

Prevalent Multiple Intelligence Patterns among Sports Science Students

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Abstract

The present study aims to investigate the hierarchy of multiple intelligence patterns and their distribution among students of the Institute of Sciences and Techniques of Physical and Sports Activities at the University of Batna 2. This was achieved through the use of the descriptive analytical method, which is appropriate for the nature of the study. The researchers relied on Gardner's Multiple Intelligences Scale, with its nine dimensions, which was administered to a randomly selected sample consisting of 45 male and female students.

After statistical processing, the results revealed that the personal or intrapersonal intelligence pattern was the most dominant among the individuals of the sample, followed by the bodily-kinesthetic intelligence pattern in the second rank, and then the social intelligence pattern.

Keywords: Multiple intelligences; physical sports activity.

Introduction and Study Problem

For several years, admission to institutes of sports sciences has no longer required the availability of a specific profile for students wishing to study this scientific field, who may pursue a career as physical education teachers, educators, or even specialized coaches. Orientation towards sports sciences, like other fields of study at Algerian universities, has become based on the general average and, in some cases, the student's personal preference. This has been reflected in the competencies of graduates from these institutes, who sometimes do not possess distinctive personal profiles with characteristics that qualify them to perform this work comfortably in accordance with the requirements of the field.

The selection process still relies on physical characteristics and morphological measurements, while neglecting cognitive potentials and mental abilities that control the individual's behavioral outcomes. When discussing the sports field, it can be acknowledged that emotional control and reflective thinking are among the distinctive characteristics of combat sports practitioners. Spatial and bodily orientation, along with motor memory, are among the requirements for practicing team sports. Meanwhile, attention intensity, distance estimation, and high motor visualization are essential characteristics for track and field athletes (running, throwing, and jumping). All these characteristics manifested in the sports personality are driven

by mental potentials originating from two sources: genetic neural programming and the outcomes of environmental upbringing throughout the stages of development.

This is where Gardner's theory of Multiple Intelligences emerges, explaining that intelligence, as a dynamic construct, is manifested in multiple forms that differ according to individuals and the specific contexts of brain processes. Its purpose is effective adaptation according to the requirements of life situations. This research paper stems from the idea that every student oriented towards studying sports sciences has a specific psychological profile (cognitive-emotional), whose components are derived from several factors, primarily the distinctive intelligence patterns that remain hidden behind their performance outputs and behavioral outcomes. Therefore, it is possible to clearly question the dominance of these patterns among these students, and whether they can be considered as scientific criteria for analyzing their sports performance theoretically and practically, as today's students and tomorrow's practitioners.

This is particularly relevant given that several previous studies have demonstrated that belonging to the field of sports sciences requires a high level of bodily-kinesthetic intelligence in the first place, as shown in the study of "Fatima Hassan Abdel Basset Marjan" and "Heba Ibrahim Mohamed Al-Ashqar" (2022), entitled "Profiles of Multiple Intelligences and Their Relationship with Academic Achievement among Female Physical Education Students." It also requires emotional and social intelligence as an essential condition for practicing team sports and working within a unified team framework, in addition to logical-mathematical intelligence required for the scientific analysis performed by athletes in track sports.

However, many studies within the theoretical literature have adopted a purely descriptive approach, presenting results according to demographic variables such as gender, as in the study of "Irwin and Estrella" (2024), entitled "The Level of Multiple Intelligences among Physical Education Students at Pangasinan University." This differs from the study conducted in 2018 by "Kashef Ziad et al.," entitled "A Comparison of Multiple Intelligence Types among Physical Education Students" (Sultanate of Oman), which provided a deeper analysis and clarified, in a hierarchical manner, the patterns of intelligence among students of physical education colleges. Hence, we question the extent to which these multiple intelligence patterns are dominant among students of the Institute of Sciences and Techniques of Physical and Sports Activities at the University of Batna 2, and their ranking as preferences in brain processing.

Basic Research Terms:

Intelligence:

Terminologically:

Piaget defined it as: adaptation to the environment, which is a process of achieving balance between assimilation and accommodation (Tayeh, 2016, p. 4).

Fakher Aqel defined it as: the ability to respond to new situations and adapt to them in the shortest possible time. Its success lies in the ability to employ abstract concepts wisely (Aqel, 2003, p. 239).

Operationally:

It is the ability to perceive relationships through insight and mental adjustment in new situations encountered by the individual in his/her life.

Multiple Intelligences:

Terminologically:

Gardner defined it as: the ability to solve problems, or the ability to create products of value in one or more cultural contexts (Noufel, 2007, p. 97).

The concept of multiple intelligences is represented as a cognitive model that explains the way individuals use their intelligences in unconventional ways. This definition was adopted by Howard Gardner and his colleagues to draw attention to how the human mind interacts with the content of the world, including objects, people, and other elements (Belaasla & Wassaki, 2019).

Operationally:

They are the multiple intelligence patterns referred to by a number of scholars as follows: (intrapersonal – naturalistic – bodily-kinesthetic – logical-mathematical – interpersonal – existential).

