

The Impact of an Outdoor Play Programme on the Development of Creative Abilities in Preschool Children (Aged 4–5 Years)

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Abstract---This study examines the impact of an outdoor play programme on the development of creativity in pre-school children (aged 4–5 years), emphasising the importance of outdoor play in fostering cognitive, motor, and emotional skills during this critical developmental period. The researcher adopted a quasi-experimental design using an experimental method, implementing a directed play programme with a sample of kindergarten children divided into two groups: an experimental group who participated in the outdoor play programme over a specified period and a control group who continued with their usual classroom activities. The programme included a series of physical games and organised outdoor activities that focused on stimulating imagination, developing flexibility and fluency of thought, and encouraging exploration and creativity through free movement and interaction with elements of the outdoor environment. The level of creative ability was measured before and after implementation using appropriate tests for the preschool age group. These tests included indicators of fluency, flexibility, and originality of thought and performance. The results showed statistically significant differences in favour of the experimental group, indicating that outdoor play effectively contributes to the development of creative abilities in children. These results emphasise the importance of reinstating outdoor play in early childhood educational programmes and of preparing outdoor spaces that are safe, stimulating and rich in sensory and motor interaction elements. The study recommends integrating outdoor play programmes into educational curricula and training educators to utilise them as educational tools that contribute to the development of a child's personality and enhance their creative abilities in a natural and open environment.

How to Cite:

Wissem, A., & Nacer, T. (2025). The impact of an outdoor play programme on the development of creative abilities in preschool children (aged 4–5 years). *The International Tax Journal*, 52(5), 2632–2647. Retrieved from <https://internationaltaxjournal.online/index.php/itj/article/view/271>

The International tax journal ISSN: 0097-7314 E-ISSN: 3066-2370 © 2025

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Submitted: 25 February 2025 | Revised: 23 August 2025 | Accepted: 16 October 2025

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Keywords---childhood, creative abilities, play, early childhood, kindergartens.

Introduction and research problem

Human beings are evolved living organisms that pass through several significant stages during their lives. At each stage, individuals acquire specific habits and skills that shape their personality and determine the course of their future. These habits and skills affect individuals throughout their lives. One such stage is childhood, widely regarded as the most critical phase of human development. It is the first stage of a person's life in which the initial foundations of their personality are established. The general framework of their personality is formed during this stage, which has a significant impact on their character and development in subsequent stages. This phase begins with infancy and ends with the onset of puberty.

Developmental psychologists have divided childhood into three stages: early childhood, middle childhood and the pre-adolescent stage. Each stage has unique characteristics that distinguish it from the others. Early childhood is considered the most important due to its flexibility and capacity for learning and developing various skills and abilities. This stage lays the foundation for future personality traits.

During this period, children often engage in play, a behavioural pattern through which they seek enjoyment, fun and amusement. Play contributes to the child's personality development in various ways: physically, psychologically, socially and cognitively. It is considered one of the most important forms of expression in a child's life. Historically, play has been given clear emphasis due to its importance in individual development. For instance, ancient scholars were among the first to express concern about play when they observed their children playing with glass balls and small stones.

In ancient Greek civilisation, Plato was the first to acknowledge the scientific value of play, supporting this idea by suggesting that children should be taught arithmetic and construction through play. Aristotle also believed that children should be encouraged to play in preparation for the serious tasks they would undertake as adults.

Furthermore, both Europe and America have demonstrated a keen interest in the study of play among preschool children. The contributions of Maria Montessori and Friedrich Fröbel to kindergartens in the United States were instrumental during this period. In 1895, Fröbel stated that 'children in the United States must learn how to play correctly'. Meanwhile, many philosophers were interested in play, enabling Europeans, through the efforts of philosopher-scientists, to establish sports as one of the most important components of the educational curriculum.

Through play, children create their own worlds, which contribute to all aspects of their growth and development, including cognitive development. Children in early childhood particularly possess the ability to imagine, innovate and think without limits. Furthermore, cognitive development theories emphasise that play is the primary and most effective strategy for teaching and developing children in early childhood. Play stimulates children's senses, promoting healthy physical growth while enhancing language, intellect, intelligence and thinking. Through play, children acquire scientific and mathematical concepts, as well as developing their creativity.

In light of the rapid pace of societal and technological change, it is important to focus on studying the phenomenon of innovation in children due to the resulting social and technological changes occurring worldwide. Both Guilford and Torrance have asserted that innovation is an important educational goal that societies should strive to achieve, providing all necessary means to adopt and develop it, especially in early life. They indicated that creativity develops significantly during the preschool years, particularly

for the 3–5 age group, and confirmed that creativity develops faster than intelligence at this stage. They proposed that, at a minimum, kindergartens should be equipped with all the necessary resources to support the development of children's creativity and highlight their talents. Given the importance of this in developing children's fundamental motor skills, enhancing a child's motor creativity also improves their motor abilities.

