

TYPES OF MULTIPLE INTELLIGENCES AMONG UNIVERSITY STUDENTS AND THEIR RELATIONSHIP TO SELF-REGULATED LEARNING STRATEGIES

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ABSTRACT

The research topic dealt with examining the relationship between multiple intelligences and self-regulated learning strategies among a sample of university students, at both the University of Algiers 2 - Abu Al-kasim Saadallah - and the Higher Normal School of Kobba, Algeria. The research sample reached (127) male and female students from the University of Algiers 2 - Abu Al-Kasim Saadallah - and the Higher Normal School - Al-Qubba - Algeria, including (70) male and female students from the literary branches and (57) male and female students. Of the scientific branches. To achieve the research objectives, it was used

1-Multiple Intelligence Scale prepared by Adel Rayan.

2- Self-regulated learning strategies scale prepared by Bardi and translated by Ahmed Ibrahim Ibrahim

The results of the research found that there is a weak relationship between computer intelligence and strategies for organizing self-learning. It also showed that there are statistically significant differences between students of literary majors and students of scientific majors in the averages of computer intelligence only. With regard to gender diversity, the results did not reveal any statistically significant differences between Male and female students in terms of average computer intelligence among students. There is also a clear difference in the trends in computer intelligence among students in literary branches, and scientific branches in terms of degree expressed by “proportion” and arrangement.

The study recommended the necessity of helping students discover the types of intelligence they possess, relying on the educational system on audio-visual media, linking education to social reality, and generalizing dealing with the theory of multiple intelligences.

Keywords: Multiple Intelligences, Self- regulated learning, Student

1- Introduction

The mind grows as a human essence through different stages, and it is responsible for distinguishing man from other living beings, but in itself it differs from his brother man in his

mental abilities, and among these abilities we find intelligence, which is considered mental energy or mental return or is the characteristic accompanying the mind, which works actively, understandingly, deeply and quickly, and this is what prompts researchers to learn more about it and ask about its types, characteristics, and the factors affecting it, and its tests, and the most important theories explaining it.

No topic has received as much study in the field of psychology as the topic of intelligence, and differential psychology has not been interested in studying differences just for the sake of understanding man, but because contemporary society has reached a high degree of complexity and the specializations and roles that its members should perform have diversified.

Psychologists, educators, and sociologists have differed on setting a specific definition of intelligence, and despite the efforts made for many years by them, they have not even agreed on setting a general concept of intelligence, and of course this is a major methodological problem, as differences in understanding the nature of intelligence necessarily lead to differences in how to study and measure it, and the difference in defining intelligence may be due to:

- That intelligence is not a tangible material thing, i.e. it is a hypothetical concept.
- That intelligence is not measured directly, but is inferred from the individual's behavior.
- That scientists have approached it from different angles, and according to the prevailing concepts they have, they have defined it, so many concepts about intelligence have emerged.

Like all theories, the theory of multiple intelligences came with another concept to explain intelligence, which Gardner presented in his book "Frames of Mind", which was published in the year (1983), where the theory focused mainly on the idea of multiple intelligences, and he indicated that every person has seven intelligences, each of which plays a specific role, which are:

Verbal/Linguistic Intelligence

Logical/Mathematical Intelligence

Visual/Spatial Intelligence

Bodily/Kinesthetic Intelligence

Social/Interpersonal Intelligence

Interpersonal/Intrapersonal Intelligence

Musical Intelligence

In the following years, Gardner expanded the scope of talents and abilities, and three other areas or intelligences were added in the year (1999, 2000), which are :

- 1- The Naturalist Intelligence (
- 2- Spiritual Intelligence)
- 3- Existential Intelligence

He thus rejects the prevailing belief that intelligence is a single mental faculty, such that each person possesses varying degrees of intelligence called (intelligence profile), and Gardner believes that multiple intelligences represent relatively independent mental abilities in humans.