Physical Sports Activity:

Terminologically:

Qasim Hussein defines physical sports activity as: one of the fields of sports, which is considered an effective element in preparing the individual by providing him/her with motor skills and experiences that contribute to directing his/her physical, psychological, social, and moral development. It also represents a positive means for serving the individual himself/herself through serving society (Hussein, 1990, p. 65).

Amin Anwar Al-Khouli defines it as: a comprehensive expression of all types of physical and sports activities practiced by the individual, in which the body is generally used. It is considered an anthropological concept rather than a social one because it is an additional component and a major manifestation of several cultural, psychological, and social aspects of the individual (Al-Khouli, 1996, p. 81).

Operationally:

It is a set of exercises, games, matches, and competitions carried out by the student inside or outside the university campus, with the aim of developing his/her motor and physical skills, or for the purpose of teaching him/her the pedagogical foundations adopted in education.

Previous Studies:

The First Study (2024):

Imran Jumaa Tantoush, entitled: "The Level of Multiple Intelligences among Students of the Faculty of Physical Education and Sports Sciences," University of Tripoli.

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Study Results:

- The intelligences were not equal.
- Bodily-kinesthetic intelligence ranked first, followed by rhythmic intelligence and then spatial intelligence, while linguistic intelligence ranked last.

- The importance of the study lies in demonstrating that the composition of multiple intelligences among sports science students may differ from that of students in other specializations.

The Second Study (2024):

Irwin and Estrella, entitled: “The Level of Multiple Intelligences among Physical Education Students at Pangasinan University.”

Study Results:

This study contributed to understanding the distribution of multiple intelligences among students in an Asian context and provided a broad framework for analyzing intelligences within different educational environments. The results indicated that:

- Physical education students generally had an above-average level of multiple intelligences.
- The relationship between intelligences and demographic variables such as age and gender was found to be statistically insignificant in some cases.

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The Third Study (2023):

Al-Zoubi, Khaled Al-Taher, entitled: “The Prevalent Multiple Intelligences among Students Qualified for Admission to the Faculty of Physical Education,” Port Said University.

Study Results:

The students showed moderate levels of all types of intelligences, and there were no statistically significant differences in multiple intelligences attributed to the gender variable, except for logical intelligence, which was in favor of male students.

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The Fourth Study (2022):

Fatima Hassan Abdel Basset Marjan and Heba Ibrahim Mohamed Al-Ashqar, entitled: “Profiles of Multiple Intelligences and Their Relationship with Academic Achievement among Female Physical Education Students,” Sohar University (2022).

Study Results:

- The female students showed varying levels of multiple intelligences ranging from moderate to very high.
- Bodily-kinesthetic intelligence was the most capable of predicting academic achievement.
- The most important recommendations included developing training programs for faculty members to employ multiple intelligences in education.

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The Fifth Study (2020):

Chafaâ Amina and Ben Djeddou Boutaleb, entitled: “The Relationship between Multiple Intelligences and Learning Styles among Students of the Institute of Sciences and Techniques of Physical and Sports Activities,” University of M’sila.

Study Results:

There is a statistically significant relationship between learning styles and types of multiple intelligences, such as the relationship between kinesthetic intelligence and the active learning style, and between social intelligence and the reflective and verbal learning styles.

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The Sixth Study (2018):

Amina Chafaâ and Ben Djeddou, entitled: “The Prevalent Multiple Intelligences among Students of the Institute of Sciences and Techniques of Physical and Sports Activities,” unpublished Master’s thesis, University of Batna.

Study Results:

The study focused on highlighting the dominant types of intelligence among students of the Institute of Sports Activities.

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The Seventh Study (2018):

Kashef Ziad et al., entitled: “A Comparison of Multiple Intelligence Types among Physical Education Students,” Sultanate of Oman.

Study Results:

- The most common types of intelligence among students were interpersonal (social) intelligence, intrapersonal intelligence, and bodily-kinesthetic intelligence.
- The least common types were musical intelligence and logical-mathematical intelligence.
- The results did not show statistically significant differences in intelligence types attributed to gender or university.

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Review of Previous Studies:

Through the previous studies presented, it can be observed that the fourth, fifth, and seventh studies concluded that the intelligence patterns available among students of Sciences and Techniques of Physical and Sports Activities are (social, sensory, and personal), and they confirmed that bodily-kinesthetic intelligence ranked first. However, the first study confirmed the presence of linguistic intelligence among this group, while the third study confirmed the presence of logical intelligence among males.

Therefore, the present study was conducted to investigate the hierarchy of intelligence patterns among students of the Institute of Sciences and Techniques of Physical and Sports Activities within the defined spatial and temporal limits.

Theoretical Aspect:

Concept of Intelligence:

Definitions of intelligence have varied due to the differences in the theoretical orientations adopted by theorists. According to Piaget, intelligence is defined as: adaptation to the

environment, meaning achieving a balance between assimilation and accommodation (Tayeh, 2016, p. 4).

As for Wechsler, he defines intelligence as: the ability to think properly and to engage in organized behavior with effective influence.

Meanwhile, Terman considers it as: the ability for abstract thinking.

According to Binet, intelligence is: the individual's ability to adopt a certain direction, maintain it, and continue pursuing it, as well as the ability to adapt in order to achieve the desired goal and the ability for self-criticism.

