

**Relationship between Playfulness and Motor Creativity in Preschool Children.**

المرح وعلاقته بالإبداع الحركي لأطفال ما قبل المدرسي في ولاية عنابة

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**Summary:**

Most previous studies have suggested an existence of strong correlation between playfulness and divergent thinking abilities, which denotes motor creativity. The current study therefore aimed to know the relationship between playfulness and motor creativity of a pre-school children sample at the preparatory schoolrooms in primary schools of the first district affiliated to Department of Education for the Wilaya of Annaba, estimated at 62.

The researcher used the analytical descriptive method, using the 1990 Barnett playfulness tool (CPS), and the Weyrck test for motor creativity as measurement tools: The study had concluded a strong correlation between playfulness and the key components of motor innovation (Motor fluency, Motor originality, and Motor flexibility). So, the study showed that children's tendency to develop new play scenarios is linked to the growth of playfulness situations.

**Keywords:** playfulness; creativity motor; pre-school education; children.

**ملخص**

أشارت معظم الدراسات السابقة الى وجود علاقة ارتباطية قوية بين المرح وقدرات التفكير التباعدي التي تدل على الابداع الحركي. لذلك هدفت الدراسة الحالية الى معرفة العلاقة بين المرح والابداع الحركي لعينة من أطفال ما قبل المدرسة للأقسام التحضيرية في المقاطعة الأولى لمديرية التربية لولاية عنابة قدرت ب ( 62)، استخدم الباحث المنهج الوصفي التحليلي، باعتماد أداة المرح لبرنات 1990 (cps)، واختبار weyrck وإيرك للأبداع الحركي كأدوات قياس: توصلت الدراسة الى وجود علاقة ارتباط قوية بين المرح والمكونات الأساسية للأبداع الحركي، (الطلاقة الحركية والاصالة الحركية والمرونة الحركية)، إذا أظهرت الدراسة أن ميل الأطفال لتطوير سيناريوهات جديدة للعب يرتبط بنمو المواقف المرحية.

**الكلمات المفتاحية:** مرح، ابداع حركي، تعليم ما قبل المدرسي، أطفال.

**I- Introduction :**

It is often said that there is only a thin line between genius and madness, which means that there is a limit where we can go beyond the rules. Today, we understand this old saying as expressing the closeness between creativity and aberration. By adopting the Gilford concept of creativity as a merger in new ways, we may have a debate about aberration and turn our attention to transgression, creativity, and the effects of playfulness on the evolution of creative mind.

Like many concepts in psychology, playfulness was often considered a trivial subject, which didn't deserve to be studied. However, an increasing number of psychologists, educators and pediatricians are aware that the participation of children in spontaneous play has infinite cognitive, social, emotional and psychological benefits.

Therefore, the ability of children to participate fully and freely in play and playfulness is essential for their healthy development. It is widely recognized that play among children can be the main tool for discovering the surrounding world, and for developing their own selves and competencies.

On the other hand, creative behavior is said to be more easily expressed when a person is not aware of how to deal with an unknown problem or situation. Young children faced problems earlier in their daily lives that they are not familiar with, so it is very reasonable for them to develop creative mechanisms to deal with reality.

Torrance pointed out that every child is creative in nature unless exposed to abandon, cruelty, rejection or lack of love (Torrance, 1981). However, a balanced amount of problems and their solutions, together with a particular genetic predisposition, may lead to high levels of dynamic creative activity.

Giving child the freedom to play and having playfulness, with the appropriate care, has a great impact on the world's perception around him. The basic needs of our children must be secured, the motivation to learn must be provided, knowledge developed and the perceptions that will promote innovation extended (al-soror, 2011). Because the principle of learning by playing is a modern trend that is specific to the kinesthetic aspect of the first years of a child's life, as developed countries have given great care to this trend, because they believe strongly in the role of movement in the learning process.