Following the consensus among scholars that creativity is not exclusive to certain individuals and that it can be demonstrated by anyone, it was established that creativity exists in every child and can be taught and developed like any other human skill. To this end, we conducted research into implementing a play programme in kindergartens, to demonstrate that creativity and motor skills can be developed solely through play. This demonstrates the importance of rehabilitating urban areas and designing spaces for children.

Recognising the importance of outdoor play as an educational tool that stimulates creative thinking and develops innovative capacities, there is a need to develop educational programmes based on outdoor play and evaluate their impact on enhancing children's creativity.

From this perspective, the main research question is formulated as follows:

To what extent does an outdoor play programme contribute to the development of creative abilities in pre-school children (aged 4–5)?

This general question branches into several sub-questions:

What is the reality of outdoor play practices in early childhood institutions?

What are the components of the proposed outdoor play programme?

Does implementing the outdoor play programme lead to statistically significant differences in children's creative abilities before and after implementation?

What changes can be observed in children's creative behaviour after participating in the programme?

Theoretical background:

Objectives of the study:

Based on what has been mentioned, and in light of the research problem framework and necessity for this study, we have established the following objectives:

The main objective of this study is to identify the contribution of play to the development of creative abilities and fundamental motor skills in preschool children. Specifically, we aim to explore whether the rehabilitation and gamification of cities enhances children's creativity and develops their essential skills. Additionally, there are several sub-objectives directly related to the research topic.

1. To determine whether play contributes to the development of creative abilities and fundamental skills in preschool children.
2. Investigating whether play reduces illnesses associated with electronic devices or video games.
3. Encouraging coexistence, social communication and emotional bonds in urban areas.
4. Developing cities on a human scale to contribute to their prosperity and vitality.
5. Promoting the concept of gamifying cities.
6. Identify the strategies employed in kindergartens to support the mental, physical, social and emotional development of children.
7. Understanding the differences between children who engage in play and those who do not, with regard to cognitive, creative and motor skills.
8. To provide appropriate care for children and raise awareness among kindergartens of the importance of play, particularly in early childhood.
9. To determine the role of play in kindergartens and its impact on nurturing creativity and developing children's motor skills.

10. Educating those responsible for kindergartens on the importance of early childhood in ensuring solid foundational development for children.
11. To provide advice to kindergarten staff on the relationship between physical growth and mental development in children.

Importance of the study:

The significance of this study can be determined based on the variables involved, particularly as it explores the sensitive stage of early childhood. This period is widely regarded as one of the most critical stages in a person's life, laying the groundwork for their overall development — cognitive, social, psychological, spiritual and emotional.

Each variable is important:

We focus on play specifically because it is beneficial throughout life, particularly for children. Play plays a vital role in shaping children, significantly impacting the development of their personalities. Through play, children can prepare for adult life, and play is regarded as a natural educational method.

Children possess many significant abilities, including creative capacities such as fluency, originality, flexibility and imagination, as well as fundamental motor skills such as throwing a ball, walking, running, balancing, hopping, jumping and leaping. It is important to nurture these abilities, as they play a key role in a child's cognitive and motor development. Creativity and motor skills are essential prerequisites for many other life skills and are of great importance in a child's life.

Play, creativity and motor skills all have a significant effect on children's healthy and balanced development during early childhood.

Reasons for the study:

To highlight the role of gamifying cities in meeting children's motor needs.

- To emphasise the role of kindergartens in preparing children for formal education.
- Demonstrate the importance of kindergartens in developing children's cognitive, intellectual, creative and motor skills during early childhood.
- To emphasise the importance of play for children at the pre-school stage.
- To challenge the perception that play is a waste of time for children, and to encourage a balance between play and theoretical learning, raising awareness among kindergartens and parents of this issue.

One important reason for conducting this research is that children's lives are dominated by electronic and technological games and watching television, which do not allow for movement or social interaction. This deprives children of health and friendships. This can lead to unhealthy and imbalanced growth.

- Attempting to provide those working in kindergartens with an organised play programme to prevent children's unhealthy development.

Terminology of the study:

Play:

Linguistically, according to Lisan al-Arab, play is the opposite of seriousness, meaning joking or amusement. It refers to an action that does not yield any benefit. We say: 'La'aba, la'ban and ta'aba.'

In definition:

In his book "Wardsworth", Piaget defines play as a representational process that transforms incoming information to fit individual needs. Play, imitation and simulation are integral to cognitive development.