Intelligence is also considered a mental activity characterized by the ability to reason and make sound judgments in various and relatively new situations within a specific period of time (Chaïra, 2008, pp. 27-32).

From the perspective of the two researchers, through reviewing the various definitions addressing the concept of intelligence, it becomes clear that intelligence is no longer viewed as a general and fixed mental ability that can be measured by a single number. Rather, it has become a complex and dynamic concept manifested in multiple forms and patterns that vary according to individuals and contexts. Based on this perspective, the researchers consider intelligence as the individual's ability to effectively employ his/her mental, motor, emotional, and social potentials in order to adapt to environmental requirements and solve the problems encountered.

In the field of sports sciences specifically, intelligence is not limited to traditional cognitive aspects; it is also manifested through bodily-kinesthetic intelligence, spatial intelligence, social intelligence, and other patterns that contribute to sports performance, motor learning, and decision-making in competitive situations. Accordingly, adopting the concept of multiple intelligences represents an appropriate framework for understanding individual differences among sports science students and allows for the assessment of their diverse abilities beyond the unilateral view of intelligence.

Determinants of Intelligence:

There are two main factors involved in determining intelligence: (the heredity factor and the environmental factor). This has generated significant debate regarding the extent of each factor's contribution to increasing or decreasing intelligence levels (Taqouf, 2007, p. 168).

Many scholars acknowledge that intelligence is an innate ability with a formative origin determined by genetic inheritance. Jensen and others indicated that 80% of intelligence is based on hereditary factors, while only 20% is determined by environmental factors. These scholars view intelligence as a personal trait that varies according to race and gender, regardless of environmental, cultural, and economic factors.

On the other hand, proponents of the environmental approach argue that environmental factors play an important role in determining individuals' intellectual abilities. Through their studies of identical and fraternal twins who were raised in similar or different environments, they emphasize the emergence of clear differences in intelligence resulting from the differences in the environments in which individuals grow up (Al-Khalidi, 2003, p. 40).

Emergence of the Theory of Multiple Intelligences:

In 1979, the Van Leer Foundation requested Harvard University to conduct a scientific research project aimed at evaluating the state of scientific knowledge related to individuals' mental potentials and highlighting the extent to which these potentials can be achieved and utilized. Within this context, a team of specialized researchers at the university began their research, which lasted several years, with the aim of exploring and revealing the extent to which these potentials could actually be achieved. Indeed, research was conducted in several cognitive fields, supported by the aforementioned foundation. The research addressed the fields of human and philosophical history, natural sciences, and human sciences.

The researchers participating in this important study belonged to various scientific disciplines. Among them was the head of the research project team, Gerald Lesser, an educator and psychologist. There was also Howard Gardner, a professor of educational psychology interested in studying children's talents and the reasons for their absence among adults who had experienced accidents leading to brain damage. The research team also included the philosopher Israel Scheffler, who worked in the fields of philosophy of education and sciences, in addition to Robert Levine, a specialist in social anthropology known for his studies in the African desert and Mexico concerning the family environment and the nature of assistance provided to children within it. The scientific team also included the sociologist Merry White, specialized in education within Japanese society through studying the educational roles of individuals in the Third World (Saad, 2011, p. 140).

Since Gardner introduced the theory of Multiple Intelligences in 1983, this theory has gone beyond its theoretical scope to become applied in practical reality. Researchers have relied on it to benefit from it to the greatest extent possible. Most concepts related to learning difficulties indicate that individuals with learning difficulties possess average or above-average intelligence. Moreover, some of them often demonstrate talents that are overlooked or neglected by school curricula. Therefore, anyone working to improve and enhance the abilities of individuals with learning difficulties should not disregard the theory of Multiple Intelligences, as it has come to occupy a prominent position in educational guidance by emphasizing the role of unique abilities that distinguish individuals from one another (Amer, 2008, p. 123).

Importance of the Theory of Multiple Intelligences:

- Improving students' achievement levels and increasing their levels of interest towards the academic subject.
- The possibility of using multiple intelligences as an approach for training through different methods.
- Understanding students' abilities and interests.
- Employing fair assessment tools that focus on abilities.
- Achieving consistency between the needs of society and these interests.
- Providing flexibility and freedom in teaching students (such as allowing students to choose the method that suits them for learning) (Jaber, 2003, p. 172).

Description of Multiple Intelligences:

Linguistic Intelligence:

It is the individual's ability to perceive written and spoken language, learn it, and use it to achieve specific goals.

Logical-Mathematical Intelligence:

It is the ability to analyze problems based on logic, generate mathematical hypotheses, and examine problems and issues in a systematic manner. It also includes the ability to deal with numbers and solve complex arithmetic and geometric problems.

Spatial Intelligence:

It is the ability to perceive and visualize spatial and visual dimensions, coordinate spatial images, and perceive three-dimensional images. It also includes artistic creativity based on rich imagination. This type of intelligence requires a certain degree of sensitivity to (color, line, shape, nature, space, and relationships) existing among these elements.

