted free play in a safe and stimulating environment.
2. Guided play contributed to the development of fine motor skills and coordination more than free play, indicating that both types of motor activities play a complementary role in supporting various dimensions of motor development.
3. The lack of statistically significant differences between males and females in motor improvement after implementing the free play program indicates that the open motor environment achieves a balanced effect between the sexes at this age.
4. The control group, which did not undergo any intervention program, showed stability or weakness in motor performance, highlighting the importance of incorporating planned motor activities, both free and guided, into kindergarten daily programs.

## 7. RECOMMENDATIONS

Based on the study's findings and conclusions, the following are recommended for those concerned with motor education and early childhood:

1. Establish free play as a core component of daily activities in kindergartens, given its role in developing gross motor skills and enhancing children's physical and cognitive abilities.
2. Create safe and diverse outdoor play environments that allow for free interaction, including tools such as balls, hoops, barriers, and balance platforms, to provide diverse motor opportunities that enhance children's development.
3. Organize ongoing training programs for educators and teachers on how to integrate free play into daily educational practices, emphasizing the importance of indirect supervision, which allows children to move freely and explore.
4. Promote the integration of free and guided play within classroom activities to ensure comprehensive development of children's gross and fine motor skills.
5. Encourage the implementation of future studies spanning longer periods and including samples from diverse age groups and social backgrounds, to further understand the educational, psychological, and social impact of various play behaviors.
6. Calling on educational policymakers to adopt educational approaches that take into account the importance of free play, by integrating it into official curricula and national policies related to early childhood, to enhance the child's right to integrated development.

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