(4 p, 1989, Gardner & Hatch)

Gardner's disregard for the idea of a single intelligence associated with traditional intelligence tests is the main reason for the spread of the ideas of this theory, which led to fundamental changes in the process of school modernization across the world.

Gardner defined intelligence as the ability to analyze specific patterns of information in specific ways (Gardner, 2011.p. 32). He also defined it as a latent biopsychological ability to process information or solve problems. He also considered it an ability to create a valuable product in one or more cultural contexts. In this direction, Gardner emphasizes the importance of available cultural opportunities such as social groups in order to enhance and activate these intelligences. Human intelligence must include a list of skills necessary to solve problems, in addition to the ability to find or create problems so that they form a basis for acquiring new knowledge. The foundations or principles on which this theory was based were represented in the consideration that intelligence is not one type, but rather multiple and diverse intelligences, and that they work independently and their levels vary within a single individual, and that the types of intelligence differ in growth and development, internally for the individual, or between individuals, and all intelligences are vital and dynamic, and it is possible to identify, distinguish, describe and define the types of intelligence, in addition to the possibility of developing multiple intelligences and raising their levels if the individual has the motivation and if there is appropriate training and encouragement to develop them, and that the level of multiple intelligences differs from one person to another, and that each person specializes in a unique combination of these intelligences, and that using one type of multiple intelligences can contribute to developing another type, and it is possible to measure and evaluate the cognitive mental abilities that stand behind each type of multiple intelligences, as well as measure the personality, skills and sub-abilities specific to the types of multiple intelligences. Gardner, H. (2006) confirmed that there are gifted people who do not have strong verbal language skills, especially those who have artistic talents, or who are innovators and inventors, or who have interests in space sciences. These people cannot pass a single test that measures multiple types of abilities. Gardner emphasizes the importance of appreciating and caring about individual differences, and that no two people can have the same intelligence profiles. He states that this is the biggest challenge for educational institutions.

The theory of multiple intelligences has contributed to developing and enriching the space of educational action, and has also brought about a significant shift in the space of psychological and educational heritage, both theoretical and experimental. (Adel, 2013). The motivations for research into the theory of multiple intelligences were launched with the aim of enhancing the effectiveness of teaching and designing curricula, so that the use of this theory is not limited to providing teachers with more options in teaching and assessment methods, but also allowing learners to demonstrate what they have learned in multiple ways, as well as helping teachers understand their students better. According to this theory, schools must employ multiple approaches in order to observe students' problem-solving skills and assess their current levels from different angles. The theory of

multiple intelligences is a vital addition to the teaching-learning process, as it has contributed to renewing the spirit of educational work, and its positive impacts have been evident in all areas of educational practice in terms of its ideas being directed towards the effectiveness of the learner and his centrality in learning, and because it has contributed significantly to maximizing the outcomes of the entire educational process, enhancing the teaching performance of teachers, and taking into account the characteristics and abilities of learners, and its principles emphasized the interests and inclinations of students, and its practical implications took into account the aspects of developing these abilities. Teaching according to multiple intelligences will help students develop their abilities, which will increase the effectiveness of their learning and their academic success. In classes that employ this theory, students feel their personal and social values, and students are able to discover their strengths and weaknesses, and thus the theory of multiple intelligences can be used as a tool to achieve a culture of equal opportunities in classrooms. The theory of multiple intelligences has also highlighted many educational implications in all fields of education and its various stages, and an introduction to educational innovation in the pre-university education stage, as it contributes to providing flexible options during curriculum design, enabling teachers to present content in multiple ways.

One of the most complex forms of these challenges is the way an individual learns, as thousands of interconnected mental processes occur within the human mind, nervous and psychological (emotional) system, and muscular structure.

For this reason, theories and opinions have emerged that attempt to understand the philosophy of the mechanism and method of acquiring knowledge and to clarify the internal and external mental processes that occur and affect the individual's reception and way of thinking.

