
THE PERCEPTION ABILITIES AND THEIR RELATIONSHIP WITH MOTOR COORDINATION IN 6-7-YEAR-OLD PRIMARY SCHOOL STUDENTS IN PHYSICAL EDUCATION CLASS

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Abstract:

This study came in order to know the nature of the relationship between some perception abélites and motor coordination among students 6-7 years old in the primary stage in the physical education and sports class. In order to achieve this, we used the descriptive, correlational approach on a sample of 20 students, and we used the Haywood scale.

To measure perception abilities and test motor coordination. Finally, we concluded that there is a strong positive relationship between the level of perception abilities and motor coordination among students 6-7 years old in the physical education and sports class.

Keywords: Motor coordination, perception abélites , partial visual perception , Physical Education

1-Problem Statement:

The progress of nations largely depends on the extent of attention to society and the effectiveness of its programs aimed at maximizing the utilization of human potential. Good preparation for human resources begins in childhood, specifically in the primary school stage, which is a very important phase in a child's upbringing as it is susceptible to various influencing factors. Consequently, it leaves either a positive or negative impact on their future lives. Educators justify with further emphasis that most of the disorders, psychological and emotional illnesses, and motor problems that affect individuals during their lives are due to ignorance and neglect in their upbringing (Abu Samid, 2006, p. 52). This has prompted societies to pay attention to these aspects that have an impact on the fabric of society. Institutes for early childhood education have been established to care for children before school age, that is, before they reach the age of six. Return et al. (1987) indicate that global attention to childhood and primary education is embodied in the "Universal Declaration of Human Rights in 1948 and the Universal Declaration of the Rights of the Child in 1959," issued by the United Nations General Assembly and ratified by world countries. The former emphasized the right of every person to education, while the latter emphasized the relationship between the well-being of the child and the well-being of society, considering education as the right of every child and calling for the development of the child's culture and education according to their abilities and readiness, providing necessary opportunities for play and recreation, directing play and recreation towards educational goals, and helping the child become an active member of society (Mounir bin Matni Al-Otaibi, The Reality of Pre-Primary Education in Member States in the Office (Nabil, 2004, p. 97). Algeria, like other countries, has focused on physical education in the primary

school stage in education. A decision was issued to generalize the practice of physical education class by a specialized teacher in 2023, and specific curricula were adopted that align with the objectives of physical activity during this age group. The objectives of activities, the child's profile, the proposed program, and how to organize the physical space for the primary stage were determined,

After visiting some primary schools and interacting with teachers, we noticed that students, especially those aged 6-7 years, face motor difficulties in learning some basic skills in various sports activities. This can be attributed to several cumulative reasons, including lack of movement and physical activities. At this stage, children tend to move to explore the surrounding world. In order to do so, they need to use basic movements, which are the fundamental skills in their movement. Additionally, they can discover themselves and the environment around them if they can perceive things correctly. After reviewing the curriculum prescribed by the Ministry and the accompanying practical guide, we noticed that it includes a set of competencies and abilities focused on developing the sensory-motor aspect of the child (Habib, 2007, p. 23). It is undeniable that attention to a child's movement at this stage has positive returns in terms of health, physical, psychological, mental, and social aspects. Through physical activities, children can learn how to use parts of their bodies, and through motor behavior and play, they are encouraged to think and prepare their minds for perception and learning. Brain research confirms that children's thinking skills are stimulated when they engage in physical activities. Learning basic motor skills from an early age helps in the rapid development of their motor coordination.

Thus, our research problem crystallized into the following general question:

- Is there a correlation between some cognitive abilities and motor coordination among 6-7-year-old students in the physical education class in primary school?

2-1 General Research Question:

Is there a correlation between some perception abilities and motor coordination among 6-7-year-old primary school students in physical education classes?

2-2 Specific Research Questions:

- Is there a correlation between overall and partial visual perception and motor coordination among 6-7-year-old primary school students in physical education classes?

- Is there a correlation between the ability to recognize body parts and motor coordination among 6-7-year-old primary school students in physical education classes?

- Is there a correlation between the ability to distinguish between the right and left sides and motor coordination among 6-7-year-old primary school students in physical education classes?

3- Study Hypotheses:

3-1 General Hypothesis:

There is a correlation between some perception abilities and motor coordination among 6-7-year-old primary school students in physical education classes.

3-2 Specific Hypotheses:

1. There is a correlation between overall and partial visual perception and motor coordination among 6-7-year-old primary school students in physical education classes.

2. There is a correlation between the ability to recognize body parts and motor coordination among 6-7-year-old primary school students in physical education classes.