Bodily-Kinesthetic Intelligence:

It is the ability to use sensory-motor skills and achieve coordination between the body and mind in order to create a refined harmony of the various movements performed by the body, either through all body parts or some of them.

Interpersonal Intelligence (Social Intelligence):

It is the ability to understand individuals' moods, intentions, goals, and feelings and to distinguish between them. It also includes sensitivity to facial expressions, voice, and gestures, and consequently the ability to respond to these signals procedurally through interaction and integration with others (Noufel, 2007, p. 45).

Intrapersonal Intelligence:

It is the ability of an individual to understand himself/herself through introspection of thoughts and emotions, the ability to perceive the self in terms of strengths and weaknesses, awareness of internal moods, intentions, motivations, self-perception, and self-esteem.

Naturalistic Intelligence:

It is the ability to identify and classify objects existing in nature. This type of intelligence can be found among farmers, animal breeders, geologists, and archaeologists.

Existential Intelligence:

It is the ability to reflect on issues related to life, death, religion, the universe, creation, and immortality.

Musical Intelligence:

It is the ability to distinguish tones, melodies, and various rhythms. Some children demonstrate excellence in this type of intelligence through musical performance at an early stage of their lives, which results in the ability to express, create, and appreciate through music (Mohamed, 2003, p. 36).

Comparison between the Traditional View and the Theory of Multiple Intelligences:

Tables and Figures

Table No. (01): Illustrates the points of comparison between the traditional view and the Theory of Multiple Intelligences.

Theory of Multiple Intelligences	Traditional View of Intelligence	م
Multiple intelligences are assessed through learning styles and patterns and .models of problem-solving	Intelligence can be measured through tests based on .short questions and answers	1
Human beings possess all types of intelligences; however, each individual has a unique profile or set of .intelligences that distinguishes him/her	Humans are born with a fixed .amount of intelligence	2
All types of intelligences can be improved and developed. Some individuals may excel in one type of intelligence more than others among .their peers	The level of intelligence does not change throughout the .years of life	3
There are multiple patterns or models of intelligence that reflect different .ways of interacting with the world	Intelligence consists of .linguistic and logical abilities	4
Teachers focus on the individuality of the learner, his/her strengths and weaknesses, and concentrate on .developing them	Teachers explain, teach, and educate the same subject using the same strategy for all .students	5
Teachers design activities or learning patterns centered around a question, link topics together, and develop strategies that allow students to present experiences or patterns that are valuable .to them and to their society	Teachers teach a specific .topic or academic subject	6

Table No. (02): Illustrates the Locations of the Neural Systems of Multiple Intelligences.

Developmental Factors	Neural Systems	Type of Intelligence
It emerges rapidly during early childhood and continues to .develop with advancing age	.Left temporal lobe	Linguistic-Verbal Intelligence
It reaches its peak during adolescence and adulthood, while higher mathematical insights .decline after the age of forty	.Left parietal lobes	Logical-Mathematical Intelligence
It reaches its peak during adolescence and adulthood, while artistic vision remains until an .advanced age	Posterior regions of .the right hemisphere	Spatial-Visual Intelligence

It depends on the individual's level of flexibility and practice of sports	Cerebellum, basal .ganglia, and motor cortex	Bodily- Kinesthetic Intelligence
It develops earlier than other intelligences during early .childhood	.Right hemisphere	Rhythmic- Musical Intelligence
It develops during the first three years and is influenced by attachment to surrounding .individuals	Frontal lobes, particularly the right .hemisphere	Interpersonal- Social Intelligence
It appears during the early years when the child develops boundaries between the self and .others	Frontal lobes, parietal .lobes, and the limbic system	Intrapersonal- Personal Intelligence

Physical Sports Activity:**Nature of Physical and Sports Activity:****Definition of Activity:**

It is an educational means that includes directed practices through which the individual's needs and motives are satisfied by preparing situations encountered by the individual in his/her daily life (Al-Khouli, 1996, p. 20).

Definition of Physical Activity:

It refers to the quantitative field of body movement, as well as the process of training, activation, and practice instead of laziness, weakness, and inactivity. In fact, the general concept of physical activity is a comprehensive expression of all physical activities performed by the individual, in which the body is generally used. A number of scholars have used the term "physical activity" as the comprehensive main field encompassing the colors, forms, and stages of an individual's physical culture. Among them is "Larsen", who considered it a major system within which all other sub-systems are included (Al-Khouli, 2001, p. 12).

Definition of Physical Sports Activity:

Physical sports activity is considered one of the paths of sports culture, whose origins date back to ancient times, when the first primitive human being spontaneously practiced many forms of activity in order to satisfy his primary needs. He organized competitions in running, swimming, throwing, wrestling, jumping, and other sports practices, imitating his ancestors and benefiting from the background of previous sports.

Later, humans introduced a number of means and tools, such as balls, rackets, and nets, established rules and regulations for them, and prepared training programs and competitions in order to develop and advance them. As a result, sports became one of the important social phenomena that influence different nations and became a symbol of the individual's struggle against time in order to achieve the highest levels of performance and skill.