Therefore, professors of education, psychology, and epistemology, and those interested in studying human development, have developed a set of patterns that attempt to explain the method of acquiring knowledge and processing information, and these patterns are based on the study of human thinking or theories of learning or studies of cognitive development.

The field of information processing patterns is very broad and explains to the teacher, author, or researcher in the field of teaching, psychology, or education multiple points of view on the mechanism of students' thinking and how to achieve appropriate education and learning.

Considering that self-regulated learning is one of the most important determinants of student effectiveness and academic achievement, the educational and psychological heritage, both theoretical and experimental, has addressed this variable with great interest. The management and control of efforts exerted on classroom tasks, in addition to the planning and monitoring processes of cognitive processes, are determined according to the degree to which students possess self-regulated learning strategies. The definition of self-regulated learning strategies includes three indicators: the use of self-regulated learning strategies, self-directed feedback on learning effectiveness, and overlapping motivational processes. Self-regulation of learning is not limited to cognitive processes, but rather extends to the learner's ability to transform these abilities into academic skills (Al-Jarrah, 2010, p. 320). Self-regulated learning strategies represent paths that guide learners towards mastering learning objectives, and make educational problems enjoyable learning situations, thus enhancing students' ability to face them with more willpower. These skills

also represent a set of processes and procedures that guide learners towards acquiring information and ideas, through better investment of learning time, and engaging effectively in different learning situations, because they are more focused on their goals, and strive to achieve them, and use multiple strategies during that, and despite their independence, they seek help when needed (Adel, 2013). In this context, Al-Jarrah (Al-Jarrah, 2010, 334) indicates that students who possess self-regulated learning skills are characterized by high internal motivation, use different patterns of thinking and problem solving, use metacognitive skills while implementing learning activities, and tend towards self-reliance and independence, and are more keen to monitor and evaluate themselves. Self-regulated learning strategies are considered a trait that can be acquired through the surrounding educational and cultural environment, and therefore the degree of acquisition is through positive practice and the resulting experience, and self-reflection processes contribute to enhancing this skill, in addition to the fact that self-regulated learning is done according to successive stages. (Adel, 2013).

It is clear from the induction of the previous literature the importance of multiple intelligences in all aspects of the educational learning process and its various stages, as it provided an educational framework through which learners can be given learning opportunities capable of taking into account individual differences between them and investing them in a way that enhances their abilities and potentials, and maximizes the effectiveness of their learning.

Considering these skills as one of the processes that enhance the outcomes of the educational process, and at the same time represent an intended goal, especially in the educational system that depends on the learner's independence in learning activities. (Adel, 2013).

The theory of multiple intelligences provided an explanation for many of the dilemmas that were raised in the process of improving and reforming the educational process in the pre-university education stage, such as improving In teaching practices, curriculum design, educational guidance programs development, building activities that contribute to developing students' abilities and skills, and reforming educational assessment systems, while the projections of this theory in the university education stage remained limited, according to (Adel, 2013), and this is what we agree with, and on the other hand, the need still exists to investigate the relationship of this theory with some variables affecting students' self-learning strategies, and within this orientation the study problem emerged: [By targeting the relationship of multiple intelligences with self-regulated learning strategies among students of the Department of Educational Sciences at the Faculty of Social Sciences - University of Algiers 2- and students of the Higher School of Professors - Kouba-]

2- The research problem and its questions:

From the above, we can define the research problem in the following questions:

- Is there a statistically significant relationship between multiple intelligences and self-regulated learning strategies among students of the Department of Educational Sciences at the Faculty of Social Sciences - University of Algiers 2- and students of the Higher School of Professors - Kouba-?
- Are there statistically significant differences between students of scientific specializations at the Higher School of Professors - Kouba- and literary specializations of the Department of Educational

Sciences at the Faculty of Social Sciences - University of Algiers 2- in the averages of multiple intelligences?