Because we believe in this principle, and as they are reductive of movement, play and playfulness gives a wide physical experience to the pupil, especially during kinesthetic performance situations (gal and bonoit, 2011)

Cleland and Gallahu (1993) studied the divergent movement ability in the psychological field, given the initial data of this ability for young children (aged four to six years and eight years) to produce divergent kinesthetic response in three key tasks of the movement. The results of this initial study showed that older children (aged 6-8 years) were able to create and produce more movement patterns than younger children (four years old), and that previous motor experiments were an important factor in designating the difference in mobility ability (al-kinani, 2010).

When someone observes pre-school children, he can indicate that they are usually more flexible and creative or that they show highly creative thinking during playfulness than any other activity. That's why playfulness is an important and encouraging field to stimulate children's creative thinking. Piaget (1962) referred to the important role that playfulness has in children's development, noting that it provides a creative imagination that can be used in thought and reason.

Motor creativity is a multidimensional structure, consisting of the following criteria: (A) motor fluency (The total number of different stimuli responses), (B) motor flexibility (a variety of responses based on changes in meaning, in interpretation.) and (C) motor originality (Requires response regarding the entire sample responses).

## **2. The problematic**

Many types of work require innovative and creative skills. However, one might argue that for children, creativity creates a feeling that they can contribute to their environment and give them a sensation of control, being the creative participants in their world.

I discuss in this article how children develop creative motor skills during different non-organized social attitudes of childhood. More extensively, I focus on the positive, negative or neutral role that different types of materials play in producing creative work. I mean by "creative" these new actions that children bring to playfulness, and I emphasize that children need to go beyond the current game scenarios.

In other words, this study addresses how children use certain materials to explore their creative perceptions, based on the concept of creative imagination in children's playfulness as producing rich sets of movements and skills. This study looks at how children display their creative imagination so that we can better understand their motivations and activities in regard to certain types of games.

**Study Questions:**

Is there a statistically significant relationship between playfulness and motor creativity of pre-school children at some primary schools in the Wilaya of Annaba?

**The sub-questions shall be as follows:**

- Is there a statistically significant relationship between playfulness and Motor fluency for pre-school children?
- Is there a statistically significant relationship between playfulness and Motor flexibility for pre-school children?
- Is there a statistically significant relationship between playfulness and Motor originality for pre-school children?

**Objectives of the study:**

- Measuring playfulness and motor creativity of pre-school children in preparatory classroom at primary schools located in the Wilaya of Annaba.
- Creating the reciprocal influence of the playfulness variable on the motor innovation variable of pre-school children

**Importance of the study:**

The study draws its importance from its subject, as it is considered the first study in the Arab world, and consequently the first study in Algeria - Based on the researcher's knowledge-. Since it is useful for learning about children's motor creativity, which is the starting point for building their personality. The relationship between playfulness and motor creativity reflects a child's ability to weave ideas from his imagination by being able to express his abilities, especially motor abilities. The results are thus expected to benefit as follows:

- The study may contribute to raising awareness among parents and early childhood specialists about scientific procedures for playfulness and motor creativity.

**3. Study terminology****3.1. Playfulness**

Lieberman (1965-1977) first formulated this term, considering it as the children's attitude toward playing. He defined it as the essence of play, and according to the same scholar, playfulness is what children can easily participate in, while doing the activities and behaviors they show during play (Barnett, 1991).

The concept of playfulness has evolved with the development of research and with divergent point of view, until Sanderson (2010) defined it as a natural tendency, free communication with the environment, since the playfulness is the only way for a child to connect to the world and discovering it.

**Procedural definition** it is the degree of playfulness obtained by using the CPS playfulness scale of Barnatt 1990, on a sample of the preschool schoolrooms in the first district, affiliated to Department of Education at the Wilaya of Annaba.

**3.2. Motor creativity**

Torrance defines motor creativity as a process in which the learner becomes sensitive to problems, thus it is the process of recognizing deficiencies, information defect, missing elements and inconsistency between them, then looking for alternatives and indicators in the situation, and in the learner's information and formulating hypotheses around them, testing the validity of these hypotheses, and link between results.

