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The impact of the cognitive dimensions of the physical education and sports teacher on developing sports and health culture among first-year secondary students

Mohamed Larachi [1], **Ali Zeraoula** [2], and **Ouyhia Nasr** [3]

[1] University of Algiers 03, Algeria, Email: larachi87@gmail.com
[2] University of Algiers 03, Algeria, Email: dr.alizeraoula@gmail.com
[3] University of Khemis Miliana, Algeria. Email: ouyhia.nasr@gmail.com

Abstract---The study aimed to identify the impact of the cognitive level of specialized physical education teachers on improving the health cultural level of students? The descriptive method was used, employing two instruments: a questionnaire and a cognitive dimensions scale, applied to a sample of 120 individuals. The study concluded that teachers contribute to the development of sports and health culture. It also recommended strengthening and updating teachers' cognitive background and preparing a book that clarifies the cognitive aspects that should be taught to students?

Keywords---Cognitive Dimensions, Teacher, Sports and Health.

Introduction

Scientific educational institutions play a fundamental role in disseminating levels of knowledge and conveying the outcomes of modern scientific advancements across various fields, particularly those related to the study of sports sciences. This enables specialists in this domain to acquire advanced levels of knowledge and deepen their understanding of areas connected to movement, training, and their related aspects such as injuries, nutrition, and the balance and regulation of positive physical activity. This, in turn, is reflected in professional practice, especially among physical education and sports teachers, who play a major role in raising the general level of sports knowledge associated with different sports disciplines.

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It represents the appropriate amount of knowledge required to prepare individuals for life in terms of scientific knowledge and practical skills (MOHAMED, 2011). In addition, the effective contribution of the scientific and cultural level to enhancing the learner's cognitive level plays a role in correcting prior knowledge, ideas, and preconceived judgments based on speculation, doubt, and uncertainty. The teacher has a crucial role in correction and interpretation and is responsible for building and guiding thinking (Hussein & Maher, 2013, p. 15).

Performance is not limited to sports knowledge and technical aspects and what is related to them; rather, it extends to broader dimensions of general culture and various fields of life. Sports culture is closely linked to general culture and is related to both physical and intellectual aspects (chabane, 2022, p. 267). Helping learners acquire accurate information related to sports practice is one of the essential tasks in raising awareness levels concerning sports culture. A student who possesses a broad culture in the field of health has the ability to obtain, process, and understand the basic information necessary to make appropriate health decisions and the competence to use such information and services in order to promote health (Education, 2014, p. 5).

It is common to hear students expressing ideas about taking medications to strengthen muscles, or performing various movements to develop certain abilities and improve performance. Therefore, it is essential for physical education teachers to work on improving sports and health culture. In an attempt to address the problem of the absence of a well-structured plan within educational curricula concerning this aspect, the effective role played today by the educator in shaping cultural and cognitive orientations related to various fields of life becomes evident.

Physical education and sports specialists convey a message characterized by particularity in their interaction with students. Their role extends beyond that of an instructor to that of a mentor and even a friend who shares moments of enjoyment and recreation with students while introducing them to various forms of physical and motor activities. However, they cannot fully perform this role unless they possess broad cognitive dimensions that include knowledge of psychology and sociology, sports training, motor learning, and sports injuries. Such knowledge enables them to contribute to equipping students with the tools needed to build strong personalities and to dispel myths related to sports.
It is often believed, for example, that exercising in hot weather helps reduce weight, whereas it may actually lead to dehydration. In another example, during recreational or competitive sports practice, individuals may sustain injuries, and their peers may attempt first aid procedures that could worsen the injury.

Students frequently perceive physical education as merely an additional class within the school curriculum with no real benefit, or as a period for entertainment detached from science and knowledge. These examples, among others, place the responsibility on the physical education teacher to correct such misconceptions and convey the educational message effectively.
Accordingly, the following general research question is posed:
Do the cognitive dimensions of the physical education and sports teacher play a role in developing sports and health culture among first-year secondary school students?
To address this problem, two sub-questions are proposed:

- What is the level of students' sports and health culture?
- Does the physical education teacher play a role in developing students' health culture?

General Hypothesis:
The cognitive dimensions of the physical education and sports teacher play a role in developing sports and health culture among first-year secondary school students.

Sub-Hypotheses:

- First-year secondary school students possess a certain level of sports culture.
- The physical education teacher plays a role in developing students' health culture.

Research Objectives:

- To highlight the role played by the physical education teacher in strengthening students' knowledge in the sports domain.
- To emphasize the importance of sound cognitive construction related to health and its relationship to individuals' safety.
- To demonstrate the importance of improving teachers' cognitive competence and its relationship to increasing students' interest in health.

Significance of the Research:

This study is important as it examines the relationship between the cognitive background of physical education teachers and their role in fostering a sports culture among secondary school students that emphasizes correct and safe practice. It seeks to promote positive attitudes toward all aspects of proper sports participation.

