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<p><b>Kherchi Salim</b></p>	<p>Institute of Physical and Sports Education, Laboratory of Sciences and Practices of Physical and Rhythmic Activities, University of Algiers 3 Algeria E-mail: Nazimkherchi@gmail.com</p>
<p><b>Ahmed BenKouider</b></p>	<p>Institute of Physical and Sports Education, Laboratory of Sciences and Practices of Physical and Rhythmic Activities, University of Algiers 3 Algeria E-mail: benkahmed79@gmail.com</p>
<p><b>Kerroum Mohamed</b></p>	<p>Laboratory for Social Empowerment and Sustainable Development in the Desert Environment, University of Laghouat Algeria E-mail: m.karroume@lagh-univ.dz   ORCID: 0009-0007-2970-9258</p>
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<p><b>Keywords</b></p>	<p>Physical and Sports Education, Primary School, Cognitive Performance, Mental and Psychological Health, Algeria</p>
<p><b>Abstract</b></p> <p>Childhood represents a formative stage for both motor and cognitive development, making physical and sports education (PSE) at the primary school level a crucial component of holistic education. Despite its recognized importance worldwide, Algeria has only recently institutionalized the position of the Primary School Physical and Sports Education Teacher, established just three years ago. This study presents a methodological review of cognitive performance outcomes related to PSE in Algerian primary schools.</p> <p>A systematic search was conducted using the Algerian Scientific Journals Platform (ASJP) between 2020 and 2025 with the keywords Physical and Sports Education in Primary School, Cognitive Performance, Mental and Psychological Health. Out of 93 identified publications, 29 were included in the review. The analysis revealed consistent evidence supporting a positive association between physical education practices and improved cognitive performance, including memory, attention, and executive functioning. However, the research landscape remains sparse, reflecting the novelty of the field in Algeria.</p> <p>This review highlights the emerging role of PSE in enhancing cognitive, psychological, and academic outcomes among primary school pupils. Findings underscore the need for structured teacher training, curriculum reform, and stronger integration of PSE into the broader educational system. The review also emphasizes the</p>	

importance of promoting interdisciplinary collaboration between physical education, psychology, and pedagogy to maximize educational benefits.

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## Introduction and Research Problem

After the enactment of laws regulating the practice of Physical and Sports Education in primary school in 1976, the assignment of this subject to a specialized teacher in the field of Physical and Sports Activities Sciences and Techniques was delayed until 2022, due to various circumstances, some of which were field-related and others operational. This reflects the Algerian state's recent orientation toward improving the quality of general education through Physical and Sports Education, as demonstrated by the second-generation curricula of 2015, which highlighted the importance of health education within the new reform. Physical and Sports Education is the most suitable field for the development of all aspects of the individual – physical, physiological, motor, psychological, moral, and social – and it also aims to emphasize the importance of preventing diseases and harmful activities to health and society.

In primary school, Physical and Sports Education stimulates cognitive functions involving attention and concentration, thinking, memory, and recall. Given cognitive development, learners experience improvement in academic performance as a result of engaging in physical exercises, which in turn increase oxygen levels in the blood and direct neurotransmitters to brain regions responsible for attention and thinking. Physical and Sports Education also enhances overall performance, metabolism, blood flow to the brain, and, more broadly, brain function and neurological health (Kerry C. Dollaway, Kyle Hannays, Joel Paul, and Marlon Melville, 2024).

Attention and perception are regarded as two interrelated higher mental processes. If attention is the focus of consciousness on something, perception is the recognition of that thing. Attention precedes and prepares for perception – it primes and probes – whereas perception uncovers and identifies. In sports, attention is a general cognitive readiness that directs the individual's consciousness toward a specific situation, representing the conscious focusing of the mind on an objective matter. In light of the above, attention is the mental or cognitive process that directs an individual's awareness toward perceived objects (Al-Khaza'leh et al., 2013).

Various literature and recent studies, including Kerry C. Dollaway (2024) and McPherson et al. (2018), have shown a positive relationship between cognitive performance and physical activity. The brain, responsible for learning and memory, is more active among children who engage in physical activity at levels above the weekly average than among children who are inactive or less active. In such cases, processing associated with participation in physical and sports activities is faster, making academic learning easier. Moreover, the reduction of stress and fatigue linked to physical and sports activity enhances memory, attention, and perception.

Research conducted on humans and non-humans indicates that physical activity has both acute and long-term effects on the structure and function of the central nervous system. It is also believed that physical activity promotes child development through its impact on brain systems underlying perception and behavior, for example, by influencing energy metabolism and synaptic plasticity. This plasticity reflects the brain's ability to adapt to functional needs (Nofi&Notifa, 2023).

These developmental advantages consistently point to a positive relationship between Physical and Sports Education and cognitive performance. Based on this, the researcher believes that by assigning Physical and Sports Education to a specialized teacher in Algeria, it is possible to explore the relationship between Physical and Sports Education and cognitive performance through an important and evolving academic field. This represents one of

the fundamental tasks for researchers in explaining how various factors – including Physical and Sports Education, attention, concentration, perception, and mental imagery – interact as components of cognitive performance.