Thus, he defined motor creativity as the ability to produce the largest number of new motor responses (al-hila, 2017, p. 340).

**Procedural definition** it is defined as the degree of new motor responses for pre-school children, which are characterized by : fluency, flexibility, and Motor originality, on the Weyrck test of motor creativity translated by Redha Moustafa 1984, and modified by the Lamiaa Al Diwan 1999, it comprises according to (al kinani, 2010, p. 378):

**Motor Fleuncy** is the individual's ability to perform as many motor units as possible for the stimulant in a given time period.

**Motor Flexibility** is the ability of an individual to change and vary in the transition from one motor behavioral category to another that is different and appropriate for the stimulant within a specific time.

**Motor originality** is the ability of an individual to perform categories of rare motor behavior, i.e., a few recurrences in a statistical sense among members of the group and its suitability for the stimulus within a specified time.

**3.3 Pre-school education:** The definition of pre-school education in Algeria was published in the Official journal No. 35-76 Issued on 16 April 1976, and the definition in article 19 came as follows: "Preparatory education is dedicated for children under the age of obligatory schooling" (Official Journal of the Algerian Republic, 1976).

## 4. Theoretical framework and previous studies

### 4.1 Theoretical framework

#### Playfulness

Pre-school period is an important stage in creating and building a child's personality in all its characteristics, especially playfulness and creative one. During this time, the abilities, energies and many perceptive and cognitive processes that develop their creative sense take shape; creativity is then demonstrated through their spontaneous actions during playfulness (Selby, 2005, p. 49).

When looking at playfulness definitions, and different point of views, it is mentioned as awareness or a situation, allowing children to act spontaneously (Yurtb, 2016). Or according to Youell (2008), who classify it as a psychological state that helps children think flexibly and contribute to innovative thinking. Playfulness generally contributes to the healthy development of children and gives clear indications of children's feelings, which in turn allow teachers and parents to understand, express and predict these feelings in the future.

#### The difference between play and playfulness

Playfulness is used in line with the concept of play, although the terms (play and playfulness) have different meanings (Lester, 2010).

When the relevant concepts were viewed, it was concluded that playfulness is a behavior. The play, meanwhile, is personal act that involves internal motivation activities, while playfulness refers to motivational situations. In addition, play involves a violation of laws, while playfulness includes entertainment (Bateson, 2013). So fun is an internal structure with an internal emotional state, which evolves over time as a result of experience and interaction with the environment. It may also reflect the developmental character of children, which educational curricula seek to develop in a deliberate educational context.

#### Motor creativity

In most research, the nature and relationship of children's creativity to playfulness behavior was studied, and was thought to be the ability to think creatively or to think differently using both verbal batteries and graphics (1984, Barnett L.); Katiyar and Jarial, 1985; Lieberman, 1965, 1977). The study of the relationship between fun behavior and motor creativity, assessed by the divergent movement ability of children, was the heart of this study. Motor creativity has been defined as a combination of perceptions in new and modern motor patterns that can either be a solution to a previous problem or to express an idea or emotion through the movement (al-kinani, 2010).

Movement during preschool age is the fundamental and dominant way of working, expression, learning, communicating and global development of children (Gruber, 1986). According to Cleland (1994), children have the potential not only to learn basic movement patterns, but also to control and creatively express their movements. Children's efforts to produce different basic motor patterns about

mobility problems or tasks (differentiated mobility) include aspects of critical thinking and motor creativity.

#### 4.2 Previous studies

**First study** by Evridiki Zachopoulou, Ourania Matsouka, 2003, entitled "the relation of playfulness to the motor creativity of the Children of Pre-School in Greece:

The study examined to what extent fluency and flexibility are connected in the production of movement patterns, such as elements of divergent and critical thinking, relate to a set of psychological elements (physical spontaneous, sociological spontaneous, cognitive spontaneous, evident happiness, and sense of humor) that contribute in a combined way to playfulness, and it is an internal personal feature. A total of 250 pre-school children participated in this study. Their teachers have completed the Greek version of the child's playfulness scale. Divergent movement ability test has been used to evaluate children's creativity rate.

