

A Study of the Relationship Between the Level of Physical Self-Perception and Bodily-Kinesthetic Intelligence Among Secondary School Students

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Received: 05/05/2026 ; Accepted: 20/07/2026 ; Published: 30/08/2026

Abstract

This study aimed to identify the levels of physical self-perception and bodily-kinesthetic intelligence among secondary school students, as well as to investigate the relationship between these two variables. The researchers adopted a descriptive methodology due to its suitability for the study's nature. The study sample comprised 100 male and female students. For data collection, the researchers utilized the Physical Self-Perception Profile, consisting of 25 items across 6 dimensions, and the Bodily-Kinesthetic Intelligence Scale, comprising 24 items across 3 dimensions. Ultimately, the researchers concluded that the levels of both physical self-perception and bodily-kinesthetic intelligence were rated as good. Furthermore, the study demonstrated a statistically significant relationship between physical self-perception and bodily-kinesthetic intelligence among secondary school students.

Keywords: Physical self, bodily-kinesthetic intelligence, secondary school students.

Introduction

Secondary education is one of the most critical developmental stages an individual undergoes, characterized by rapid physical, psychological, social, and cognitive changes that directly influence the formation of the student's personality and their attitudes toward themselves and their various potentials. Among the aspects that have garnered researchers' attention in physical education and sports psychology is physical self-perception, considered a primary dimension of self-concept. It reflects the individual's assessment of their physical abilities, physical appearance, and motor competence, influencing their self-confidence and motivation to participate in athletic and educational activities. Numerous studies have indicated that positive physical self-perception contributes to improving psychological and social adjustment and enhances motor performance and athletic achievement among learners (Boujrada, Ben Ashoura, & Tawas, 2016).

Conversely, bodily-kinesthetic intelligence represents one of the multiple intelligences, referring to an individual's ability to skillfully use their body to express ideas and feelings, master motor performance, achieve neuromuscular coordination, and solve problems requiring precision, speed, and balance. This type of intelligence holds particular significance in the school environment, especially during physical education and sports classes, where it contributes to the development of motor and skill capacities and enhances learning through movement and practical experience (Belkada & Ben Zidan, 2022).

Scientific interest in studying the relationship between physical self-perception and bodily-kinesthetic intelligence has increased, based on the premise that a student possessing a high level of awareness of their physical abilities and a positive self-perception is more capable of efficiently utilizing their motor potentials and is more prepared to acquire athletic skills and interact positively with physical activities. In this context, a study by (Rabiei & Alwan, 2022) found a positive correlational relationship between physical self-concept and bodily-kinesthetic intelligence among middle school students, reflecting the integration between the psychological and motor dimensions of the learner's personality.

Despite the growing number of studies addressing these two variables, most have focused on middle school pupils or university students, whereas studies targeting secondary school students remain limited. This is despite the distinctiveness of this stage and its characteristic physical and emotional changes that may affect the student's perception of their physical self and their level of bodily-kinesthetic intelligence. Moreover, this stage serves as an essential foundation for preparing students to continue athletic practice and achieve psychological and physical balance. This necessitates further research to uncover the nature of the relationship between these two variables within the Algerian school environment (Himoud, 2015). Based on the above, this study seeks to identify the relationship between the level of physical self-perception and bodily-kinesthetic intelligence among secondary school students. This aims to enrich the Arab and Algerian literature in sports psychology and physical education and provide scientific indicators that can be utilized in designing educational and sports programs aimed at developing the psychological and motor aspects of students, thereby positively reflecting on their psychological adjustment and their physical and skill performance.

Study Questions

1. 1. What is the level of physical self-esteem among secondary school students?
2. 2. What is the level of bodily-kinesthetic intelligence among secondary school students?
3. 3. Is there a statistically significant relationship between physical self-esteem and bodily-kinesthetic intelligence among secondary school students?

Study Hypotheses

4. 1. The level of physical self-esteem among secondary school students is at a good rating.
5. 2. The level of bodily-kinesthetic intelligence among secondary school students is at a good rating.
6. 3. There is a statistically significant relationship between physical self-esteem and bodily-kinesthetic intelligence among secondary school students.

Study Objectives

7. 1. To identify the level of physical self-esteem among secondary school students.
8. 2. To identify the level of bodily-kinesthetic intelligence among secondary school students.
9. 3. To determine whether there is a statistically significant relationship between physical self-esteem and bodily-kinesthetic intelligence among secondary school students.