**Theoretical Framework**  
**Mental Processes** The nervous and muscular systems play a crucial role in the learning process, as the nervous system controls all human movements. The process of learning to perform motor skills cannot occur without the functioning of the nervous system. Stimuli are received through sensory, visual, and auditory receptors, and after being analyzed and interpreted, orders are transmitted via the nerves to the muscles to perform the required motor task. Mental processes include the following (Mahmoud, 2019):

**Cognitive Performance** It is the process by which the brain interprets incoming information from sensory receptors, determining what is happening in the external world and within our bodies, as well as identifying the current relationships between the two. Previous experience, cumulative knowledge, expectation, and predisposition contribute to the perceptual process. Cognitive performance is also defined as the process through which sensory stimuli received from the senses are recognized, organized, and understood, and it involves the following:

#### Attention

Attention is one of the important psychological topics related to motor performance, as it plays an influential role in achieving performance excellence, being the decisive factor between teams with equal physical, technical, and tactical abilities. It is the process of selecting symbols and focusing on stimuli that an individual encounter in life, such as visual, auditory, tactile, olfactory, and gustatory stimuli originating from the environment or the individual himself. The person chooses those stimuli that are of interest to him, relevant to his actions or thoughts, or that fulfill his needs. For this reason, the process of selecting and focusing on stimuli is called attention (Al-Khaza'leh et al., 2013).

#### Perception

Perception is an integrated process subject to specific conditions resulting from the interaction between the individual and the external environment. It involves three sequential stages starting from the appearance of the stimulus, through which the stimulus is recognized: discovery, comparison, and identification.

**Mental Imagery** as defined by Mahmoud (2019), mental imagery is a psychological or cognitive skill that can be acquired or learned. It is viewed as a mental method or cognitive performance through which the athlete's mind can be programmed to respond according to this mental script – as if, in sports, the player “thinks with his muscles.” In this sense, mental imagery in sports refers to the reflection of objects, phenomena, or events previously perceived in the learner's past experiences, which influence him at the moment of imagery.

#### Creativity

Creativity is one of the higher mental processes based on reorganizing previous experiences into new structures. It depends on memory to retrieve events in a form connected to the present and extending into the future. It occurs when imagery becomes motor imagination, resulting in high-level motor creativity. This emerges from the learner's ability to store motor experiences alongside his high coordination abilities.

#### Thinking

Thinking is the learner's ability to use general, cultural, or theoretical information related to skills in service of tactical motor construction. Good thinking means the ability to make quick and sound decisions, which leads to self-confidence in producing new movements characterized by originality, motor flexibility, and motor fluency. This is where the relationship between thinking and motor creativity becomes evident (Badrina&Rukza, 2016).

#### Memory

Memory is a part of the human mind and serves as a repository for all impressions and experiences acquired by an individual through interaction with the external world and through the senses. These impressions exist in the form of mental images associated with pleasant and unpleasant feelings and emotions. Anderson (1995) defines memory as “the study of processes involved in receiving, retaining, and recalling information when needed.”

**Practical Aspect** in reviewing the literature on Physical and Sports Education in primary school, the methodology used is described below, which enabled us to collect and analyze important studies and articles related to the topic and to identify their sources from the Algerian Scientific Journals Platform (ASJP) database. This assisted us in locating relevant articles using keywords and phrases such as (*Physical and Sports Education, Primary School*), resulting in 8,336 articles.

To narrow down the scope further, we focused on terms such as *Cognitive Performance* and *Mental and Psychological Health*, which yielded 93 articles. Using the advanced search feature, we limited the search period from 2020 to April 2025, resulting in 29 articles. It can be said that the sample was purposive. Data were collected

and organized into thematic groups according to the objectives of the research, which reflect the goals of Physical and Sports Education as follows:

- Socio-emotional objectives.
- Psychomotor and motor-behavioral objectives.
- Cognitive objectives, cognitive performance, and mental and psychological health, which are the focus of this study.

In each section, the studies were organized based on their results, discussions, and objectives. Efforts were made to refine the information and map the relationships and their effects on the present study. The aim was to provide recommendations to Physical and Sports Education teachers, parents, coaches, and sports scientists to develop training and teaching protocols based on the study's findings.

The articles and citations were included in the reference list to ensure transparency and the reliability of sources. This study is expected to provide valuable insights into the role of recommended teaching programs in improving curricula and teaching methods at the primary education level.