Types of Physical Sports Activity:

When discussing the aspects of activity in physical education, it is necessary to know that there is “individual physical activity”, meaning that the individual practices the activity alone without the need for others to perform it. Examples include: boxing, horseback riding, wrestling, fencing, swimming, athletics, discus throwing, javelin throwing, and gymnastics exercises.

There is also “collective physical activity”, meaning that the athlete practices his/her activity within a group, which is referred to as team activities. Examples include: basketball, handball, volleyball, swimming and running relays, hockey, etc.

This classification is based on the social aspect. On the other hand, activities can be classified according to the forms of practiced physical activity and according to the method of performance. Some activities require balls or special equipment, while others do not require them, including:

Quiet Games:

Quiet games do not require physical effort from the athlete, whether practiced individually or with peers, in a calm atmosphere and a specific place, such as an indoor games hall or one of the rooms. These games are usually intended for relaxation after the effort exerted throughout the day.

Simple Games:

Their simplicity is due to the absence of details and rules. They appear in the form of songs and stories accompanied by some simple movements that are appropriate for children (Yahya, 1971, p. 209).

Competitive Games:

Competitive games require neuromuscular coordination and motor skills, in addition to physical effort that corresponds to the type of these competitive games, whether they are individual or collective.

Since competition requires the presence of two opponents or competitors, all conditions must be provided by one of the competitors in order to achieve victory.

Regarding school sports activity, known as “extracurricular physical education activity”, it is considered one of the complementary components of the physical and sports education program and achieves the same objectives. It is divided into “internal activity and external activity” (Yahya, 1971, p. 10).

Characteristics of Physical Sports Activity:

Physical sports activity is characterized by several features, including:

- Physical sports activity is considered a social activity, and it represents an expression of the interaction between the individual's requirements and the requirements of society.
- During physical sports activity, the body and its movements play the primary role.
- The clearest forms of physical sports activity are training and then competition.
- Sports training and competition require a high degree of physical effort and loads. The great effort affects the course of psychological processes because they require a high level of attention and concentration (Al-Khaleq, 1972, pp. 14-15).

Classification of Educational Physical and Sports Activities:

Physical education scholars have classified physical and sports activities according to different orientations, objectives, types, roles, and nature. One of the most important classifications through which physical and sports education has been incorporated includes:

- Physical education lessons.
- Internal activity.
- External activity.

Physical Education Lesson:

The physical and sports education lesson is considered similar to other systematic lessons, as it plays an effective and distinctive role in achieving educational objectives.

The physical education lesson is also considered the main unit of school sports, as it has a special nature that distinguishes it from other lessons. Thus, the physical and sports education lesson represents the framework that includes all educational, sports, and school options. It is regarded as the basic foundation for athletes in general and for high-level athletes in particular. Educating students at school to appreciate the lesson, through the new skills it provides, contributes to developing their abilities and attitudes towards it and increases their inclinations towards specific activities. The physical and sports education lesson is considered the smallest unit within the educational program, which constitutes the basis of every physical education curriculum. It should also take into consideration students' needs, in addition to their interests and desires.

Internal Activity:

It is the activity carried out outside school timetable hours. Its purpose is to provide students with opportunities to practice the activities they prefer and apply the skills they have learned during school practice. It represents actual practice activities closely connected to lessons, which constitute the basic foundation upon which the planning of internal activity is based.

Internal activity differs from one school to another according to available resources and the nature of the environment. It includes all activities available at school, both individual and collective. Internal activities are usually carried out during long and short breaks within the school day under the supervision of teachers and outstanding students, who have a good opportunity to learn the management of physical sports activities and overall control.

Consequently, this type of activity allows students to train in sports skills and games outside lesson hours. Internal activity is organized at school according to the plan established by teachers, whether through competitions between classes, individual performances, or organizational activities.

External Activity:

It is an activity practiced outside school timetable hours and outside the school (Zaki, 1965, p. 70).

Methodological Procedures of the Field Study:

Research Method:

The descriptive method was adopted as it is the most appropriate for such topics that address variables requiring description through an analytical and interpretative approach in order to provide a qualitative contribution.

Study Population:

The study population consists of students of the Institute of Sciences and Techniques of Physical and Sports Activities at the University of Batna for the academic year 2024/2025.

Study Sample and Selection Method:

The sample was selected randomly from students of the Institute of Sciences and Techniques of Physical and Sports Activities at the University of Batna 2, without any conditions or factors. The number of participants reached 45 students, making the sample representative of the original population.

Study Instrument:

The Multiple Intelligences Scale was used as the main research instrument. It consists of nine different types of intelligences identified by Gardner, developed by Noufel and Mohamed Al-Hila. The scale included 90 items.

Table No. (03): Illustrates the Number and Item Numbers of Each Dimension

Item Numbers	Number of Items	Dimension
10-1	10	Linguistic Intelligence
20-11	10	Logical-Mathematical Intelligence
30-21	10	Bodily-Kinesthetic Intelligence
40-31	10	Spatial Intelligence
50-41	10	Musical Intelligence
60-51	10	Interpersonal Intelligence
70-61	10	Intrapersonal Intelligence
80-71	10	Naturalistic Intelligence
90-81	10	Existential Intelligence
90	90	(Total (Overall

Scoring Method:

This scale uses a four-point Likert scale, where each item is assigned the following scores: (1) Never, (2) Rarely, (3) Sometimes, (4) Always. The level of intelligence in each dimension increases as the respondent's scores on these statements increase. The following ratings are also adopted:

- 10–19: Low intelligence.
- 20–29: Average intelligence.
- 30–40: High intelligence.