Study Terminology

Physical Self: Defined as the athlete's ability and expectation of their latent capabilities through their positive self-understanding of their strengths and weaknesses in a manner that serves to enhance and develop their personality and self-confidence. This results from programmed training built on solid scientific foundations and reinforced by periodic tests that enable the athlete to ascertain their true level based on their perceptions of their physical abilities—such as strength, speed, flexibility, and

endurance—and work on developing them, as it is one of the main axes for learning sports skills in all games (Abdul Wadoud, 2021, p. 84).

Bodily-Kinesthetic Intelligence: It is the athlete's ability to control body movements and use their senses to move various body parts with high skill, sensitivity, and effectiveness in different situations and positions they encounter. It is a developing motor energy, a biological capacity, and the athlete's ability to control various body movements in complex situations, use the body quickly and harmoniously, achieve motor coordination, knowledge, and experience, and create harmony between mind and body (Lahmar, 2024, p. 48).

Previous Studies

- The researchers (Anoud & Nuseibeh, 2023) conducted a study titled "Bodily-Kinesthetic Intelligence among Students of the Faculty of Sports Science at Mutah University." It aimed to identify the level of bodily-kinesthetic intelligence among the faculty's students and reveal differences based on gender, academic year, and university grade variables. The study employed a descriptive survey method and was applied to a sample of 201 male and female students. The study concluded that the level of bodily-kinesthetic intelligence was high, with statistically significant differences attributed to the gender variable in favor of males, and the academic year variable in favor of the third year, while no differences were found attributed to the university grade.
- The researchers (Margaret et al., 2008) conducted a study on physical activity and physical self-concept among adolescents. This study was based on previous research indicating the role physical activity plays in changing the physical self-concept of adolescents, particularly given that this stage is characterized by physical changes. To conduct this study, the researcher measured overall physical self-concept using the Physical Self-Description Questionnaire, an obesity scale, and the Maximum Aerobic Speed test. She implemented a 9-month program consisting of four sessions per week on a sample of 49 adolescent females from a school in the United States. The results of this study revealed a positive direct relationship between physical self-concept and maximum aerobic speed. The study's results also emphasized the importance of physical activity in elevating overall self-concept.

Methodology

The descriptive approach was relied upon due to its suitability to the nature of the study.

Sample

The study sample consisted of 100 male and female secondary school students from Chlef Province, selected randomly.

Study Tools

The study tools were as follows:

10. 1. Physical Self-Perception Profile (ISP 25).
11. 2. Bodily-Kinesthetic Intelligence Scale.

5.1. Physical Self-Perception Profile (ISP 25)

This scale was developed by "Corbin 1980 and Fox 1990" in England, according to the hierarchical and multidimensional theoretical model proposed by "Shavelson" in 1976 (Famose & Florence, 2004, p. 16). The Physical Self-Perception Profile (PSPP) contains 25 items representing four specific levels across four dimensions. It also contains two dimensions for general self-concept and the importance of the physical self.

In this study, the Physical Self-Perception Profile translated into French, known as the Physical Self-Perception Profile according to the importance given to the scale's dimensions, was used. This follows the introduction of the dimension or level of importance that an individual assigns to a domain, dimension, or aspect. This was included to know or estimate the importance each subject attaches to an aspect, following the results of "Harter 1986," which showed that the importance individuals give to various self-concept outcomes can have significant effects and justify differences between individuals in the physical domain or general self-concept.

This scale, modified according to the importance given, contains 25 items measuring six dimensions: general self-concept, perceived physical self-worth, self-concept of sports competence, self-concept of physical appearance, and self-concept of two physical traits (strength and endurance), in addition to the dimension of importance given to the physical aspect (Famose & Florence, 2004, pp. 52-53).

The scale consists of six dimensions:

- General Self-Concept (PGS)
- Perceived Physical Self-Worth (PVP)
- Self-Concept of Sports Competence (PCS)
- Self-Concept of Physical Appearance (PAP)
- Self-Concept of Physical Strength (PQPF)
- Self-Concept of Physical Condition: Endurance (PQPE)

The scale uses a six-point grading system: Never applies to me - Rarely applies to me - Sometimes does not apply to me - Sometimes applies to me - Often applies to me - Always applies to me. The scale contains both positive and negative statements.

5.2. Bodily-Kinesthetic Intelligence Scale (Shafia, 2021, p. 67)

The Bodily-Kinesthetic Intelligence Scale, designed by researcher "Amna Shafia" in 2021, was utilized. The scale consisted of 24 statements divided into 3 dimensions, with each dimension comprising 8 statements:

- First Dimension: Ability to solve problems.
- Second Dimension: Ability to engage in physical and sports activities.
- Third Dimension: Kinesthetic perception ability.