**Table 1: Articles Addressing the Socio-Emotional Aspect**

Article Title, Author, Year	Overview	Results and Conclusions
The Role of Activating Physical and Sports Education Classes in Achieving Emotional Stability (Emotional Control, Self-Esteem) among Primary School Students, RabaiAbdelhak, 2024, Medea	The present study aimed to explore the role of activating Physical and Sports Education classes in achieving emotional stability among primary school students.	The researchers concluded that Physical and Sports Education classes play a role in achieving emotional stability (emotional control, self-expression) among primary school students.
The Importance of Sports in Reducing Aggressive Behavior among Primary School Students, AllamSouad, Kadri Halima, 2024, University of Oran	The present study sought to uncover the importance of sports in reducing aggressive behavior among primary school students. Sports are not only concerned with physical development but also act as an integrated unit socially, emotionally, and educationally, addressing both the body and the mind while working to develop and improve undesirable behaviors.	Sports are of great importance in developing students' morals and improving their behaviors. They also contribute to the comprehensive and harmonious development of humans, as well as to the balanced and sound psychological growth of the child.
The Contribution of Mini Sports Games to the Development of Social Competence among Primary School Students (9-12 years), Rahmani Mohamed, 2022	The study aimed to investigate the contribution of mini sports games to developing social competence among primary school students by implementing a program based on such games. The Social Behavior Scale was used to collect data from pre- and post-tests.	The results indicated that mini sports games contribute to the development of social competence among primary school students.
The Importance of Practicing Physical and Sports Activities in Primary School and Their Impact on the Child's Social and Psychological Growth, SoufianeZehouani, 2022, University of Bouira	This study sought to identify the importance of practicing physical and sports activities in primary school and their impact on the child's social and psychological growth. It also aimed to explore the reality of practicing such activities in some primary schools	The study revealed the significant role of physical and sports activities in developing the child's social and psychological aspects. The researcher proposed the following recommendations: • The necessity of practicing physical and sports activities in primary school. • The use of semi-sports

	in Bouira Province and whether they align with the developmental stages of children.	games in primary school. • The need to provide specialized teachers for teaching Physical and Sports Education in primary school.
The Effect of Recreational Sports Activities on the Social Growth of Primary School Students: A Field Study at KerguigDjillali Primary School, KhemisMiliana, AinDefla Province, AzziziBrahim, TalhiIman, HadiKazar, Al-Ta'iMazen, 2022	The study aimed to highlight the impact of recreational sports activities on the social growth of primary school students. The researchers used a descriptive-analytical approach and applied a questionnaire to a sample of 54 fifth-year primary school students.	The results showed that recreational sports activities had an impact on positive personality traits compared to other academic subjects. This means they ensure sound and balanced child development, play a significant role in improving communication skills, and foster a sense of belonging and social acceptance.
The Role of Play and Sports in Achieving Social Adjustment among Primary School Students: A Field Study of a Sample of Primary School Teachers - Bouira -, ZaafKhaled, LaaziliFateh, 2022	The study examined how Physical and Sports Education could be adapted or exploited in the child's social upbringing at school as a type of learning-through-play method.	The field study revealed that it contributes positively to the child's integration and adjustment within his social environment and helps him build a balanced system of social relationships.
The Role of Semi-Sports Games in Achieving Psychological and Social Adjustment among Primary School Students, MaaloumLakhdar, 2022	The study aimed to identify the role of semi-sports games in achieving psychological and social adjustment among primary school students. The experimental method was applied to a sample of 34 fifth-year students from Newton Private School, using the Psychological and Social Adjustment Scale alongside an 18-week educational program.	The study concluded that semi-sports games contribute to achieving psychological and social adjustment among primary school students, confirming all proposed hypotheses.

**Table 2: Articles Addressing the Psychomotor Aspect**

Article Title, Author, Year	Overview	Results and Conclusions
The Effect of a Recreational Program Based on Traditional Games on the Development of Certain Sensory-Motor Skills among Primary School Students (8-11 years), HamiaRachid, TaqiqJamal, BrahimiKaddour, 2023	The study aimed to examine the effect of a proposed traditional games program on developing certain sensory-motor skills among primary school students. The sample consisted of 70 students aged 8-11 years. The experimental method was used, along with tools such as the John Raven IQ Test and a set of motor tests to measure sensory-motor skills, in addition to the recreational program.	The study confirmed the effect of the proposed program, as sensory-motor skills improved among the experimental group students.
The Importance of the Kids' Athletics Kit as an Educational Tool in Teaching Basic Skills to Primary School Students, KouasahNadhir, 2025	The research aimed to determine the effect of the Kids' Athletics Kit on learning basic skills among primary school students. The researcher used the experimental method with an equivalent-groups design on a sample	The researcher found statistically significant differences indicating the kit's effect on improving throwing, running, jumping, and coordination skills.