Good defines play as 'a freely directed or undirected activity performed by a child to achieve enjoyment and amusement, which in turn develops mental, psychological, physical and emotional capacities'.

Operationally:

Play is considered a recreational activity for children that helps them to learn. It is a way of life for children because they learn through it, fulfilling their growth needs and demands, which makes it indispensable.

Creativity:

Linguistically, creativity is defined as the act of creating something new without a previous model. Among eloquent speakers, it signifies the incorporation of various embellishments in speech.

In definition:

Huinker defines creativity as the self's response when deeply and actively stimulated. This refers to situations in which an individual is faced with stimuli that are intense enough to affect them profoundly, prompting a distinctive response from all aspects of their being.

Torrance defines it as 'a process during which an individual becomes more sensitive to problems, gaps in information, and inconsistencies'. They also become more capable of identifying problems, finding solutions, asking questions, building hypotheses, testing or modifying them, and reaching conclusions. He also describes it as 'the process of perceiving gaps and deficiencies in information, missing elements and inconsistencies, without a learned solution'.

Operationally:

Based on previous definitions of creativity, we can provide an operational definition of creativity for our research. It is the behaviour of children in kindergarten that expresses their ability for fluency, imagination, and originality in response to stimuli and situations they encounter. Their overall creative thinking score is derived from the imagination, fluency, and originality scores combined from the Torrance Test of Creative Thinking.

Childhood:

Al-Rimawi states that childhood is a stage of development in the life cycle of a living organism, extending from birth to adolescence.

Early childhood:

In educational contexts, early childhood is referred to as the pre-school stage, while in biological contexts, it is defined based on biological foundations. According to Berger (1988), this stage is referred to as the 'years of play' to emphasise the importance of play. However, others use different terms based on the child's cognitive, sexual or moral development during this period. For example, Freud labelled this stage the 'pre-operational stage', while Kohlberg referred to it as the 'pragmatic and individualistic stage' based on his theory of moral development. Nevertheless, the term 'early childhood' is one of the most commonly used.

Creative Abilities:

Creative abilities are defined as the steps or stages a creative individual takes to find solutions or produce exceptional results.

As it is not possible to study all creative abilities, this research will focus on those that are actively developed during early childhood. These include:

Originality:

According to Torrance, originality is the ability to generate new, rare and useful ideas that are not based on previous thoughts. It is characterised by unconventional and far-reaching production.

- Imagination:

Torrance defines imagination as the active mental ability to create new images and perceptions. This involves integrating, synthesising and reconstructing memories of past experiences into new configurations. The language of creative imagination can be verbal, mathematical, musical or artistic, and the language of creative discovery stems from imagination.

- Fluency:

Fluency is defined as the ability to generate a large number of alternatives, synonyms, ideas, solutions, or applications in response to a specific stimulus, characterised by the speed and ease with which they are produced. It is the individual's capacity to produce as many ideas as possible within a given time frame.

- Flexibility:

Flexibility refers to an individual's ability to think in multiple directions and adapt easily to different situations.

Kindergartens:

Linguistically:

The plural forms include 'rawdat', 'riyad', 'rawdatat', and 'riyadan'. 'Rawda' can refer to green land, a beautiful garden, or a place where water gathers.

In definition:

According to educational terminology dictionaries, a kindergarten is an institution that enrolls children aged four to six, preceding primary education. Its aim is to apply modern educational principles to child upbringing, fostering good qualities in children using auditory and visual media and providing comprehensive educational experiences based on play and enjoyment, allowing children to grow in all aspects.

Aml Said Masoud defines kindergartens as 'any educational institution that receives children aged four to six years, with the primary goal of the comprehensive and integrated development of various aspects of the child's personality, while also meeting their needs and requirements during this stage of growth, and preparing them for subsequent educational stages through suitable programmes and activities for their age.'

Operationally:

A kindergarten is an educational institution that enrolls children aged three to six, distributing them into three categories. This research focuses on the second category (ages 4–5), aiming to promote the integrated development of different aspects of the child's personality.

Fundamental Motor Skills:

These are the primary movement skills of the human species and are innate, being inherited through the human genetic structure. They do not differ from one individual to another, except in terms of quality and performance. Although they are not taught, they can be refined and accelerated in their growth. They are associated with the developmental and maturity stages relevant to human children.

Deuer Pangrazi defines basic movement as 'movement performed for its own sake'.

Previous and Similar Studies:

Local studies:

First: Study by Nargis Zakari, 'Play Activity and Its Relationship to the Development of Innovative Thinking in Kindergarten Children', University of Qasdi Merbah, Ouargla, 2016.

- Objectives of the study:

The study aimed to determine whether play activity contributes to the development of innovative thinking in a sample of 85 children, and whether this contribution varies based on gender and family economic status. The researcher used the Gelles test to measure creativity.