Statistical Processing:

In order to enable a clear and easy commentary and analysis of the questionnaire, we relied on the statistical analysis method by converting the results obtained through the measurement instrument into numerical values in the form of percentages, by applying the following well-known methods:

- Percentage.
- Arithmetic mean.
- Standard deviation.

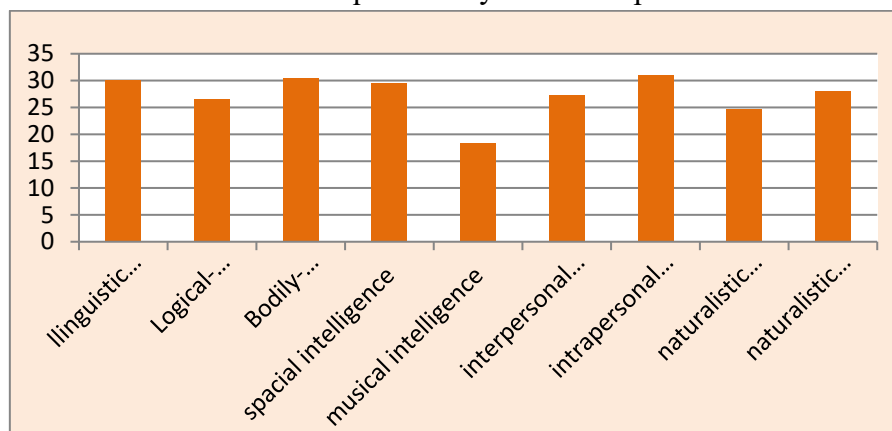
Presentation and Analysis of Results:

Table No. (04): Arithmetic Means and Standard Deviations of the Different Scores of Students of the Institute of Sciences and Techniques of Physical and Sports Activities.

Ranking	Standard Deviations	Arithmetic Means	Type of Intelligence	No
3	4,32	30,07	Linguistic Intelligence	01
7	4,12	26,62	Logical-Mathematical Intelligence	02
2	4,14	30,53	Bodily-Kinesthetic Intelligence	03
4	5,58	29,51	Spatial Intelligence	04
9	5,06	18,38	Musical Intelligence	05
6	5,62	27,27	Interpersonal Intelligence	06
1	5,19	31,02	Intrapersonal Intelligence	07
8	6,42	24,58	Naturalistic Intelligence	08
5	6,73	28,11	Existential Intelligence	09

Total	Percentages	Frequency	Score	Type of Intelligence	No
45	2,22	1	low	Linguistic intelligence	01
	28,89	13	moderate		
	68,89	31	high		
45	2,22	1	low	Logical-Mathematical Intelligence	2
	80,00	36	moderate		
	17,78	8	high		
45	0,00	0	low	Bodily-Kinesthetic Intelligence	03
	37,78	17	moderate		
	62,22	28	high		
45	6,67	3	low	Special intelligence	04
	35,56	16	moderate		
	51,11	23	high		
45	62,22	28	low	Musical intelligence	05
	35,56	16	moderate		
	2,22	1	high		
45	15,56	7	low	Interpersonal intelligence	06
	33,33	15	moderate		
	51,11	23	high		
45	2,22	1	low	Intrapersonal intelligence	07
	35,56	16	moderate		
	62,22	28	high		
45	22,22	10	low	Naturalistic intelligence	08
	48,89	22	moderate		
	28,89	13	high		
45	17,78	8	low	Existential intelligence	09
	35,56	16	moderate		
	46,67	21	high		

Figure No. (01): Arithmetic Means of the Different Scores of Students of the Institute of Sciences and Techniques of Physical and Sports Activities.



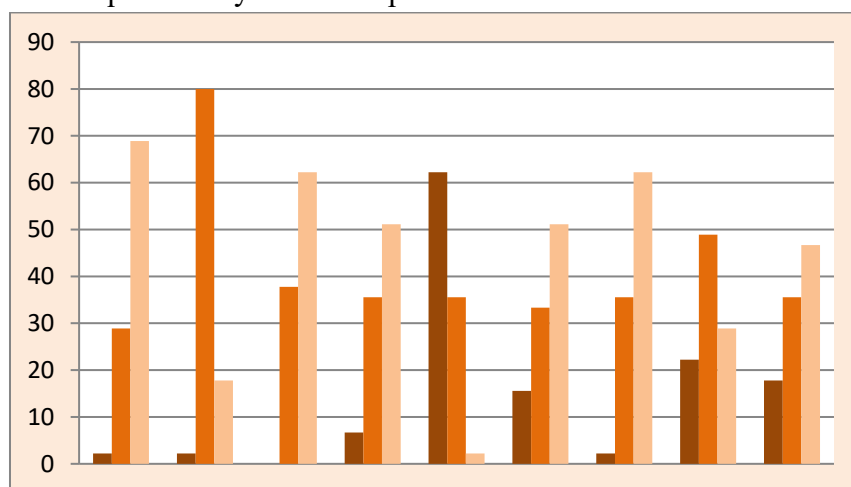
Based on the results of Table No. (04), the most dominant type of intelligence among students of the Department of Sciences and Techniques of Physical and Sports Activities is intrapersonal intelligence, with an arithmetic mean estimated at (31.02). It is followed by bodily-kinesthetic intelligence in the second rank, with an arithmetic mean of (30.53). Then comes linguistic intelligence in the third rank, with an arithmetic mean of (30.07).