- Are there statistically significant differences between the sexes in the multiple intelligences among students of the Department of Educational Sciences at the Faculty of Social Sciences - University of Algiers 2- and students of the Higher School of Professors - Kouba-?

- Do students of the Department of Educational Sciences at the Faculty of Social Sciences - University of Algiers 2- and students of the Higher School of Professors - Kouba differ in the type of multiple intelligences they have?

3- Formulating research hypotheses:

- There is a statistically significant relationship at a significance level of ($0.05 \geq \alpha$) between multiple intelligences and self-regulated learning strategies among students of literary branches 1 and students of scientific branches 2.

- There are statistically significant differences at a significance level of ($0.05 \geq \alpha$) between students of literary branches and students of scientific branches in their multiple intelligence averages.

- There are statistically significant differences at a significance level of ($0.05 \geq \alpha$) in multiple intelligences among students of literary branches and scientific branches due to the gender variable (males, females).

- Students of literary branches differ from students of scientific branches in their multiple intelligence patterns.

4- Importance of the research:

The importance of the research lies in its presentation of the theory of multiple intelligences as a modern concept of human intelligence, as the application of its concepts in teaching leads to meeting the needs and individual differences of students in academic education, through the teacher's diversification of educational situations and activities for a single study unit so that each student can benefit from situations and activities that are compatible with his different intelligences.

It also lies in studying the relationship between multiple intelligences and self-regulated learning strategies, which helps to view the educational-learning characteristics and behaviors of students, which provides an opportunity for those in charge of teaching programs to build curricula concerned with accompanying students to academic compatibility and psychological, mental and physical characteristics.

5- Research objectives:

1- To know whether there is a correlation between multiple intelligences and self-regulated learning strategies among university students.

2- To know whether there are differences in the averages of the total score of multiple intelligences among university students (males and females).

3- To know the differences in the averages of the total score of multiple intelligences among university students with scientific specializations and literary specializations.

4- Knowing the difference in the type of multiple intelligences among university students with scientific and literary specializations.

6- Defining the concepts

The research relies on the following concepts:

6-1-Multiple Intelligences Theory: It is a psychological and biological ability to operate information that can be activated in a cultural entity to solve problems or create products that have value in the cultural entity (Gardner, 2005, p. 36)

The researchers define multiple intelligences procedurally as: the sum of the eight skills and abilities: verbal, logical, visual, physical, personal, social, musical, and natural, which Gardner identified and which are measured procedurally by the degree obtained by the respondent in the tool prepared for this purpose.

6-2- Self-regulated learning strategies: Zimmerman (1989) defines self-regulated learning strategies as "actions and processes directed at acquiring information, or tasks that include: the goal, and the perception of benefit by learners, and also includes methods such as organizing and transforming information, self-tracking, and searching for information." The researchers define self-regulated learning strategies procedurally as: a set of methods and procedures that individuals in the research sample decide to use during different learning situations in order to achieve the desired goals, which are reflected in their response to the statements of the self-regulated learning strategies scale.

- Literature Review

Study of Al-Shawiqi (2005)

On multiple intelligences among university students, and the possibility of predicting academic achievement in light of multiple intelligences.

The study aimed to identify multiple intelligences among university students, and the possibility of predicting academic achievement in light of multiple intelligences. The study was applied to a sample of (171) students from the College of Education in Abha. The order of multiple intelligences among the sample members according to the results of the study was as follows: personal, then motor, then social, then linguistic, then spatial, then mathematical, then natural, then musical. The results also showed a significant relationship between the intelligences, and the results also indicated the possibility of predicting students' achievement in language skills through linguistic intelligence, and the inability to predict achievement in algebra through multiple intelligences.

Study of Muhammad Al-Masry (2009)

The relationship between learning strategies and academic achievement among male and female students of the College of Educational Sciences at Al-Isra Private University.