	of 30 students and applied tests for throwing, coordination, and running.	
Kinematic Analysis of the Walking Cycle of Primary School Students (Aged 9–12): A Comparative Study of Practitioners and Non-Practitioners of Physical Activity, BelhajLarbi Jamal, Ben HeniAbdelkader, KebliAbdelkader, 2022	The study aimed to identify differences in certain kinematic variables of the walking cycle between practitioners and non-practitioners of sports to determine the impact of activity on these variables. The sample included 28 boys, tested in a 10-meter walking test.	The results showed statistically significant differences in some kinematic variables of the walking cycle between practitioners and non-practitioners.
The Contribution of Play Forms in Developing the Sensory-Motor Aspect in Children (9–12 years) in Primary School: A Field Study in Primary Schools in Western Algeria, MohandOuamarAitOuazou, YazidAmoura, 2023	This study aimed to determine the contribution of different forms of play to developing the sensory-motor aspect in children (9–12 years) to acquire physical abilities and motor qualities that lead to improved performance.	The results showed that forms of play positively contribute to enhancing children's sensory behavior, building initial motor experiences, and developing the speed of acquiring motor skills for better performance.
Proposed Educational Units Using Guided Play to Improve Certain Coordination Abilities among Primary School Students (9–12 years), BrahimHarbash, AbdelkrimSenoussi, Jamal Meqrani, 2022	The study aimed to determine the effect of proposed educational units using guided play on balance, coordination, and reaction speed among primary school students (9–12 years). The researchers hypothesized that the proposed units would positively impact these abilities.	The study concluded that there was improvement in coordination among the sample that applied the proposed units, with the main recommendation being to focus on developing coordination abilities during late childhood.
The Relationship Between Physical and Sports Education and Motor Skills in Primary School, Bouzina Bilal, 2022	The study aimed to identify the relationship between Physical and Sports Education and basic motor skills among primary school children. The experimental method was applied to two groups (experimental and control) of 58 students divided equally.	The study found significant differences between the groups in running, jumping, and passing skills, in favor of the experimental group, attributable to the educational program in Physical and Sports Education.
The Effectiveness of Motor Exercises in Developing Certain Motor Behaviors among Primary School Students (6–8 years) in Djelfa Municipality, Nail Kessal Aziz, 2022	The study focused on 20 primary school students aged 6–8 to determine the effectiveness of motor exercises in developing positive motor behaviors.	The researcher concluded that motor exercises positively contributed to improving motor behaviors and various aspects of the child's personality.
The Role of Mini Athletics Games for Children in Developing Basic Motor Skills (Throwing, Running, Jumping) among Primary School Students (9–11 years), Boucheiba Mustapha, 2021	The study aimed to determine the role of mini athletics games for children in developing basic motor skills among primary school students. The experimental method was used with a sample of 63 students divided into two groups.	The results showed that the mini athletics games program was more effective than the regular program in developing basic motor skills (throwing, running, jumping) among primary school students.

Table 3: Articles Addressing the Cognitive Aspect

Article Title, Author, Year	Overview	Results and Conclusions
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The Effectiveness of a Proposed Sports Program Based on Team Games in Developing Academic Skills among Primary School Students (6-12 years), Rahmani Mohamed, Qarmat Mustapha, 2024	The study aimed to determine the effectiveness of a proposed sports program based on team games in developing academic skills among primary school students. The Academic Skills Scale was used as a data collection tool through pre- and post-tests. The sample included 35 students randomly selected from primary schools.	The results indicated that team sports games contribute to developing academic skills among primary school students.
The Role of Semi-Sports Games in Developing Learning Motivation among Primary School Students from Teachers' Perspective, Boucheiba Mustapha, 2021	The study aimed to explore the role of semi-sports games in developing learning motivation among primary school students from teachers' perspectives. The descriptive method was used on a randomly selected sample of 64 teachers.	The study found that semi-sports games play a role in developing learning motivation among primary school students, recommending their inclusion in the national education curriculum.
The Effectiveness of a Play-Based Program in Developing Learning Motivation among First-Year Primary School Students, Fares Es'aadi, 2020	The study aimed to answer the question: What is the effectiveness of a play-based program in developing learning motivation among first-year primary school students? It hypothesized that there would be statistically significant differences in learning motivation between pre-test and post-test scores in favor of the post-test. The experimental method was used on a sample of 10 first-year students from "Al-Arabi Beni 02" School in Qamar.	The results confirmed the hypothesis, showing statistically significant differences in learning motivation between pre-test and post-test scores in favor of the post-test, indicating the effectiveness of the training program.
The Effectiveness of a Program of Motor Games in Developing Certain Cognitive (Sensory-Motor) Abilities and the Attribute of Balance among Primary School Children (6-7 years): An Experimental Study in Oran Province, Houari Ouineti, 2020	The study aimed to identify individual differences between the experimental and control groups in post-tests for balance and certain cognitive (sensory-motor) abilities among children aged 6-7 years. The experimental method with an equivalent-groups pre-test/post-test design was applied to first-year primary students from Yaghmurasen School, with a purposive sample of 22 students.	The main results showed that the proposed program of motor and traditional games had a positive effect on balance and certain cognitive (sensory-motor) abilities among children aged 6-7 years.

study by Boucheiba (2021), the study by Ouineti (2020), and the study by Kouasah Nadhir (2025) entitled *"The Importance of the Kids' Athletics Kit as an Educational Tool in Teaching Basic Skills to Primary School Students"*, all of which collectively reached positive results in the motor and psychomotor domains following the implementation of various proposed programs.