The data indicated that there is a moral relationship between playfulness, motor fluency and motor flexibility. This means that playfulness and motor creativity are connected because movement during pre-school age is the essential way of working, expression, learning, and development.

**The second study:** A study by Lamyaa Hassan Al-Diwan (1999), which dealt with the following topic: The use of two teaching methods to develop general and dynamic creative abilities in the teaching of sports education in elementary fifth grade schoolgirls. It was aimed at identifying the impact of two pedagogical approaches on developing the general and dynamic creative abilities of fifth-grade primary schoolgirls.

It also aimed at identifying the effectiveness of the proposed educational program using both methods in private in developing and comparing general and dynamic creative abilities to traditional ones, using the experimental method, on a sample of 60 schoolgirls, divided into two groups, one experimental and one control. She applied to them the Weyrck test for motor creativity, and using the Statistical Package program. She concluded that: The complex style group surpassed the rest of the groups in the development of general and dynamic creative abilities followed by the imperative style.

### 5. Study methodology and procedures

#### 5.1 method

The searcher used the analytic descriptive method due to its relevance to the nature of this study.

#### 5.2 Community and Study Sample

The study community included the first district preparatory schoolrooms affiliated to Department of Education in the Wilaya of Annaba (annex 1), who numbered 490: 248 children and 242 girls, for the school season 2018/2019. You can find Sample selection procedures in field procedures.

#### 5.3 Study Tools

##### 1. Children's Playfulness scale (Barnet L. A., 1990)

Lieberman (1965-1977) is the first to develop a scale for children playfulness measurement. The scale includes five sub-dimensions, As follows:

##### **Physical spontaneity**

Including the harmonious enthusiastic movements whole body and its constituents.

**Social spontaneity** Including positive relationships with peers, and the ability to easily involve within the group.

**Cognitive spontaneity** Including creativity and flexible thinking.

Evident happiness: The conditions of laughter, happiness and entertainment.

Sense of humor: Including enjoying funny events, recognizing fun situations, and the gentle teasing of peers. Barnett (1990, 1991, 2007), studied the playfulness based on the leading Lieberman research. He contributed significantly to the description and measurement of this scale on pre-school children and he found it to be valid. The scale contains five branches with 23 items.

##### **Test credibility and Reliability**

The researcher has confirmed the credibility of the test by applying it to a sample of 10 children and girls, by means of Internal Consistency credibility, which expresses the degree to which the items are related to the dimensions of the global scale.

**Table No. 01:** Represents the degrees of correlation between the dimensions of the playfulness scale and the overall degree (Internal Consistency credibility).

CPS playfulness scale	Number of items	Internal Consistency credibility
Physical spontaneity	4	0.81
Social spontaneity	5	0.83
Cognitive spontaneity	4	0.79
Evident happiness	5	0.61
Sense of humor	5	0.78

The table shows that correlation coefficients were strong, with physical spontaneity (0.81), social spontaneity (0.83), cognitive spontaneity (0.79), evident happiness (0.61), and sense of humor (0.78). At the level of the significance 0.05, this indicates that it is a good indication that the standard of playfulness in this study is statistically significant, with the purpose of ascertaining his consistency, he was twice applied with a two-week time difference and the scale as a whole was consistent (0.84).

## 2. Weyrck test for motor creativity

This test is American, and Reda Mustafa Asfour translated it to Arabic, prepared, and applied it in his 1984 study to children, who finished the fourth grade (9-10) years. This test has been developed and used in several Arab studies as a study of Lamyaa Al Dyoune (1999), until it was used in the Yaakoubi study (2012) on the Algerian environment for children aged between (3-12) years.