Spatial intelligence occupies the fourth rank, with an arithmetic mean of (29.51), followed by existential intelligence in the fifth rank, with an arithmetic mean of (28.11). Interpersonal intelligence comes in the sixth rank, with an arithmetic mean of (27.27).

In the seventh rank comes logical-mathematical intelligence, with an arithmetic mean of (26.62). Naturalistic intelligence ranks eighth, with an arithmetic mean of (24.58). Finally, musical intelligence ranks last, with an arithmetic mean of (18.38).

Table No. (05): Frequencies and Percentages of Students' Scores According to Their Possession of Each Type of Multiple Intelligences.

Figure No. (02): Percentages of the Different Scores of Students of the Institute of Sciences and Techniques of Physical and Sports Activities.



According to Table No. (05), it was found that linguistic intelligence obtained a high level with a percentage of 68.89%, while logical-mathematical intelligence achieved a high level with a percentage of 17.78%. As for bodily-kinesthetic intelligence, it was high with a percentage of

62.22%. Spatial intelligence was also high with a percentage of 51.11%, whereas musical intelligence recorded a high level with a percentage of 2.22%.

The percentage of high interpersonal intelligence was estimated at 51.11%, while intrapersonal intelligence reached a high level of 62.22%. Naturalistic intelligence increased by 28.89%, and the percentage of existential intelligence reached 46.67%.

Through the statistical processing of the data from the Multiple Intelligences Scale, it can be concluded that the dominant pattern among students of the Department of Sciences and Techniques of Physical and Sports Activities is intrapersonal intelligence.

Discussion of Results:

Through Tables (04) and (05), we reached the conclusion that there is a variety of intelligences among students of the Institute of Sciences and Techniques of Physical and Sports Activities, with differences in levels from one student to another. This confirms the hypothesis of the Multiple Intelligences Theory, which states that every individual possesses a diverse combination of intelligences.

The results of the table indicate that intrapersonal intelligence is the dominant intelligence among students of the Department of Sciences and Techniques of Physical and Sports Activities, with an arithmetic mean of 31.02, while bodily-kinesthetic intelligence ranked second, with an arithmetic mean of 30.53.

Intrapersonal intelligence refers to the ability of an individual to understand himself/herself through introspection of thoughts and emotions, the ability to perceive the self in terms of strengths and weaknesses, awareness of internal moods, intentions and motivations, and the ability to understand and appreciate oneself.

As for bodily-kinesthetic intelligence, it refers to the ability to use sensory-motor skills and coordinate between the body and mind by achieving refined harmony among the different movements performed by the body through all or some of its parts.

From the perspective of the two researchers, the presence of both intrapersonal intelligence and bodily-kinesthetic intelligence among students of the Institute of Sciences and Techniques of Physical and Sports Activities significantly enhances their academic and sports performance alike. Intrapersonal intelligence provides the student with the ability to understand oneself, manage time, and regulate emotions, whereas bodily-kinesthetic intelligence enables the student to control the body and perform sports movements efficiently and accurately.

When these two types of intelligence are integrated, the student becomes capable of dealing with psychological pressures during training or competitions and making quick and effective decisions while maintaining a high level of physical performance. In short, the relationship between intrapersonal and bodily-kinesthetic intelligence creates an important balance between mind and body, contributing to the development of an integrated sports personality and making the student better prepared to successfully face academic and sports challenges.

This is confirmed by the study of “Fatima Hassan Abdel Basit Marjan and Heba Ibrahim Mohammed Al-Ashqar (2022)”, which concluded that bodily-kinesthetic intelligence was the most dominant type of intelligence among the participants of their study.

Then comes “linguistic intelligence”, together with “spatial intelligence”, in the third rank due to the importance of verbal communication, whether in the teaching or training process, as both

involve learning and acquiring physical, motor, and sports skills that require linguistic communication skills. This is particularly important for learners in the early stages of development, where they rely on the sense of hearing, which is more developed than sight, touch, and proprioception in the field of motor learning, especially in modern learning situations where the perceptual effect depends on the memory effect for processing information, in accordance with the principles of motor learning theories.

However, the requirements of the changing motor field necessitate a good ability to accurately read moving variables in the playing environment, as well as conscious perception of spatial positioning, in addition to the competitive situation that requires both visual and spatial coordination.

Furthermore, our study revealed that the dominant pattern in the fourth rank was social or interpersonal intelligence. This is consistent with the characteristics of the academic specialization pattern, as well as the requirements of sports practice within teamwork and sports teams, which require the availability of numerous social characteristics, including integration, respect for group rules, collective pursuit of goals, and effective teamwork based on professional interaction and sportsmanship.