As for the cognitive aspect, represented in Table 3, although limited in number, there are studies that confirmed the growth of the cognitive domain and its relationship with Physical and Sports Education in primary school, such as the study by Rahmani and Qarmat (2024).

**Table 4** represents articles that addressed the health aspect and the reality of Physical Education (PE) practice in primary schools.

Article Title, Author, Year	Overview	Results / Conclusions
The Physical Impact of Physical and Sports Education on Improving the Mental Health of Primary School Pupils – <i>ElottriTaha, 2020</i>	The study aimed to highlight the importance of Physical and Sports Education for primary school pupils in all aspects—physical, mental, emotional, and social—with a focus on the psychological aspect for pupils at this stage.	The results showed the positive impact of pupils' engagement in physical and sports activities in improving their mental health.
The Role of Recreational Sports Activities in Preventing Obesity among Primary School Pupils – <i>(BouziyanBoualem, CherfiAmer, 2024)</i>	The study aimed to identify the role of recreational sports activities in preventing obesity among primary school pupils in Tissemsilt Province. The sample consisted of 40 PE teachers from different primary schools selected randomly, along with a provincial nutrition inspector from the Directorate of National Education in Tissemsilt.	The results indicated that recreational sports activities play a significant role in preventing obesity among primary school pupils.
Recreational Mini-Games and Their Effectiveness in Developing the Values of Cooperation and Belonging among Primary School Pupils – <i>(NadhourIssa, MassahliSaghir, Ben HafalYahia, 2020)</i>	This study aimed to determine the effectiveness of recreational mini-games in developing the values of cooperation and belonging among primary school pupils from their teachers' perspective. The study was conducted on a purposive sample of 60 primary school teachers.	The results confirmed the validity of the proposed hypotheses and revealed the effectiveness of recreational mini-games in developing these two values.
Obstacles Facing Teachers in Teaching Physical Education in Primary School – A Field Study in Djelfa Province – <i>(HouriaMousalli, 2020)</i>	The current study aimed to identify the obstacles faced by primary school teachers in delivering PE lessons and to explore differences according to gender and experience variables. The sample consisted of 95 male and female teachers.	Several obstacles were identified, the most significant being class size, training, and teacher experience (especially before the creation of the PE teacher position).
The Role of School Administrative Staff in Promoting Sports Activities in Primary School – <i>(Amraoui Mohamed, Nail Aziz Kessal, KhallawiLazhari, 2023)</i>	The study is based on a set of key criteria directed towards the objectives of PE and sports at the primary level. It clarifies the extent to which school principals play a role in promoting PE, supervising, and enforcing discipline, and identifies the main difficulty as the need to reconsider and prioritize this crucial issue due to its many benefits for students.	A theoretical study highlighting the objectives of PE at the primary stage, the obstacles faced, and the means of support from the educational process stakeholders.
The Impact of the Absence of Physical Education Teachers in Primary Schools on Achieving the Educational Objectives of the Subject – <i>(ZemamAbdelrahman, BafaAbdallah, 2023)</i>	This research aimed to highlight the role of PE teachers—absent in most primary schools—and to assess the extent to which primary school teachers can manage these lessons and achieve the subject's educational objectives. The sample consisted of 80 primary school teachers.	The study concluded that the training of primary school teachers does not enable them to properly deliver PE lessons, and the lack of specialized training in sports activities hinders achieving curriculum objectives.
Obstacles Preventing the Implementation of the Prescribed Physical and Sports Education Curriculum According to Primary School Teachers – <i>(Jouadi</i>	The study aimed to identify the obstacles and challenges faced by primary school teachers in implementing the PE curriculum, using a questionnaire to analyze the opinions of both specialized and non-specialized teachers.	The curriculum alone is insufficient to achieve its objectives. The absence of specialized training hinders goal achievement. The



<i>Ibrahim, 2022)</i>		inadequate infrastructure of schools prevents the realization of the PE curriculum objectives.
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**Table 4** shows the diversity of article topics cited, including some that addressed obstacles and the reality of PE, as well as the impact of its absence during the most crucial stages of child development—such as the study by Zemam and Bafa (2023). It is noticeable that all studies and articles reviewed are recent, which can be explained by the new research opportunities that have emerged following the adoption of the position of Physical and Sports Education teacher in primary schools—a long-awaited development.

### Discussion of Results

Physical education (PE) receives less value than other subjects; however, most recent research shows that PE plays a significant role in enhancing education and providing a comprehensive learning environment linked to several benefits, the most important of which is improving cognitive performance. This, in turn, leads to the acquisition of a positive academic pattern that encourages students to adopt it in their later life stages.