This shows that the test is convenient for application to the current study sample from (3-12) years, to measure spontaneous flexibility, motor originality and motor fluency.

It comprise four parts : a- Parallel lines test, b- The barre Test, c-The hoop test, d- The ball test, each of these parts is made up of different motor duties, and the time allocated to each is three minutes (al-kafi 2009, P161).

### -Consistency of motor creativity test:

The researcher established a reliability factor to test motor creativity using the method of application and reapplication of the test, where the test used to measure motor creativity was performed on 30 children and girls from the research community and outside the basic search sample.

**Table 2** It represents stability by calculating the Pearson correlation coefficient between the test of motor innovation and its retest.

motor creativity	Arithmetic average	Standard deviation	Correlation coefficient
Motor originality	2.75-3.20	1.27-1.37	0.81
Motor fluency	21.1-21.55	1.98-1.80	0.70
Motor flexibility	2.3-2.7	1.03-0.90	0.79

Table 02 shows that all calculated correlation coefficients for the variables in question are greater than the scheduled value of 0.51, so we can say that the test of the motor innovation abilities in question is constant, demonstrating the stability of the test as a whole.

### – Weyrck test credibility for motor creativity:

The researcher established the credibility coefficient to test motor creativity using self-credibility, which is equal to the square root of the reliability Coefficient.

**Table 03:** It represents the calculation of the credibility coefficient aiming at motor creativity test

The test	Correlation coefficient	Self-credibility
Motor originality	0.81	0.90
Motor fluency	0.70	0.83
Motor flexibility	0.79	0.88
Total	0.80	0.89

Table 03 shows the high-test credibility coefficient indicating the viability of its application.

#### 5.4 Field procedures

After obtaining the data of the preparatory schoolrooms in primary schools of the first district, affiliated to Department of Education in the Wilaya of Annaba. We moved to all of them, and we talked with the female teachers, the sample was chosen based on the abilities of the school, as well as the requirement that no outside activity be exercised, in order to fine-tune the sample.

- Some cases were excluded and when the forms were collected, others were excluded for age incompatibility (more than 5 and half years), until the study sample reached 62 children and girls.
- Informing female teachers of the scales instructions, time to implement them, and establish a schedule to apply the scale because the sample is fairly large, in addition to the age group (the child must be less than 5 and half years the day of the test). To make sure that the name, the date of birth, school, and date of test were wrote.
- Starting a complete correction of the test, and extracting the criteria and intermediate indicators table for the study environment.

#### 6. Display and discussion of the study results

**Displaying the results related to the general question: Is there a statistically significant relationship between playfulness and the key components of creativity?**

**Table No. 04** It represents the matrix of links between the components of motor creativity and the total value of playfulness.

Aspect	Motor fluency	Motor flexibility	Motor originality	playfulness
Motor fluency	1.00			
Motor flexibility	**0.661	1.00		
Motor originality	**0.710	**0.79	1.00	
Playfulness	**0.847	**0.942	**0.817	1.00

**Note: \*\* represents the link occurrence at 0.0**

The results of the table showed that: there is a strong correlation between the three components of motor creativity and the Barnett playfulness scale 1990, where fluency reached 0.942, which means the positive relationship of playing on motor flexibility, then motor fluency came second with a correlation coefficient of 0.847, while motor originality was 0.817 ,came third.

So the results of this study indicate that a child with a great disposition to playful, communication, and happiness is also physically creative, which means fluency in new and divergent movement patterns or in the production of ideas.

It is particularly more sophisticated in the divergent movement, which is the result of creative and critical thinking, according to Cleland (1994). A child who takes part in creative processes with fluency and flexibility in producing ideas and solutions demonstrates a number of psychological characteristics, such as positive attitude, physical and cognitive high stimulation, disposal in communication, happiness, imagination, curiosity and humor.

This supports the McBride 1992 theory, which viewed fluency and flexibility in kinesthetic response as the ability to generate and illustrate many diverse ideas from previous experiences, and their explanation based on critical changes in the elements of the movement (space, effort and relationship) for planning and final modification (McBride, 1992).