Previous Studies:

- **(Ben Smisha, 2019)**:
  This study investigated individual differences in cognitive achievement among a sample of 80 participants using the descriptive method and a "cognitive" test. The results showed significant differences in cognitive achievement among physical education teachers depending on their years of experience. The study recommended organizing professional development and training courses for teachers.
- **(NASIR, 2020):**
  This study aimed to determine the level of performance-related educational competencies required for physical education teachers and their relationship to teachers' professional attitudes and students' psychological satisfaction. Using a descriptive approach with a sample of 16 teachers, the study found that teachers possessed a high level of educational competencies, with no statistically significant differences due to years of experience or academic qualification.
- **(Guy Bertrand, 2018) – *Pratiques d'enseignement et théories d'apprentissage des enseignants d'éducation physique au CÉGEP*:**
  The study focused on describing the theoretical and cognitive backgrounds, concepts, and teaching practices of physical education teachers. Using direct observation, it was found that teachers mainly rely on direct instruction while occasionally applying cognitive theory to convey sports-related knowledge.
- (**Marjorie Maugendre, 2008**) **– *Comportement de santé et motivation sportive chez les adolescents*:**
  This study examined factors affecting adolescents' health issues by exploring five areas: intrinsic and extrinsic sports motivation, and achievement goals (mastery, approach, and avoidance). A model was developed to assess the effect of these variables on adolescents' use of psychoactive substances over twenty months. Conducted with 526 adolescents aged 12–24, the study highlighted the essential role of sports motivation and achievement goals in influencing adolescents' behavioral and health outcomes.

Discussion of Previous Studies:

Findings from previous research indicate significant variations in the cognitive levels of physical education teachers, depending on individual interests and breadth of knowledge. Teachers' educational competencies are linked to their professional attitudes and students' psychological satisfaction, which

can either enhance or reduce learning motivation. Furthermore, the teaching approach—whether direct, behavioral, or receptive—affects students' cognitive development and their ability to acquire knowledge.

Thus, the present study aims to explore the impact of the cognitive dimensions of physical education teachers on improving students' health culture, including individual and team sports performance, handling sports injuries, and preventing the use of drugs and performance-enhancing substances.

Definition of Research Terms and Concepts:

- **Cognitive Dimensions:**
  The concept of cognitive dimensions relates to the total cognitive knowledge possessed by the physical education and sports teacher, which they received either within the framework of university training or through professional experience. The cognitive dimension includes knowledge and attitudes related to things (DARPY & VOLLE, 2003).
- **Secondary Stage:**
  A stage of study that precedes the university stage, also referred to as the adolescence stage.
- **Sports and Health Culture:**
  "Practicing sports is one of the manifestations of physical culture, as culture expresses all refined behaviors accepted by society, which are transmitted among its members in the form of symbols. Culture refers to everything that the community can achieve, including language, science, religion…" (Messaad, 1988).
- It includes a set of acquisitions in the form of information, knowledge, or sports behaviors through regular practice of physical activities for health or recreational purposes.

Research Procedures:

- **Method:**
  The descriptive method was used.
- **Research Variables:**
  - Independent variable: Cognitive dimensions
  - Dependent variable: Sports culture
- **Research Population:**
  Definition: By the research population, we mean all elements of the phenomenon that the researcher studies, but the researcher cannot study all members of the population. The research population consisted of first-year secondary students, totaling 120 students.
- **Study Sample:**
  Selecting a representative sample, which was chosen randomly from the population.
- **Research Fields:**
  - **Spatial Field:** The study was conducted in an Algerian educational institution.
  - **Temporal Field:** The study was carried out during November and December, consisting of selecting the research topic and starting field procedures.

Research Tools:

- **Research Instruments:**

1. **Sports Culture Scale / Questionnaire:**
   Prepared and designed by Akkah Suleiman Al-Houri and Taha Said, it includes 27 items distributed across two components:

- **First Component: Inputs of Sports Culture:**
  1. **General and material inputs of sports culture:** Items 1, 4, 7, 12, 13, 15, 16, 24
  2. **Scientific, technical, and cultural inputs:** Items 2, 3, 8, 15, 18, 19, 21, 23, 25, 27
- **Second Component: Outputs of Sports Culture:** Items 5, 6, 9, 11, 14, 17, 20, 22, 26
- The scale included negative statements: 3, 9, 12, 15, 16, 18, 21, 27; the remaining statements are positive.

Scoring Method:
Three points are given for "Agree," 2 points for "Sometimes Agree," and 1 point for "Disagree," then the scores of each component are summed.

2. **Questionnaire:**
   It consists of 8 questions focused on the role of visual media in motivating sports practice.

Validity and Reliability of Research Tools:

- **Validity:**
  The validity of the scale was ensured by relying on expert judgment to verify the clarity of the statements for the respondents.
- **Reliability:**
  The reliability rate reached 0.90, which is considered high, (Aroui, 2014, p. 29).

Statistical Methods:

- Percentage (%)
- Chi-square test: $\chi 2=\sum(O-E)2E\chi^2 = \sum \frac{(O - E)^2}{E}\chi 2=\sum E(O-E)2$ (Observed minus Expected squared divided by Expected)

Discussion and Analysis of Results:

First Hypothesis:

- First-year secondary students possess a certain level of sports culture.