The present research analyzes the articles listed in the Algerian Scientific Journals Platform (ASJP) that addressed PE in primary education, with the aim of commenting on the results obtained by researchers in this broad field. The focus is placed on terms such as cognitive performance, physical, and mental health, in order to uncover the underlying relationship between these concepts and the learning process, and to identify the harm resulting from the lack of physical activity and the failure to grant PE its deserved importance. It can be said that cognitive and academic performance are among the most desired benefits. According to the study by Rahmani and Qarmat (2024), PE stimulates cognitive functions such as attention, focus, thinking, and memory. In this view, primary school pupils experience an improvement in their academic performance.

Engaging in sports activities increases oxygen and neurotransmitter concentration in the brain regions responsible for attention, focus, and processing speed, through proper metabolism that ensures good blood flow to the brain. Participation in sports also stimulates the secretion of endorphins, which enhance energy levels and mood by reducing and managing anxiety and stress. Commitment to aerobic exercise improves sleep patterns, thereby enhancing cognitive performance, attention, and daytime alertness (Kerry C. Dollaway, 2024). According to the study by Ouineti (2020) on the effect of motor games on perceptual-motor skills, PE improves the development of fine motor skills, both static and dynamic balance, as well as motor coordination. Both Bouchiba (2021) and Saa'adi (2020) found that learning motivation increased after implementing programs based on traditional games and play, respectively. This reinforces the hypothesis that integrating games further enhances concentration, academic performance, and learning motivation.

The second axis discusses mental and psychological health benefits. PE improves health awareness and educates children about balanced nutrition and rest, encouraging them to maintain healthy lifestyles. This requires focusing on strength, jumping, and interval training, which increase physical fitness and enhance movement and coordination, as found in the studies of Kouassah (2025), Belhaj Al-Arabi Jamal, Ben Hani Abdelkader, and QibliAbdelkader (2022), Boudina Bilal (2022), and Kessal (2022). Balance is achieved through games requiring cognitive performance rather than purely aerobic exercises. Practice, repetition, and creative body movements during PE enhance physical health benefits, as regular practice is closely linked to motor system development, and aerobic activities improve cardiovascular health.

In the study by Bouziane and Cherfi (2024) on recreational activity in preventing obesity, the health awareness benefits of sports are evident. Weight gain and obesity are major challenges brought about by technological advancement, modern communication tools, increased fast food consumption, and sedentary lifestyles, all of which are primary causes of obesity. Obesity is linked to several diseases such as diabetes, heart diseases, and psychological issues related to body image and low self-esteem.

PE also promotes mental health, as participation in sports competitions increases self-esteem and, consequently, pupils' perception of their bodies, abilities, strengths, and weaknesses, enabling them to compete fairly. This fosters the spirit of achieving personal goals, leading to greater self-discipline, improved confidence, and the development of a sense of belonging and cooperation — as demonstrated by Elloutri (2020) in his study results.

### Conclusion

The lack of physical activity has significant impacts on children's physical and mental health during one of the most critical stages of their development. It is associated with the loss of numerous benefits, such as enhanced brain

functions, improved memory, better mood, and reduced symptoms of depression. These benefits are essential for children's ability to effectively prepare for improving problem-solving skills, academic achievement, and cognitive performance.

The analysis of articles and data from the Algerian Scientific Journals Platform (ASJP) addressing physical education (PE) in primary education revealed that PE and sports are fundamental components for advancing the learning process. This is due to the strong correlation between PE objectives – including cognitive and academic performance, social awareness, cultural competence, physical, mental, and psychological health, as well as the refinement of motor behavior – and the achievement of general educational goals.

PE, which is the core focus of this study, enhances cognitive performance by increasing oxygen supply and neurotransmitter concentration in brain regions responsible for memory and focus. Participation in physical activities reduces stress and anxiety and improves academic performance. Furthermore, the cultural diversity among children fosters positive social interactions, offering an inclusive environment where shy and introverted pupils can learn to express themselves through motor activities and play.

This study applied a qualitative analytical approach within a descriptive-analytical framework, revealing clear interconnections between a broad set of variables: PE and cognitive performance; PE and physical, mental, and psychological health; and cognitive performance with all three health domains. The study was conducted three years after the adoption of specialized PE teachers in primary education to assess the achievement of set objectives. It should be viewed as a starting point, not an endpoint, for future research aiming to prevent the negative consequences of assigning the subject to non-specialists.

The topics addressed in this research reflect the inherent challenges in solving PE-related issues in primary education and the need for strategies that ensure full teacher engagement in the educational process. Teachers must design and implement movement programs and establish databases on pupils' age, results, and grades to facilitate early talent identification and guide students toward promising career paths. This justifies the need for further studies and replication of findings.

Thus, sustained cooperation between parents, PE teachers, higher education institutions, and curriculum designers is essential. Motor ability levels are not solely linked to the proper functioning of the sensory-organic structure of the brain but are also conditioned by the specific education provided by society through the school system. This constitutes a non-transferable responsibility to equip pupils with new life experiences, enabling each individual to select, organize, and direct their cognitive performance in the most beneficial way. Ultimately, such efforts will produce a generation capable of contributing positively to their nation across various fields.