In formulating the statements, the researcher relied on a five-point Likert scale: Never (1), Rarely (2), Sometimes (3), Often (4), Always (5), and all statements were positive.

Statistical Methods

SPSS version 27 was relied upon for the statistical analysis of the data.

Presentation and Discussion of Results

Presentation of the First Hypothesis Results:

Table (1) illustrates the level of physical self-perception among secondary school students.

Scale	Arithmetic Mean	Standard Deviation	Hypothetical Mean	Degree
Physical Self-Perception Profile	106.12	16.36	87.5	High

It is evident from the table above, which represents the level of physical self-perception among secondary school students, that the students exhibit a high level of physical self-perception. The arithmetic mean reached 106.12 with a standard deviation of 16.36, which is greater than the hypothetical mean estimated at 87.5.

Discussion of the First Hypothesis Results:

The results of the first hypothesis showed that the level of physical self-perception among secondary school students was high. The researcher attributes this result to the nature of the age stage the students are going through; secondary education is a stage where adolescents' awareness of their bodies, outward appearance, and physical abilities increases, and they become more concerned with the image they project to others. Therefore, the high level of physical self-perception indicates that the students possess a relatively positive perception of their bodies, motor competence, and ability to practice physical and sports activities.

This result aligns with the study conducted by Nafi Soufiane on educational physical sports activity and some dimensions of the physical self among secondary school adolescents, a field study conducted in some high schools in Algiers on the 15-18 age group. That study addressed the relationship between educational physical sports activity and the realization of some dimensions of the physical self among adolescents, supporting the current finding that school physical sports activity represents a vital domain that helps students perceive their physical and motor abilities positively.

The current study's results also agree with Kasia Bouray's study titled "The Reflection of Practicing Physical and Sports Activities on Physical and Social Self-Esteem among Secondary School Students," published in the Scientific Journal of Physical Education and Sports. That study addressed the impact of practicing physical and sports activities on the physical and social self-esteem of secondary school students, confirming that sports participation contributes to improving physical self-esteem, aligning with the current study's finding of a high level of physical self-perception among students.

Presentation of the Second Hypothesis Results:

Table (2) illustrates the level of bodily-kinesthetic intelligence among secondary school students.

Scale	Arithmetic Mean	Standard Deviation	Hypothetical Mean	Degree
Bodily-Kinesthetic Intelligence Scale	88.00	19.81	72	High

It is evident from the table above, which represents the level of bodily-kinesthetic intelligence among secondary school students, that the students are distinguished by a high level on the bodily-kinesthetic intelligence scale as a whole. The arithmetic mean reached 88.00 with a standard deviation of 19.81, which is greater than the hypothetical mean estimated at 72.

Discussion of the Second Hypothesis Results:

The second hypothesis stipulated that the level of bodily-kinesthetic intelligence among secondary school students is high. The obtained results confirmed the validity of this hypothesis, as it became clear that the sample members enjoy a high level of bodily-kinesthetic intelligence. This result is logical

considering the nature of the secondary school stage, an age characterized by activity, vitality, a desire for movement, and the highlighting of physical and skill abilities.

The high level of bodily-kinesthetic intelligence among students can be explained by the fact that this type of intelligence is linked to an individual's ability to use their body efficiently in expression, performance, balance, coordination, and control of movements. A student at this stage is more capable of understanding their body, controlling their movements, and interacting with various motor situations, especially during physical education and sports classes, which provide multiple opportunities for practice, experimentation, and motor learning.

From the researcher's point of view, the high level of bodily-kinesthetic intelligence among secondary school students is due to several factors, most notably the practice of physical and sports activities within the educational institution, and the motor situations it provides that help the student develop neuromuscular coordination, speed, flexibility, balance, and precision in performance. Furthermore, the nature of the physical education and sports class causes the student to utilize their body continuously, whether in team or individual games, helping to develop their ability to control and appropriately direct their movements.

This result is consistent with Hudhaibi Amer's study titled "Bodily-Kinesthetic Intelligence and its Relationship to Motor Creativity Abilities among Secondary School Students from 16 to 18 Years Old," which addressed bodily-kinesthetic intelligence among secondary students, an age group very close to the current study's sample. That study supports the current finding in that bodily-kinesthetic intelligence is an important variable in explaining a student's capacity for motor performance and creativity in sports situations.