Axis One: Component One – Inputs of Sports Culture

1. General and Material Inputs of Sports Culture

Sample	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**Total**
Observed OOO	**13**	**08**	**13**	**12**	**09**	**08**	**13**	**12**	**12**	**11**	**13**	**13**	**137**
Expected EEE	**11.41**	**…**	**…**	**…**	**…**	**…**	**…**	**…**	**…**	**…**	**…**	**…**	**137**
$\chi 2\chi^2$	**0.22**	**1**	**0.22**	**0.03**	**0.5**	**1**	**0.22**	**0.03**	**0.03**	**1**	**0.22**	**0.22**	**3**

From the table, we find that the **tabulated = 19.68** is greater than the **calculated = 3** and the **degree of freedom df = 11** at the **significance level**, and it is a value **not significant statistically**.

Axis One – Second Part: Scientific, Technical, and Cultural Inputs

Sample	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**Total**
Observed OOO	19	15	21	20	17	16	22	19	13	19	13	13	207
Expected EEE	17.25	…	…	…	…	…	…	…	…	…	…	…	207
$\chi 2\chi^2$	0.17	0.29	0.81	0.43	0.028	0.07	1.30	0.17	1	0.17	1	1	7

From the table, we find that the **tabulated = 19.68** is greater than the **calculated = 5.15** and the **degree of freedom df = 11** at the **significance level**, and it is a value **not significant statistically**.

Second Hypothesis:

- The physical education teacher plays a role in developing students' health culture.

Question No.	**Question**	**Answers**				
01	Does the teacher pay attention to the history of games?	Yes		No		Sometimes
		11		03		00
		%91		% 09		%00
02	What is your favorite sport?	Handball	races	Basketball	Volleyball	No answer

Question No.	Question	Answers				
		00	02	05	04	01
		%00	%16	%41	%33	%8
03	Does the teacher explain the method of performance?	A little			A lot	
		02			10	
		20%			80%	
04	Which sport's rules are unknown to you?	Basketball	Handball	Volleyball	Races	No answer
		05	00	04	/ 02 /	01
		41%	0%	33%	16%	10%
05	Does the allocated time for warm-up convince you?	Yes			No	
		07			05	
		70%			30%	
06	In your opinion, what is the role of warm-up?	Injury prevention			Physical fitness	
		07			05	
		70%			30%	
07	Through your physical education study, did the teacher explain how the respiratory system works?	Yes			No	
		12			00	
		100%			0%	
08	Do you understand the relationship between correct practice and injury prevention?	Yes			No	
		12			00	
		100%			0%	
09	Student opinion about the physical education class	100%				

From Table (03), it appears that **91% of the students answered that the teacher pays attention to the history of games**, with similar percentages regarding his interest in team sports. The teacher performs strongly in explaining and demonstrating sports skills. The sample indicated **41% do not know the rules of basketball**, while **70% agreed that warm-up helps prevent injuries**, and the teacher clarified the functioning of the respiratory system. **100% of the sample** recognized the relationship between correct practice and injury prevention.

Discussion of Results

From **Table (01),** the students' cultural level in the **inputs of sports culture – general and material aspects** is evident. Even if students have some level of knowledge in these inputs, it **does not reach a true level of sports culture** regarding sports observation, avoiding violence, knowledge of the history and rules of games, and the risks of performance-enhancing substances. The significance of this axis is also low because it contains statements related to violence and doping.

From **Table (02),** the sample **rejects the idea that media plays a significant role in maintaining health, collective awareness, and group belonging, or in encouraging participation in sports clubs.** This may be because students generally prefer questions that highlight enjoyment and entertainment rather than collective or health-oriented aspects.

From **Table (03),** which shows the results of the questionnaire directed to the study sample regarding the cognitive dimensions of physical education, questions covered **three main axes:** general sports culture, sports injuries, and the physiological aspect. Respondents generally perceive that the teacher **often pays attention to the history of games**, with handball being the most preferred sport. Knowledge of game rules varies and is limited. Regarding warm-up, some students were not convinced of the allocated time, which may be due to limited understanding of its importance, although the majority recognize its role in injury prevention. The respondents showed a cognitive level related to the function of vital organs and their development, especially the respiratory system. Regarding students' opinion about the physical education subject, answers varied: some noted its effect on psychological well-being and improving fitness, while others considered it a source of knowledge across different aspects.

Conclusion

From the results obtained from the sports culture scale:

- The **first hypothesis** — that first-year secondary students have a certain level of sports culture — **was not confirmed**.
- The **second hypothesis** — that the physical education teacher contributes to improving students' cognitive level — **was confirmed**, although to varying degrees.

Recommendations:

- Raise awareness among teachers about the necessity of continuously improving their cognitive knowledge.
- Pay attention to the **periodic training of teachers** across all cognitive dimensions.
- Physical education teachers, like other teachers, lack pedagogical documents that assist them in performing their tasks effectively.
- It is necessary to **draw the attention of inspectors and specialists** to prepare a textbook that focuses on the theoretical background of the subject.
- Reconsider **evaluation methods and tools seriously**, including the introduction of a **theoretical exam** for the subject.
- Add a **theoretical hour** within the curriculum.

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