- Results of the study:

The study concluded that play contributes to the development of certain creative skills in pre-school children, and found no significant difference in innovative thinking between girls and boys at this age. It was also concluded that innovative thinking differs based on family economic status.

Secondly, the study by Yacoubi Fateh, titled 'Recreational Sports Activity and Its Relationship to the Development of Certain Creative Abilities in Kindergarten Children', was a Master's thesis submitted at the University of Souk Ahras in 2007.

This study addressed the following hypotheses: Recreational activity is related to the development of certain creative abilities in kindergarten children in M'sila. The researcher relied on the Torrance Test of Creative Thinking and a questionnaire, reaching the following results:

Recreational activity is related to the development of imaginative capacity in kindergarten children in M'sila.

Recreational activity is related to the development of fluency in kindergarten children in M'sila.

Recreational activity is related to the development of originality in kindergarten children in M'sila.

Foreign Studies:

First: Study by Hanida bint Hassan Abdullah Azouz (2008) entitled 'The Effectiveness of Certain Scientific Activities in Developing Innovative Thinking Abilities in a Sample of Kindergarten Children', submitted as a Master's thesis in Mecca.

Objective of the study:

To identify the effectiveness of certain scientific activities (sound, light and air) in developing creative thinking abilities (fluency, flexibility and originality) in children aged 5 to 6 years old. An experimental method was adopted, using experimental and control groups, each consisting of 20 children. The researcher employed the following tools: a programme of scientific activities prepared by the researcher; the Abraham Creative Thinking Test; and the Z.A. Test for Preschool Children's Intelligence.

- Results of the study:

The study produced the following results:

- There were statistically significant differences in innovative thinking ability scores between the experimental and control groups, favouring the former.
The programme had a significant impact on the development of innovative thinking abilities in the experimental group.
- No significant differences were found between the creative thinking ability scores of males and females.

Second: Study by Magda Al-Aql Muhammad Saber, 'The Effect of Teachers' Educational Attitudes Interacting with a Programme of Motor Activities on the Development of Creative Ability in Preschool Children', Doctoral Thesis, Faculty of Education, Tanta University, 1992.

- Objective of the study:

The study aimed to determine the extent to which teachers' educational attitudes influence the development of creativity and to evaluate the effect of a proposed programme of motor activities on this development. The study also sought to understand how educational attitudes and the motor activities programme interact to influence the creative ability of preschool children.

The study was conducted with a sample of teachers; 12 teachers from nurseries in Tanta were selected, all of whom taught in nurseries where the motor activities programme was implemented. A sample of 270 children was selected from six schools in Tanta for the 1991/92 academic year. These were divided into control and experimental groups: the former consisted of 90 children, while the latter consisted of 180 children aged 4 to 6 years with an average age of 5 years, 3 months and 19 days.

The researcher used the following tools: the Draw-a-Man Test for intelligence; the Creative Thinking Test for Children Using Movements and Actions, translated by Muhammad Thabet Al-Din (1982); and a scale for educational attitudes.

The researcher concluded that the hypotheses were fully supported as they showed statistical significance at the 0.01 level in favour of the experimental group after the programme was implemented. Additionally, significant differences were found among teachers with strict attitudes concerning the dimensions of fluency and originality.

Third: 'The Effect of a Proposed Motor Education Programme on Sensory-Motor Awareness and Creative Thinking in Kindergarten', a doctoral thesis from the Faculty of Physical Education at Helwan University (1996) by Reda Abdel Hamid Amer.

Objective of the study:

To study the effect of a proposed motor education programme for preschool children aged 4 to 6 years on sensory-motor awareness and creative thinking.

The study was conducted with a sample of 90 children, excluding those with disabilities, illnesses or frequent absences. The sample was divided into two groups: an experimental group and a control group, with each group consisting of 45 children. The researcher employed the following tools: the Goodenough Intelligence Test, Torrance's Creative Awareness Scales, Torrance's Creative Thinking Test, and two questionnaires: one aimed at identifying suitable activities for measuring sensory-motor awareness and one designed to determine appropriate activities for testing creative thinking.

The hypotheses and research questions were as follows:

There are statistically significant differences between the experimental group, which underwent the proposed motor education programme, and the control group in the post-measurements of sensory-motor awareness, favouring the experimental group.

2) There are statistically significant differences between the experimental group and the control group in the post-measurements of creative thinking, again favouring the experimental group.

The results indicated statistically significant differences in the creative thinking test across its three dimensions (fluency, originality, and imagination) between the pre-test and post-test measurements of the experimental group, with improvements ranging between 70.7% and 112.82%. These results suggest that the proposed motor education programme is effective in enhancing creative thinking ability in the experimental group.