This result agrees with several previous studies, including the study of Kashef Ziad and others (2018) entitled “A Comparison of Multiple Intelligences Types among Physical Education Students” in the Sultanate of Oman, where social intelligence was dominant among the study sample, followed by intrapersonal intelligence and then bodily-kinesthetic intelligence.

Suggestions:

- The necessity of adopting the Multiple Intelligences approach in training and educational programs in sports sciences, in a way that takes into consideration the diversity of students' abilities and differences in their intelligence patterns.
- Encouraging teachers and coaches to diversify teaching and training methods and not rely solely on traditional methods that focus on one aspect of intelligence.
- Integrating educational and training activities aimed at developing bodily-kinesthetic, spatial, and social intelligence due to their direct role in improving sports performance.
- Conducting future field studies to investigate the relationship between multiple intelligence patterns and the level of academic and sports performance among students.
- Employing the results of multiple intelligences studies in sports guidance and selection processes, which contributes to placing students in specializations or sports activities that correspond to their abilities.
- Working on training teachers and coaches in the field of multiple intelligences through specialized training courses and workshops.

Conclusion:

In light of what has been addressed in this article, it becomes clear that the Theory of Multiple Intelligences represents a modern and appropriate theoretical framework for understanding the nature of human intelligence in general and for explaining individual differences among sports science students in particular. This theory has demonstrated that intelligence is not limited to traditional cognitive abilities but includes multiple patterns that interact with each other, such

as bodily-kinesthetic, spatial, social, and intrapersonal intelligences, which are highly important patterns in the sports field.

Moreover, adopting this comprehensive perspective of intelligence contributes to reconsidering educational and sports training methods and enhances opportunities for discovering students' abilities and directing them in accordance with their interests and potentials. Accordingly, studying the dominant multiple intelligence patterns among sports science students represents a fundamental step towards improving the quality of academic and sports training and enhancing their level of performance and motor learning.

References:

- Ahmed Abdel Latif Abu Saad. (2011). Guidance of Gifted and Outstanding Students. Amman: Dar Al-Masirah.
- Adeeb Mohammed Al-Khaldi. (2003). Psychology of Individual Differences. Amman: Wael Publishing House.
- Amin Anwar Al-Khouli. (1990). Sport and Society. The National Council for Culture, Arts and Literature, Kuwait: Alam Al-Ma'rifa Series.
- Amin Anwar Al-Khouli. (2001). Foundations of Physical and Sports Education. 2nd edition. Cairo: Dar Al-Fikr Al-Arabi.
- Iman Abdullah Tayeh. (2016). The Effect of a Program Based on the Theory of Multiple Intelligences on the Acquisition of Jurisprudential Concepts and Introspective Thinking among Ninth Grade Female Students. Master's Thesis, Faculty of Education, Islamic University, Gaza.
- Jaber Abdel Hamid Jaber. (2003). Multiple Intelligences: Understanding, Development, and Deepening. 1st edition. Cairo: Dar Al-Fikr Al-Arabi.
- Hussein Mohammed Abdel Hadi. (2003). Measuring and Evaluating Multiple Intelligence Abilities. 1st edition. Jordan: Dar Al-Fikr.
- Tarek Abdel Raouf Amer & Rabie Mohammed. (2008). Multiple Intelligences. Amman: Dar Al-Yazouri.
- Essam Abdel Khaleq. (1972). Sports Training: Theories and Applications. Egypt: University Book House.
- Ali Yahya Al-Mansour. (1971). Culture and Sport. Part One, 1st edition, Egypt.
- Ghbazi, Thaer & Abu Shaeera. (2008). Mental Abilities and Their Impact on Levels of Thinking. 1st edition. Amman: Arab Community Library for Publishing and Distribution.
- Fakher Aql. (2003). Dictionary of Psychology (English, French, Arabic). 2nd edition. Beirut: Dar Al-Malayeen.
- Qasim Hassan Hussein. (1990). Sports Psychology: Its Principles and Applications in the Field of Training. Part Two. Iraq: University of Mosul.
- Mohamed Al-Hammami & Anwar Al-Khouli. (1996). Foundations of Building Physical and Sports Education Programs. Cairo: Dar Al-Fikr Al-Arabi.
- Mohamed Bakr Noufel. (2007). Multiple Intelligence in the Classroom. Amman: Dar Al-Masirah.

- Mohamed Adel Khattab & Kamal El-Din Zaki. (1965). Physical Education for Social Service. Cairo, Egypt.
- Mohi El-Din Taqouf. (2007). Foundations of Educational Psychology. Amman: Dar Al-Fikr.
- <https://journal.aju.edu.ly/index.php/jau/article/view/97>
- [https://ierj.in/journal/index.php/ierj/article/view/1968?utm_source=chatgpt.com](https://ierj.in/journal/index.php/ierj/article/view/1968?utm_source=chatgpt.com)
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- [https://asjp.cerist.dz/en/article/131553?utm_source=chatgpt.com](https://asjp.cerist.dz/en/article/131553?utm_source=chatgpt.com)
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