The current study match with a study of Lamyaa Aldiwan, since the complex and indirect mindset helps the child to think in different ways in order to create new patterns of movement that are meant to solve problems through playfulness.

These conclusions also comply with the 1965 Lieberman study, which is the first study to examine the relationship between the divergent thinking abilities (fluency, flexibility, and originality), and each of the five features of individual playfulness, plus the global degree of playfulness. I found that the playfulness relates significantly with the components of the divergent thinking.

## 7. Conclusions and suggestions

The term "playfulness" is generally used in Western literature, as it is linked to several variables with influence such as family type, its standard of living, number of children and age. This makes the results from different cultures adopted as previous studies in this study valuable because of their diversity.

We aimed through our study to find a playfulness relationship with motor creativity, as Christie and Johnson (1983) reviewed interlinked and experimental research from the early 1960s to the 1980s, and found a positive relationship between playfulness and creativity. Lieberman (1977) stressed the importance of playfulness in creative thinking and imagination. Al- aibe (2018) found that participation in informal symbolic play facilitates divergent thinking in children.

The important point, as the current study has shown, is that these two aspects of personality are not only shown, behaved, and related to play and movement, but are already focused on the pre-school stage, where movement is the main road to representation, expression, learning, communication, and development (Mahmoud. 2015).

Clearly, children must have a sense of self-control. Through the creative movement, children can express their feelings and thoughts, as well as acting and communicating with their bodies. This expression, through the body, appeared to be more widespread than speech. In this way, many children can explore experiences that were not accessible for them through words. Motor physical exercise activities provide children with the ability to practice and develop their own creative, dynamic and adventurous abilities (Díaz-Pereira, 2015).

Thus, a well-organized program can contribute not only to the development of motor skills, but also to social and emotional development. The movement, in combination with rhythmic and creative exercises and games, offers a balanced program, like that mentioned by Kraft (1986), which comprises a physical education program that includes creative movement activities, with appropriate teaching, thereby educating children to use their creative abilities by exploring and solving problems.

### Suggestions

- Physical educators must accept the view that every child, like everyone, is by nature creative according to his individual characteristics and current stage of development.
- What is important is the appropriate teaching method (indirect teaching methods: divergent and convergent methods, exploratory method) and the organization of a framework that is tolerant, acceptable, free and safe, and situations necessary for creativity.



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## 6. Appendices

الاسم:			تاريخ الميلاد:		ملاحظة
تاريخ الاختبار:			المؤسسة:		الجنس:
			تماما على ما يبدو	كثيرا على ما يبدو	إلى حد ما على ما يبدو
			قليلا على ما يبدو	على ما يبدو	على الإطلاق على ما يبدو
العفوية الجسمية					
حركات الطفل متناسقة بشكل عام اثناء اللعب					
الطفل نشط بدنيا اثناء اللعب					
يفضل الطفل ان يكون نشطا وليس هادئا في اللعب					
يركض الطفل (يتخطى، يزحف، يقفز) كثيرا اثناء اللعب					
العفوية الاجتماعية					
يستجيب الطفل لنهج الآخرين اثناء اللعب					
يبدأ الطفل باللعب مباشرة مع الآخرين					
يلعب الطفل بشكل تعاوني مع الآخرين					
الطفل مستعدا دوما لمشاركة العابه مع الآخرين					
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يتظاهر الطفل بالحماسة والبهجة اثناء اللعب					
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يغني الطفل ويتحدث اثناء اللعب					
روح الدعابة					
يستمتع الطفل بالمزاح مع الآخرين					
يضايق اصدقاءه بلطف اثناء اللعب معهم					
يحكي الطفل قصصا مضحكة لزملائه					
يضحك الطفل عند سرد القصص المضحكة والنكات					
يحب الطفل التهرج في اللعب ويميل الى التصرف بشكل كوميدي					

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