Fourth: Study by Moore et al. (1987):

To assess the stability of creativity in children, experiments were conducted on thirty-three four-year-old children. The findings indicated that creativity, defined as the ability to produce unusual ideas, is relatively stable in children aged 4 to 6 or 8 years. Additionally, creative thinking differs from intelligence; normal responses tend to be followed by creative ones.

Fifth: Dougherty (1994) study:

This study examined the relationship between cognitive processes manifested in young children's self-talk and creativity. Experiments were conducted on a sample of forty-four kindergarten children aged between three and six years. The researchers used the following tools in this study:

- the Torrance Test of Creative Thinking, focusing on performance and movement aspects.

Mattingly's classification for analysing individual differences in private speech.

- A geometric task designed to produce a high level of frustration and generate self-talk.

The results showed that, as creativity increased, so did the quality of self-referential statements. A relationship was found between supportive and problem-solving statements, and creativity measures (fluency, originality, imagination, and overall score). An analysis of the content of these statements revealed that they reflect cognitive differences in children's self-talk. The findings also indicated a negative relationship between problem-solving statements and off-task speech.

Practical background:

Research Methodology:

Given the nature of the topic, it is crucial for the researcher to select a suitable methodology for their study. This choice relates to the approach taken by the researcher in addressing the problem, discovering the truth and answering the questions raised by the topic.

In the present study, given the nature of the problem, an experimental method is deemed appropriate. This method is well-suited to the nature of the research, which involves measuring the impact of a programme incorporating specific play activities on the development of particular motor skills in pre-school children.

From a scientific research perspective, an experiment involves conducting a procedure aimed at verifying causal relationships by randomly allocating individuals to groups in which one or more independent variables are manipulated. The core element of experimental research is that the researcher intentionally places different groups under varying experiences.

Therefore, it can be concluded that the experimental method is better suited to our research topic than other methodologies, making it the most suitable approach for our study.

Exploratory Study:

Conducting an exploratory study is essential in many research projects as it enables the researcher to:

- identify and understand the nature of the field
- recognise the challenges faced
- adjust the nature of the field
- understand the characteristics of the sample

- assess the sample's response to the objectives set by the researcher. It also helps to ensure that the data collection methods align with these objectives. The exploratory study enables us to identify potential difficulties and obstacles and examine possible techniques in order to formulate a testable hypothesis. Furthermore, it helps us to evaluate the tools used and determine their validity and reliability in gathering information through practical application.

Variables of the study:

To obtain reliable scientific results, every researcher must define the variables of their study after formulating the research question. The variables in this research are as follows:

Independent variable:

In our current study, we identify 'play' as the factor that influences children's creative abilities. Therefore, we assert that play is the independent variable in this study. This is the variable that explains the phenomenon and serves as the hypothetical cause of the dependent variable. However, the independent variable in one study may also serve as the dependent variable in another.

Dependent variable:

In our study, 'the development of creative abilities' (originality, fluency, flexibility and imagination) is considered the dependent variable. It represents the outcome and relies on the previous variable (the independent variable). It is both the phenomenon and the goal of the study.

Research tools:

Play Programme:

The Play Programme was developed based on the scientific steps followed in creating educational programmes.

Objective of the programme:

To identify the contribution of play to the development of creative abilities (fluency, imagination, flexibility and originality) in children aged 4 to 5 years old.

Content of play sessions:

I selected games suitable for the age group, designed to stimulate children's motivation to play and encourage them to think during play. The location for the games was determined, as was the role of each child during the implementation of the units. Detailed explanations of the play methods and rules were provided to the teacher.

Programme evaluation:

Evaluation is a crucial element in the preparation of educational programmes, as it enables us to assess the progress made by children in various areas of development. Three types of evaluation were used to assess the play sessions proposed:

1. Pre-assessment: implementing the Torrance Test of Creative Thinking.
2. Formative assessment: at the end of each play session, we evaluated the children through a specific game or activity.
3. Final assessment: Re-administering the Torrance Test of Creative Thinking after the play sessions have finished.

We proposed a play programme consisting of 12 play units for preschool children aged 4 to 5 years. The games included in these sessions aimed to promote movement, intelligence, imitation and sensory perception, with one session conducted each week. This schedule was due to the challenges of entering kindergartens, which only permitted one visit per week.

Validity and reliability of play sessions:

Reliability of play sessions:

To ensure the reliability of the motor programme, we presented it to a group of evaluators, specifically higher education instructors, to ensure apparent validity. Most evaluators agreed on the suitability of the programme's dimensions and its apparent validity.