3. There is a correlation between the ability to distinguish between the right and left sides and motor coordination among 6-7-year-old primary school students in physical education classes.

4- Research Objectives:

- To understand the nature of the relationship between some cognitive abilities and motor coordination among students.
- To highlight the role of physical education in developing motor perception among students.
- To explain the impact of physical education in enhancing motor coordination among students.
- To understand the role of physical education for elementary school students.
- To emphasize the importance of motor coordination among students.

5- Importance of the Study:

This study aims to examine the reality of physical education among elementary school students and to highlight the importance of motor coordination by understanding the nature of the relationship between cognitive abilities, which are among the most important outcomes that teachers aspire to achieve through employing learning and teaching strategies. It also aims to assist those interested in developing children's motor skills by recognizing the importance of developing coordination as it forms the basic foundation for all complex and simple daily movements that require moving more than one part of the body at the same time. Additionally, it helps improve motor performance and reduces unnecessary or random movements.

6- Survey Study:

This stage represents the first step taken by the researcher to understand the field reality before delving into its details and clarifying any ambiguous points, especially regarding the concepts used, and to identify the various difficulties that the researcher may encounter during the fieldwork of the study. The survey phase was divided into two stages.

6-2- Steps of Conducting the Survey Study:

First Step: After reviewing various references and literature related to the study topic and consulting with some specialists and experts in the field, we finalized the study topic in coordination with the supervising professor on October 12, 2023. This title was then presented to the Scientific Council of the Institute for approval.

Second Step: Preliminary Steps were taken with the aim of:

- Preparing permits and administrative documents to conduct tests on the study sample at Al-Ikhwat Duorouaz Middle School in Madaouaroush District. A formal request was submitted to facilitate the task at the middle school on October 22, 2023, and approval was granted on December 7, 2023.
- Identifying the physical tests used in the research.
- Preparing the documents for the tests and the necessary sports equipment needed to apply the sample tests.

Third Step: To ensure the scientific validity of the tests, the researcher conducted a preliminary survey before starting the actual experiment on a sample of students from the Al-Bashir Al-Ibrahimi Primary School in Ouled Hamla Municipality, Umm Al-Bouaghi. This preliminary study aimed to provide the necessary means and assess the suitability and adaptation of students to the physical tests, as well as the suitability of the tools and devices used.

The preliminary survey was conducted on January 22, 2024, at 1:30 PM on a sample of 10 elementary school students, preparing them for the cognitive abilities test and the motor coordination test.

6-3 Survey Sample:

1- The survey sample consisted of 10 students who were purposefully selected. The selected students underwent the chosen physical tests as follows:

- Pre-test: January 22, 2024
- Post-test: February 12, 2024.

2- The validity and reliability of the test were ensured after analyzing the data, which showed the following results:

7- Methodology Adopted in the Study:

The methodology adopted in our study is the descriptive correlational (associative) method, which is suitable for the nature and problem of the study. It is a type of scientific research method that focuses on explaining the relationship between two or more variables, measuring the degree of correlation between them, and identifying the differences and similarities. It examines the type and magnitude of the relationship between these variables and aims to understand what distinguishes a phenomenon from others.

The descriptive correlational method often relies on understanding relationships through description and careful scientific observation, collecting information using established methods, and scientific tools. The methodology also relies on scientific tools for description and observation. (Abu Nasr, 2009, p. 123)

8-1 Study Population:

Selecting the research sample is crucial as many aspects, such as measurements and outcomes, depend on it.

The study population comprises second-grade elementary school students aged 6-7 years in the Ouled Hamla district.

8-2 Study Sample:

The study sample was selected using cluster random sampling from second-grade elementary school students aged 6-7 years. The sample size was determined to be 20 students after excluding 10 for the pilot study.

8-2-1: Some Characteristics of the Sample:

Table (01): Represents the Age and Gender Characteristics of the Studied Group

Age Gender	6 years	7 years
Females	5	7
Males	3	5

9-1. Haywood Scale for Sensory-Motor Skills in Children aged (5-7) years: (Mohammed, 2004, page 234)

Designed by "Haywood" in 1986 to measure sensory-motor skills in children aged (5-7) years, it was first used in the Saudi environment (Al-Mustafa, 1998), and standardized by Al-Mufti (2000) exclusively in the Iraqi environment, specifically in Nineveh Governorate (Al-Raouda Al-Riyahin), with a reliability coefficient of 85%. However, it has not been previously standardized in the Algerian environment due to the lack of previous studies utilizing this scale.