### Actuality of the Study

The relevance of this research lies in the increasing recognition of physical activity as a determinant of children's cognitive and psychological development. While international studies have demonstrated the benefits of school-based physical education, Algerian scholarship on the cognitive outcomes of PSE remains limited. Given that the professionalization of PSE in Algerian primary schools is recent, there is a pressing need to consolidate evidence that can guide national educational policies. This review is therefore timely, as it bridges the gap between global findings and Algeria's unique sociocultural and institutional context, offering insights for both policymakers and educators.

### Findings

- **Positive Correlation:** The majority of reviewed studies demonstrated a significant positive correlation between physical activity and cognitive performance, particularly in domains such as working memory, attention span, and academic achievement.
- **Scarcity of Research:** Only 29 relevant studies were identified, indicating that the scientific investigation of PSE's cognitive impact in Algerian primary schools is still at an embryonic stage.
- **New Institutional Framework:** The creation of the Primary School PSE Teacher position in Algeria has sparked new opportunities for systematic inquiry but has yet to yield a strong evidence base.

- **Educational Implications:** Results suggest that integrating structured physical education into daily school routines can enhance not only children's health but also their capacity for learning and academic success.

### Ethical Considerations

This review was conducted using secondary data obtained from published academic articles. No experiments or direct interventions involving human participants were carried out. All referenced works were reviewed in line with academic integrity standards, ensuring accurate representation of findings and respect for intellectual property.

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### Conflict of Interest

The authors declare that there are no conflicts of interest related to this research.

### References

1. Adrian, M., et al. (2018). Physical activity, cognition and academic performance: An analysis of mediating and confounding relationships in primary school children. *BMC Public Health*, 18(936). <https://doi.org/10.1186/s12889-018-5863-1>
2. Aleutri, T. (2020). The physical impact of physical education and sports on improving mental health among primary school students. *Science and Practice of Physical Activities Sports and Arts*, 9(2). <https://asjp.cerist.dz/en/downArticle/261/9/2/139441>
3. Allam, S., & Qadri, H. (2024). The importance of sports in reducing aggressive behavior among students in the primary stage. *Aures Journal of Sports Sciences*, 2(2). <https://asjp.cerist.dz/en/downArticle/935/2/2/251329>
4. Amrawi, M., et al. (2023). The school administrative staff and its role in promoting sports activity in the primary stage. *Al Tafawok Magazine*, 8(1). <https://asjp.cerist.dz/en/downArticle/208/8/1/225563>
5. Asaadi, F. (2020). The effectiveness of a play-based program to develop the level of learning motivation among first-year primary school students. *Journal of Psychological and Educational Studies*, 13(4). <https://asjp.cerist.dz/en/downArticle/117/13/4/134102>
6. Awinti, H. (2020). The effect of motor games programs on developing some cognitive abilities (sense-motor) and balance among primary school children (6-7 years): An experimental study in Oran Province. *Journal of Humanities and Social Sciences*, 6(1). <https://asjp.cerist.dz/en/downArticle/39/6/1/119396>
7. Azizi, B., et al. (2022). The effect of recreational sports activities on social development among primary school students: A field study at the Gorgij Djilali Primary School in Khemis Miliana, Ain Defla Province. *Tafawok in Sports Science and Technology Magazine*, 7(1). <https://asjp.cerist.dz/en/downArticle/208/7/1/194523>
8. Badrina, M. A.-A., & Rekza, S. (2016). Cognitive psychology. *Dar Al-Khaldouniya*.