Table 01: Evaluators of Play Sessions

the names and titles of the judges	the academic degrees	University
- Laban Karim	Professor of Higher Education	University of Algiers - 03
- Merazgua Jamal	Professor of Higher Education	University of Algiers - 03
- Boukharaz Ridhwan	Professor of Higher Education	University of Algiers - 03

Torrance Test of Performance and Movement:

This test, developed by Paul Torrance in 1977 and translated by Muhammad Thabet, measures creative thinking in children through movements and actions. This test measures creativity in children aged 3 to 7 years, including preschoolers and some primary school children.

The Torrance Test consists of four activities representing some of the ways in which children express their creative abilities:

1. Activity One: This activity assesses the child's ability to produce alternative ways of moving. The child is asked to move from one specified location to another.

2. Activity Two: This activity evaluates the child's ability to imagine, participate in, and imitate unusual roles. It includes situations in which the child is asked to move or imitate certain objects. There are six scenarios in total, four of which require the child to pretend to be an animal, such as a fish, rabbit, snake or tree. The last two scenarios involve performing other actions, such as driving a car or pushing an elephant toy.

3. Activity Three: The child is asked to put an empty matchbox in the bin. The more unusual methods the child can generate for placing the matchbox in the bin, the more it is considered an indicator of their creative potential.

4. Activity Four: The child is asked to invent alternative uses for the matchbox, such as how they could use it or what it could be used for instead. This activity teaches children how to use objects for their intended purpose.

Reliability and validity of the Torrance Test for Creative Thinking:

To assess the reliability of the test, the researcher employed the test-retest method, applying it to ten preschool children. Fifteen days later, the researcher administered the same test to the same sample of children under the same conditions. The time difference between the two administrations was calculated for each dimension of the test and the correlation was determined. The researcher also used self-validity, calculating the square root of the test's reliability coefficient, as shown in the following table:

Table 2: Validity and reliability of the Torrance test for creative thinking.

	Imagination	Fluency	Flexibility	Originality
Reliability	0,83	0.82	0,88	0.93
Validity	0,91	0.90	0,93	0.96

As can be seen from Table 2, the test is highly valid and can be used reliably.

Sample of the study and selection method:

Our research was conducted in kindergartens in Tizi Ouzou Province. We intentionally selected kindergartens with similar resources, facilities and play areas. We selected the 'Magic Hands' kindergarten and the 'Lina' kindergarten, each of which had four sections for children aged 4 to 5 years. We randomly selected two sections from each kindergarten, each containing 15 children.

We established a control group and an experimental group in each kindergarten. In the "Magic Hands" kindergarten, the control group comprised 15 children and the experimental group comprised another 15 children. The same structure was applied to the other kindergarten, resulting in a total of 30 children in the control group and 30 children in the experimental group.

Characteristics of the sample:

Table 3: Characteristics of the Sample

Characteristics	Gender		Length	Weight
	Male	Female		
- Enchanted Hands Kindergarten	17	23	Ranges from 1.15 to 1.20 meters	Ranges from 20 to 23 kilograms
- Lina Kindergarten	22	18		
- Total	60			

Research domains:**- Spatial domain:**

Magic Hands Kindergarten and Lina Kindergarten in Tizi Ouzou Province.

- Temporal domain:

The theoretical aspect of our research began in early April 2016, while the practical aspect commenced in early February 2017.

Statistical tools used:

In this study, the MEDCALC system was used to conduct statistical analyses and treatments. The statistical methods employed included independent and paired samples t-tests.

Analysis of results:

The results concerning the equivalence of the control and experimental groups in the pre-test measurements of the targeted creative abilities (originality, fluency, flexibility and imagination) are as follows:

The T value indicating the difference between the control and experimental groups for all creative abilities in the pre-test:

Table 08: T-Values Indicating Differences Between the Control and Experimental Groups in All Creative Abilities

	Groups	m	V	Sd	Calculated T	Degrees of Freedom (Df)	Tabulated T	Error Degree	Significance
Fluency	Control Group	1	0.41	0.64	1.48	58	2.009	0.05	Not Significant
	- Experimental Group	1.23	0.32	0.57					
Flexibility	- Control Group	1.23	0.73	0.85	0	58	2.009	0.05	Not Significant
	- Experimental Group	1.23	0.39	0.63					
Originality	- Control Group	0.63	0.30	0.23	0.72	58	2.009	0.05	Not Significant
	- Experimental Group	0.53	0.26	0.55					
Imagination	- Control Group	1.47	0.94	0.97	1.51	58	2.009	0.05	Not Significant
	- Experimental Group	1.8	0.57	0.71					

The analysis in Table 8 revealed that the mean score for the control group was as follows: 1.0 for fluency, 1.23 for flexibility, 0.63 for originality and 1.47 for imagination. The respective standard deviation values were 0.64, 0.85, 0.23 and 0.97.