It consists of (6) items:

1. Size constancy.
2. Visual perception (global and partial).

3. Recognition of body parts.
4. Discrimination between right and left body parts.
5. Balance.
6. Spatial orientation.

In our study, only items (2) and (3) were used, along with item number (4).

9-2. Kinesthetic Compatibility Test:

Regarding the kinesthetic compatibility tests, they are divided into 3 tests:

1. The first test is jumping inside numbered circles, assessing kinesthetic compatibility between the eyes and legs.
2. The second test is passing a tennis ball against a wall for 25 seconds.
3. The third test is jumping rope 5 times.

The participant starts from circle number (2), then moves to circle number (3), then to (4), and so on until circle number (8), aiming to complete the sequence as quickly as possible. The time taken to move through consecutive circles is recorded (Zaalan, 2000, page 67).

9-3- Calculation of Psychometric Properties for Research Tools:

1. Reliability Testing:

Reliability of the tests was calculated by administering them to a sample of 10 students not included in the original research sample. These tests were then re-administered after one week to ensure their consistency.

Table 02: Represents the reliability of the Hiawatha test for sensory-motor abilities.

Sensory-Motor Abilities		Reliability Coefficients
Recognition of Body Parts	Touch your nose	0.82
	Touch your hip (the seat you sit on)	0.84
	Touch your wrist	0.83
	Touch your knee	0.87
	Touch your heels	0.82
	Touch your ears	0.85
	Touch your shoulders	0.83
Differentiating Between Right and Left Body Parts	Touch your left ear	0.87
	Touch your left knee	0.83
	Pick up the pencil with your right hand	0.85
	Is the pencil on the right or left side? (Place the pencil on the right side)	0.84
	Touch the left side of your hip with your right hand	0.86

The table reveals that all Pearson correlation coefficients associated with the test of the ability to identify body parts were positive and close to one, ranging between 0.82 and 0.87. Similarly, the correlation coefficients for the test of the ability to discriminate between right and left body parts were also positive and approached one, ranging between 0.83 and 0.87. This indicates the reliability of the scale.

Table (03) represents the reliability coefficient for the motor coordination.

Motor Coordination Skills	Reliability Coefficient
Hopping inside numbered circles	0.92
Passing a tennis ball against a wall	0.94
Jumping rope	0.89

From the table, it is evident that the Pearson correlation coefficient for the test of hopping inside numbered circles is positive and close to one, with a value of 0.92. Similarly, the Pearson correlation coefficient for the test of passing a tennis ball against a wall is also positive and close to one, with a value of 0.94. This indicates the reliability of both tests. Additionally, the Pearson correlation coefficient for the test of jumping rope is 0.89.

9.3.2.The Validity of the Tests : the square root of the coefficient of stability was used.

Table (04): Represents the validity of the Haywood Scale for Perceptual Motor Abilities

These values indicate the validity of the Haywood Scale for Perceptual Motor Abilities in assessing the specified abilities.

Perceptual Motor Abilities	Validity	
Recognition of Body Parts	Touch your nose.	0.90
	Touch your hip (the seat) where you sit.	0.92
	Touch your wrist.	0.91
	Touch your knee.	0.93
	Touch your heel.	0.90
	Touch your ears.	0.92
	Touch your shoulders.	0.91
Discrimination between Right and Left Body Parts	Touch your left ear.	0.93
	Touch your left knee.	0.91
	Pick up the pencil with your right hand.	0.92
	Is the pencil on the	0.92

	right or left side? (Place the pencil on the right side.)	
	Touch the left side of your hip with your left hand.	0.93

From the table, it is evident that the coefficients of internal consistency reliability, which represent the square root of the coefficient of stability, yielded high positive results approaching one, ranging between 0.90 and 0.93. Similarly, the coefficients of internal consistency reliability for the test of distinguishing between right and left body parts were also high and positive, ranging between 0.91 and 0.93, indicating the self-consistency of the scale.

Table No. (05): Represents the reliability of motor coordination.

Basic Motor Skills	Coefficient of Reliability
Jumping Inside Numbered Circles	0.89
Passing Tennis Ball Against Wall	0.91
Jumping Rope	0.86

From the table, it is evident that the coefficient of self-reliability for the jumping inside numbered circles test yielded high positive results approaching one, with a value of 0.89. Similarly, the coefficient of self-reliability for the tennis ball passing against the wall test was positive and approaching one, with a value of 0.91. Additionally, the jumping rope test showed a coefficient of self-reliability of 0.86, indicating the self-reliability of both tests.

10. Statistical Methods :

Our statistical analysis utilized the **SPSS** software to verify the validity of the hypotheses.