The aim of the study is to identify the level of possession of learning strategies among students of the College of Educational Sciences, as well as to know the differences in the level of these

strategies according to the variables of gender and level of achievement, and to know the relationship between the level of possession of learning strategies and their level of academic achievement. The sample size was (85) male and female students, to whom the learning strategies scale was applied, originally prepared by (Arbor, 1989) and translated by Baabad and Marai (1996), and the researcher verified its validity and reliability. The results indicated an average level of learning strategies, and that there were statistically significant differences in the level of possession of learning strategies according to the level of achievement (high, low) on the dimension of learning motivation strategies, in favor of the high level of achievement. The results did not show differences between the sexes in the level of these strategies, and the results showed a positive correlation with statistical significance between the dimension of learning motivation strategies and academic achievement, while the relationship on the other dimensions was not statistically significant.

Abdul Nasser Al-Jarrah's study (2010)

The relationship between self-regulated learning and academic achievement among a sample of Yarmouk University students

The study aimed to reveal the level of university students' possession of self-regulated learning components, and whether these components differ according to the student's gender or academic level, in addition to identifying the predictive ability of self-regulated learning components with academic achievement, and knowing whether academic achievement differs among students with a high level of self-regulated learning than among students with a low level of self-regulated learning. The study sample consisted of (331) male and female undergraduate students in Yarmouk University, and to achieve the objectives of the study, a scale of self-regulated learning was used. The results showed that the students' possession of (Purdie) Purdie skills of self-regulated learning on the component of recitation and memorization was at a high level, and the rest of the dimensions were at an average level. It was also shown that males outperform females on the component of goal setting and planning, and that fourth-year students outperformed, with statistical significance, second- and third-year students on the components of record keeping and monitoring, and seeking social assistance. The results also indicated that there were statistically significant differences in academic achievement between the category of students with high self-regulated learning and the category of students with low self-regulated learning on the components of goal setting and planning, and recitation and memorization, in favor of students with high self-regulated learning. It was also shown that the components of record keeping and monitoring, and goal setting and planning, predict academic achievement among students. Study of Ibrahim bin Abdullah Al-Hussainan (2010 AD)

Self-regulated learning strategies in light of the Pintrich model and their relationship to achievement, specialization, academic level and preferred learning style. The current study aims to identify the nature of the relationship between self-regulated learning strategies in light of the Pintrich model, academic achievement, and the student's preferred learning style (cooperative, competitive, individual) and to reveal the differences in self-regulated learning strategies in light of the Pintrich model according to specialization and academic level (theoretical - scientific) among students in the second and third secondary grades in the Riyadh and Qassim regions.

The study sample amounted to (519) students from the second and third secondary grades in the Riyadh and Qassim regions who were selected using a multi-stage cluster random sample method. The study tools are:

- 1- Self-regulated learning strategies scale prepared by the researcher.
- 2- Preferred learning style scale prepared by the researcher.

The results showed that:

- 1- There is no positive relationship between self-regulated learning strategies and academic achievement in its traditional concept, except for the metacognitive self-regulation strategy, self-talk directed towards external performance and effort regulation.
- 2- The relationship between self-regulated learning strategies and the preferred learning style was variable.

Adel Rayyan's study (2013)

The predictive ability of multiple intelligences in self-regulated learning skills and academic achievement among education students in the Faculty of Education, Al-Quds Open University.

It aimed to examine the predictive ability of multiple intelligences in self-regulated learning skills and academic achievement among education students in the Faculty of Education, Al-Quds Open University. The study was applied to a sample of (328) male and female students, and the study relied on the following tools:

- 1-McKenzie's Multiple Intelligences Scale developed by Rayyan and Shaheen.
- 2-Ryan and Shaheen's Self-Regulated Learning Skills Scale.

The results of the study showed a statistically significant positive relationship between multiple intelligences as a whole and self-regulated learning skills.

Boukouffa Iman (2013)

Academic self-efficacy and self-regulated learning strategies among adolescents with learning difficulties and normal.