In contrast, the mean scores for the experimental group were 1.23 for fluency and flexibility, 0.53 for originality and 1.80 for imagination. The standard deviation values for this group were 0.57 for fluency, 0.63 for flexibility, 0.55 for originality and 0.71 for imagination.

The calculated T values were all lower than the tabulated value of 2.009 at a significance level of 0.05 and with 58 degrees of freedom. The T values were 1.48 for fluency, 0.00 for flexibility, 0.72 for originality and 1.51 for imagination. These results indicate that there are no statistically significant differences between the experimental and control groups in terms of creative ability, thus confirming the equivalence between the two groups in the pre-test.

Results related to the experimental group's children in pre-test and post-test measurements of targeted creative abilities (originality, fluency, flexibility, imagination):

T values indicating differences between the experimental group in all creative abilities in pre-test and post-test:

Table 17 shows the T values indicating differences in the children's scores in the experimental group in the pre-test and post-test for all abilities (fluency, flexibility, originality and imagination).

	Groups	m	V	Sd	Calculated T	Degrees of Freedom (Df)	Tabulated T	Error Degree	Significance
Fluency	- Pre-test	1.23	0.34	0.57	11.94	29	2.045	0.05	Significant
	- Post-test	2.53	0.26	0.51					

	Groups	m	V	Sd	Calculated T	Degrees of Freedom (Df)	Tabulated T	Error Degree	Significance
Flexibility	- Pre-test	1.23	0.39	0.63	7.87	29	2.045	0.05	Significant
	- Post-test	2.47	0.33	0.57					
Originality	- Pre-test	0.53	0.26	,051	12.32	29	2.045	0.05	Significant
	- Post-test	1.67	0.23	0.48					
Imagination	- Pre-test	1.8	0.51	0.71	12.83	29	2.045	0.05	Significant
	- Post-test	3.47	1.15	1.07					

The results presented in Table 17 show that there were differences in the mean scores and standard deviations for the experimental group in the pre-test and post-test for creative thinking abilities. In the pre-test, the mean score for fluency was 1.23, with a standard deviation of 0.57. In the post-test, the mean score for this ability increased to 2.53, with a standard deviation of 0.51.

For flexibility in the pre-test, the mean score was 1.23 with a standard deviation of 0.63; in the post-test, this increased to a mean score of 2.47 with a standard deviation of 0.57. For the originality pre-test, the mean score was 0.53 with a standard deviation of 0.51; in the post-test, this increased to a mean score of 1.67 with a standard deviation of 0.48. For the pre-test of imagination, the mean score was 1.80 with a standard deviation of 0.71; in the post-test, this increased to a mean score of 3.47 with a standard deviation of 1.07.

To determine the significance of the differences between the pre-test and post-test for the experimental group's creative thinking abilities, the results were analyzed using the T-test for paired samples, as shown in the table. The calculated T value for fluency was 11.94, which is greater than the tabulated value of 2.045 at the significance level of 0.05 with 29 degrees of freedom. This indicates significant differences between the pre-test and post-test; the mean score of the post-test (2.53) is greater than that of the pre-test (1.23), indicating that the differences favored the post-test for fluency.

Similarly, the calculated T-value for flexibility was 7.87, exceeding the tabulated value of 2.045 at a significance level of 0.05 and with 29 degrees of freedom. This indicates significant differences between the pre-test and post-test results. The mean post-test score (2.47) is greater than the pre-test score (1.23), thus favouring the post-test for flexibility.

For originality, the calculated T-value was 12.32, which is also greater than the tabulated value of 2.045 at a significance level of 0.05 and with 29 degrees of freedom. This indicates significant differences between the pre-test and post-test. The mean post-test score (1.67) is higher than the mean pre-test score (0.53), indicating that the post-test favoured originality.

Lastly, for imagination, the calculated T-value (12.83) is greater than the tabulated value (2.045) at a significance level of 0.05 and with 29 degrees of freedom, indicating significant differences between the pre-test and post-test. The mean post-test score (3.47) is higher than the mean pre-test score (1.80), showing that the differences favoured the post-test for imagination.