11- Presentation of the Results for Hypothesis 1:

11-1- The hypothesis states:

There is a correlation between overall and partial visual perception and motor coordination among primary school students aged 6-7 years during physical education classes.

Table (06) displays the Pearson correlation coefficient between and motor coordination of the eyes and feet.

	Overall and Partial Visual Perception	
Motor Coordination	Pearson correlation coefficient	0.922
	Significance Level sig. (bilatérale)	0.000
	Sample Size	30

Based on the table above, we observe that the Pearson correlation coefficient between overall and partial visual perception and motor coordination is 0.922, with a significance level of less than 0.05. Additionally, its value is positive and greater than 0.5. Therefore, we can conclude that there is a

strong positive correlation between overall and partial visual perception and motor coordination, thus accepting the hypothesis.

11-2- Presentation of the results of the second hypothesis:

The hypothesis states:

There is a correlation between the ability to recognize body parts and motor coordination among second-grade elementary school students in physical education classes.

Table No. (07) illustrates the Pearson correlation coefficient between the ability to recognize body parts and motor coordination.

		The ability to recognize body parts
motor coordination	Pearson correlation coefficient	0.870
	Significance Level sig. (bilatérale)	0.000
	Sample Size	30

From the previous table, we observe that the Pearson correlation coefficient between the ability to recognize body parts and motor coordination is estimated at 0.870, with a significance level less than 0.05. Additionally, its value is positive and greater than 0.05. Therefore, it can be said that there is a strong positive correlation between the ability to recognize body parts and motor coordination, and thus, the hypothesis is accepted.

11-3- Presentation of the results of the third hypothesis:

The hypothesis states that there is a correlation between the ability to distinguish between left and right body parts and motor coordination among second-grade elementary school students in physical education classes.

Table (08) illustrates the Pearson correlation coefficient between the relationship of the ability to distinguish between left and right body parts and motor coordination.

		The relationship of the ability to distinguish between left and right body parts
Motor Coordination	Pearson correlation coefficient	0,629
	Significance Level sig. (bilatérale)	0.000
	Sample	30

From the previous table, we observe that the Pearson correlation coefficient between flexibility and motor coordination of the eyes and feet is estimated at 0.629, with a significance level less than 0.05. Additionally, its value is positive and greater than 0.05. Therefore, it can be said that there is a moderate positive correlation between the ability to distinguish between left and right body parts and motor coordination, and thus, the hypothesis is accepted.

12- General Conclusions:

Based on the presentation of the answers and the results of the study, which focused on the relationship between some perceptual abilities and motor coordination among primary school students aged 6-7 years in physical education classes, primarily addressing the main hypothesis: "Is there a relationship between some perceptual abilities and motor coordination?"

Drawing on theoretical studies and motor tests related to the variables, several conclusions were reached, including:

3. There is a strong positive correlation between overall and partial visual perception and motor coordination among primary school students aged 6-7 years in physical education classes.
4. There is a strong positive correlation between the ability to recognize body parts and motor coordination among primary school students aged 6-7 years in physical education classes.
5. There is a positive correlation between the ability to distinguish between the right and left sides of the body and motor coordination among primary school students aged 6-7 years in physical education classes.

13- Recommendations:

In light of the study's findings, the researcher suggests the following:

- ❖ Encouraging scientific and experimental research in the field of motor skills development.
- ❖ Conducting a study aimed at identifying sports activities that help enhance perceptual abilities.
- ❖ Giving importance to physical activities during the educational process.
- ❖ Developing basic motor skills for students.
- ❖ Providing the necessary resources and facilities to create an innovative atmosphere within physical education classes.
- ❖ Fostering self-directed motor learning and encouraging new ideas.

14- Future Perspectives of the Study:

The study was conducted to understand the relationship between some perceptual abilities and motor coordination. After analyzing and discussing the results, the researcher gained a comprehensive view of the study's topic and identified the need for further exploration. The idea of expanding the study emerged, aiming to uncover and diagnose the factors influencing the relationship between perceptual abilities and motor coordination among primary school students.

Therefore, in the future, the study intends to explore this topic from different perspectives, including:

- ❖ Conducting similar studies on different samples at various educational levels to enhance motor skills development.
- ❖ Studying sports activities that contribute to the development of motor coordination in physical education classes.
- ❖ Investigating creative movement among students and its impact on motor coordination.
- ❖ Conducting studies to promote motor coordination in children from preschool age to develop their motor skills.
- ❖ Conducting a study to highlight the role of various variables such as environment and school in influencing perceptual abilities.

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