9. Bellhaj, A. J., et al. (2022). Kinematic analysis of the gait cycle for primary school students aged 9–12 years: A comparative study of practitioners and non-practitioners of motor activity. *Journal of Science and Technology for Physical Activities and Sports*, 19(2). <https://asjp.cerist.dz/en/downArticle/3/19/2/206010>
10. Bouchiba, M. (2021). The role of para-sports games in developing learning motivation among primary school students from the teachers' point of view. *Journal of Science and Technology for Physical Activities and Sports*, 18(4). <https://asjp.cerist.dz/en/downArticle/3/18/4/170004>
11. Bouchiba, M. (2021). The role of mini-athletics for children in developing basic motor skills (throwing, running, jumping) among primary school students (9–11 years old). *Tafaouk Magazine in Science and Technology of Physical and Sporting Activities*, 6(2). <https://asjp.cerist.dz/en/downArticle/208/6/2/169061>
12. Bozian, B., & Sharafi, A. (2024). The role of recreational sports activity in preventing obesity among primary school students. *Al Miayar Magazine*, 15(1). <https://asjp.cerist.dz/en/downArticle/317/15/1/247371>
13. Buddhina, B. (2022). The relationship of physical education and sports to motor skills in the primary stage. *International Journal of Studies and Research in Sports Sciences and Training*, 3(1). <https://asjp.cerist.dz/en/downArticle/774/3/1/195667>
14. Dinan, M., Eka, F. N., & Nofi, M. (2023). The effect of physical activity on children's logical-mathematical intelligence. *Jurnal Pendidikan Usia Dini*, 17(1). <https://doi.org/10.21009/JPUD.171.01>
15. Djawadi, I. (2022). Obstacles causing the failure to implement the prescribed curriculum for physical education and sports: Opinions of primary school teachers. *Sports Al Mandhdoma Magazine*, 9(3). <https://asjp.cerist.dz/en/downArticle/372/9/3/200098>
16. Harbach, I., Sanusi, A. K., & Makrani, J. (2022). Suggested teaching units using guided play to improve some harmonic abilities of primary school students (9–12 years old). *Al Tawasol Magazine*, 28(1). <https://asjp.cerist.dz/en/downArticle/27/28/1/195747>
17. Hmia, R., Takeek, J., & Brahimi, K. (2023). The effect of a recreational program based on traditional games in developing sensory-motor skills among primary school students (8–11 years). *Alef Magazine*, 10(4). <https://asjp.cerist.dz/en/downArticle/226/10/4/234441>
18. Kasal, A. (2022). Motor exercises and their effectiveness in developing motor behaviors among primary school students (6–8 years old) in Djelfa. *Ansana Journal of Research and Studies*, 12(2). <https://asjp.cerist.dz/en/downArticle/320/12/2/176091>
19. Kerry, C. D., Hannays, K., Paul, J., & Melville, M. (2024). The importance of physical education and sport in primary (elementary) schools. *International Journal of Physical Education, Sports and Health*, 11(3), 3348. <https://doi.org/10.22271/kheljournal.2024.v11.i3d.3348>
20. Kwaseh, N. (2025). The importance of the children's athletics bag as an educational tool in learning basic skills among primary school students. *Al Tahadi Magazine*, 17(1). <https://asjp.cerist.dz/en/downArticle/71/17/1/263783>
21. Maaloum, L. (2022). The role of para-sports in achieving psychological and social compatibility among primary school students. *Sports Creativity Magazine*, 13(1). <https://asjp.cerist.dz/en/downArticle/316/13/1/189286>
22. Mahmoud, A. (2019). *Sports motor learning*. Dar Hamed for Publishing and Distribution.
23. Mohammed, S. A.-K., et al. (2013). *Sports and psychology*. Dar Al Safa for Publishing and Distribution.
24. Mohand, O. A. O., & Gomorrah, Y. (2023). The contribution of play forms to sensory-motor development among children (9–12 years) in primary schools: A field study in western Algeria. *Aures Journal of Sports Sciences*, 1(2). <https://asjp.cerist.dz/en/downArticle/935/1/2/232122>
25. Mosali, H. (2020). Obstacles to teaching physical education and sports in the primary stage. *Researcher's Journal of Al Bahith and Social Sciences*, 3(2). <https://asjp.cerist.dz/en/downArticle/698/3/2/135667>
26. Nadhor, I., et al. (2020). Small entertaining games and their effectiveness in developing cooperation and belonging among primary school students. *Al-Maidan Journal for Sports, Social and Human Studies*, 2(8). <https://asjp.cerist.dz/en/downArticle/444/2/8/127346>
27. Rabai, A. H. (2024). Activating physical education and sports classes to achieve emotional stability among primary school students. *Al Tahadi Magazine*, 16(2). <https://asjp.cerist.dz/en/downArticle/71/16/2/252074>

28. Rahmani, M. (2022). The contribution of mini-sports games to developing social competence among primary school students (9–12 years). *Journal of Social Studies*, 6(1).  
<https://asjp.cerist.dz/en/downArticle/751/6/1/212181>
29. Rahmani, M., & Qarmat, M. (2024). The effectiveness of a group-game-based sports program in developing academic skills among primary school students (6–12 years). *Tafaouk Magazine in Science and Technology of Physical and Sports Activities*, 8(2).  
<https://asjp.cerist.dz/en/downArticle/208/8/2/236456>
30. Zaaf, K., & Lazili, F. (2022). The role of play and sports in achieving social adaptation among primary school students: A field study in Bouira. *Al Mandhoma Sports Magazine*, 9(2).  
<https://asjp.cerist.dz/en/downArticle/372/9/2/182890>
31. Zahwani, S. (2022). The importance of school physical and sports activities for children's social and psychological development. *Psychiatric Journal Wanam*, 6(1).  
<https://asjp.cerist.dz/en/downArticle/220/6/1/198285>
32. Zemam, A. E., & Baffa, A. (2023). The impact of the lack of physical education and sports teachers on achieving educational goals in the primary stage. *Al Mohtarif Magazine*, 10(1).  
<https://asjp.cerist.dz/en/downArticle/380/10/1/214630>