Results related to both control and experimental groups in post-test measurements of targeted creative abilities (originality, fluency, flexibility, imagination):

T values indicating differences between the control and experimental groups in the post-test for all abilities:

Table 22: T-Values Indicating Differences Between the Control and Experimental Groups in the Post-Test for All Abilities

	Groups	m	V	Sd	Calculated T	Degrees of Freedom (Df)	Tabulated T	Error Degree	Significance
Fluency	Control Group	1.17	0.42	0.65	9.09	58	2.009	0.05	Significant
	- Experimental Group	2.53	0.26	0.51					
Flexibility	- Control Group	1.37	0.45	0.67	6.85	58	2.009	0.05	Significant
	- Experimental Group	2.47	0.33	0.57					
Originality	- Control Group	0.63	0.24	,049	8.25	58	2.009	0.05	Significant
	- Experimental Group	1.67	0.23	0.48					
Imagination	- Control Group	3.47	1.15	1.07	7.69	58	2.009	0.05	Significant
	- Experimental Group	1.8	0.57	0.71					

The results of the analysis in Table 22 revealed that the mean fluency score for the control group was 1.17, with a standard deviation of 0.65; for the experimental group, it was 2.53, with a standard deviation of 0.51. The calculated T value was 9.09, which is greater than the tabulated value of 2.009 at a significance level of 0.05 and with 58 degrees of freedom. This indicates significant statistical differences in fluency skill between the experimental and control groups, confirming that the two groups are not equivalent in this respect in the post-test.

Referring to the mean scores of the experimental and control groups in the post-test reveals that the mean fluency score for the experimental group (2.53) is higher than that for the control group (1.17). This suggests that children in the experimental group performed better in terms of fluency.

Regarding flexibility, the mean score for the control group was 1.37 with a standard deviation of 0.67; for the experimental group, it was 2.47 with a standard deviation of 0.57. The calculated T-value was 6.85, which was greater than the tabulated value of 2.009 at a significance level of 0.05 and with 58 degrees of freedom. This indicates significant statistical differences between the two groups in flexibility, confirming that there is no equivalence in this skill between the two groups in the post-test. To understand these differences, we can look at the mean post-test scores for flexibility in the experimental and control groups, where the mean score for the experimental group (2.47) is higher than that for the control group (1.37). This suggests that the differences favoured the flexibility of the children in the experimental group.

The mean score for the control group was 0.63 with a standard deviation of 0.49, while the mean score for the experimental group was 1.67 with a standard deviation of 0.48. The calculated T value was 8.25, which is greater than the tabulated value of 2.009 at a significance level of 0.05 and with 58 degrees of freedom. This indicates significant statistical differences between the two groups in originality skill in the post-test, confirming that the two groups are not equivalent in this respect.

To understand these differences, we can look at the mean scores for originality in the post-test for the experimental and control groups, where the score for the experimental group (1.67) is higher than that

for the control group (0.63). This suggests that the differences favoured the originality of the children in the experimental group.

Regarding imagination, the mean score for the control group was 1.53, with a standard deviation of 0.87; for the experimental group, it was 3.47, with a standard deviation of 1.07. The calculated T-value was 7.69, which was greater than the tabulated value of 2.009 at a significance level of 0.05 and with 58 degrees of freedom. This indicates significant statistical differences between the two groups in terms of imagination skills, confirming that the two groups are not equivalent in this respect after the test.

Similarly, the mean score for the experimental group in imagination (3.47) was higher than that of the control group (1.53). This suggests that the differences favoured the imagination ability of children in the experimental group.

Conclusion

Physical education and sports are considered essential for achieving the objectives of the educational process at all levels. Therefore, paying attention to this subject is the first and most important step in achieving all the competencies outlined in the physical education curriculum. This interest must encompass all age groups, with childhood being the most critical stage of human development as it serves as the foundation for individual growth, particularly in the early years. Children are a society's true wealth and its hope for a better future. Therefore, it is vital to care for, nurture and ensure the safety of children, as this shapes the future.

Material and moral efforts must be made to provide for children's basic needs and secure their future. Early childhood represents the beginning of human development. A child's personality is formed based on the type of upbringing and care they receive throughout the various stages of their intellectual, emotional, behavioural, physical and motor development. Children will face the challenges of the coming century, which are represented by the outcomes of scientific and technological advancement. Therefore, paying attention to the preschool stage has become a social, economic and educational necessity, enabling us to raise and nurture our children in a way that prepares them for future challenges.

In our study, we examined the relationship between urban rehabilitation, creative abilities and basic motor skills, all of which are important for a child's balanced development. Through an analytical study of the theoretical aspect, as well as practical studies and previous research, we examined the relationship between urban rehabilitation and children's play, and its impact on the development of creative abilities and basic motor skills. We concluded that play plays a significant role in children's development, enhancing their basic motor skills and fostering their creativity.

Ultimately, we hope to see increased attention given to early childhood, along with the necessary economic, material and moral resources to support children's development in all areas. We encourage children to play outside and advocate for urban rehabilitation to meet their movement needs and foster their creativity, utilising every space as a special place for play.

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