The current finding also agrees with Rabiei Hisham and Alwan Rafiq's study titled "Bodily-Kinesthetic Intelligence and its Relationship to Sports Achievement Motivation in the Physical Education and Sports Class," which found a strong correlational relationship between bodily-kinesthetic intelligence and sports achievement motivation. This supports the explanation of the current result, as high bodily-kinesthetic intelligence can be associated with a heightened desire for achievement and active participation in sports activities.

The study's results also align with Qattawi Mahfouz's study titled "A Cognitive Approach to Determine the Levels of Bodily-Kinesthetic Intelligence among Physical Education and Sports Students in Light of the Gender Variable," which supports the current finding by confirming the importance of practice and athletic training in highlighting and developing bodily-kinesthetic intelligence.

Presentation of the Third Hypothesis Results:

Table (03) illustrates the study of the relationship between physical self-perception and bodily-kinesthetic intelligence among secondary school students.

Study Tools	Arithmetic Mean	Standard Deviation	Pearson Correlation Coefficient	Sig Value
Physical Self Scale	106.12	16.36	0.375**	0.001
Bodily-Kinesthetic	88.00	19.81		

Intelligence Scale				
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****** Significant at the 0.01 level of significance.

Based on the results in the table above, it is evident that there is a statistically significant relationship between the level of physical self-esteem and the level of bodily-kinesthetic intelligence, as the Pearson correlation coefficient reached 0.375, which is significant at the 0.01 level of significance, indicating a statistically significant relationship.

3.1. Discussion of the Hypothesis Results:

The third hypothesis stated that there is a statistically significant relationship between physical self-perception and bodily-kinesthetic intelligence among secondary school students. The obtained results confirmed a statistically significant relationship between the physical self and bodily-kinesthetic intelligence among secondary school students.

This result indicates that a student with a positive perception of their physical self is more capable of controlling their body, coordinating their movements, and efficiently utilizing their physical abilities while engaging in physical and sports activities. Bodily-kinesthetic intelligence is linked to an individual's ability to use their body for expression and performance, control of movements, balance, coordination, flexibility, and precision in motor execution. Consequently, a student's positive perception of their physical self helps them better employ their body and increases their confidence while performing motor skills.

The researcher believes that physical self-perception represents an essential psychological and cognitive foundation that helps the student understand their body and be aware of its potential. A student who sees themselves as physically capable, recognizing their competence in movement and performance, is more ready to experiment with sports skills, more capable of motor learning, and bolder in facing new physical situations. This, in turn, reflects positively on their level of bodily-kinesthetic intelligence.

This result can also be explained through the nature of the physical education and sports class, where the student is exposed to diverse motor situations requiring them to think, act, control movement, and choose the appropriate response. In both team and individual games, the student needs balance, coordination, speed of response, body control, and estimation of distance and direction—all of which are components closely related to bodily-kinesthetic intelligence. When a student is confident in their physical self, they are more capable of effectively employing these abilities.

The current study's results align with Hudhaibi Amer's study titled "Bodily-Kinesthetic Intelligence and its Relationship to Motor Creativity Abilities among Secondary School Students from 16 to 18 Years Old," which confirmed the significance of this variable in explaining motor and skill performance among students in this stage.

Based on the foregoing, the researcher asserts that physical self-perception is a crucial factor in improving bodily-kinesthetic intelligence because it grants the student greater confidence in their physical abilities, makes them more aware of their movements, and enhances their ability to control their body during athletic performance. Furthermore, a student with a positive physical self-image is often more integrated into the physical education and sports class and exhibits a greater desire to learn and practice, facilitating the development of their motor and skill capacities.

Conclusions

12. 1. Physical self-perception among secondary school students is at a good rating.
13. 2. The level of bodily-kinesthetic intelligence among secondary school students is at a good rating.
14. 3. There is a statistically significant relationship between the level of physical self-perception and the level of bodily-kinesthetic intelligence among secondary school students.

Conclusion

In concluding this study, it can be said that the topic of physical self-perception is an important subject in the field of physical education and sports, due to its close connection with the student's personality and their level of confidence in their physical and motor abilities. The secondary education stage represents a sensitive developmental phase where the student's awareness of their body and their image before others increases, and important attitudes toward practicing physical and sports activities are formed.

This study aimed to reveal the level of physical self-perception among secondary school students and to determine its impact on improving some variables related to the motor and sports aspect, represented in the ability to solve problems, the ability to practice physical and sports activities, kinesthetic perception, and bodily-kinesthetic intelligence. Through the obtained results, it became clear that the level of physical self-perception among secondary school students was high. The results also demonstrated a statistically significant relationship between physical self-perception and bodily-kinesthetic intelligence.

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