The study aims to reveal the relationship between academic self-efficacy and self-regulated learning strategies and to determine whether there are differences between normal students and those with learning difficulties in their perception of their own abilities and which of the two categories uses self-regulated learning strategies more and whether the difficulties differ in their impact on adolescents according to gender. The study was applied to a sample of students estimated at 201 adolescents classified into two categories, the normal category (99) adolescents and the category of those with learning difficulties (102) adolescents, who are of the second, third and fourth intermediate and first secondary school level from the states of Batna and Jijel. The study used the following tools to collect data:

- 1- The academic self-efficacy scale developed by Ahmed Al-Zaq.
- 2- The self-regulated learning scale of Bardi and Arabized by Ahmed.
- 3- The illustrated intelligence test for children between the ages of 8 and 17 years.

The results obtained indicated that normal adolescents feel more confident in their academic competence and are more inclined to use self-regulated learning strategies in various dimensions compared to their peers with learning difficulties. The results also indicated that there are no differences between the sexes in terms of academic self-efficacy, while the results indicated that there are differences between the sexes in the dimension of recitation and memorization in favor of females. Previous studies target multiple intelligences and self-regulated learning strategies in different environments and age groups. It is clear from extrapolating their results that there is a difference in terms of the order of common intelligences among the target groups, as well as the order of self-regulated learning strategies. Some studies addressed the relationship between multiple intelligences and multiple variables such as academic achievement, problem solving, learning styles, inclination towards mathematics, some forms of thinking, memory factors, and life skills. Some studies also targeted the significance of differences according to the gender variable, and it is clear that most of the results of previous studies agree on the existence of differences in some multiple intelligences according to the gender variable. They also addressed the relationship between self-regulated learning strategies and the variable of academic achievement, as well as the differences between normal students and those with learning difficulties in terms of their use of different strategies in learning in its various dimensions. The current study also came to investigate the relationship between multiple intelligences and self-regulated learning and to increase research into the differences between the sexes (males, females) and the differences according to specialization and to know the patterns of multiple intelligence among students from scientific specializations and students from literary specializations.

Methodology:

The method followed in any study is usually inspired by the nature of the subject of study, and the types of the problem it addresses. Since the subject of the current study is multiple intelligences and their relationship to self-regulated learning strategies among a sample of university students, it became clear that the appropriate method is the descriptive method, and thus reaching reasonable results and facts about the phenomenon under study. (Rabhi, 2000, p. 30)

The study uses the descriptive method using one of its methods, which is the correlation method, through which it is possible to know whether there is a relationship between two or more variables, and then know the degree of that relationship. It was mentioned that one of the advantages of this method is that it can be used to study the relationship between a large number of variables in a single study, and this is an advantage that has a great impact on the study of human behavior, since that behavior is often not related to only one variable, and the researchers use this method due to its suitability in achieving the objectives of the study, as the study aims to know the relationship between two variables: multiple intelligences and self-regulated learning strategies.

1- Research community and sample:

A- Research community:

The research community is defined as the first-year master's students specializing in educational measurement and evaluation and special education at the University of Algiers 2 "Abou El Qasem Saadallah" and the fourth-year students at the Higher School of Professors in Kouba, Mathematics and Physics branches.

2- Research sample:

A- Exploratory research sample:

The aim of this sample was to calculate the psychometric properties of the Multiple Intelligences Scale prepared by (Adel Ryan) and the Self-Regulated Learning Strategies Scale prepared by (Purdie) "Purdie" translated by "Ahmed (Ibrahim, 2007). We relied on a sample of (35) students who were selected randomly. The characteristics of this sample can be explained as follows:

The exploratory sample consists of (10) males and (25) females, and Table No. (02) shows the distribution of the sample by gender.

Table No. (02): Distribution of percentages by gender for the survey sample

Gender	Number	Percentage
Males	10	28.57%
Females	25	71.43%
Total	35	100%

Table No. (03) shows: Educational level of the survey sample members

Educational level	Bachelor's	Master's
Number	13	22
Percentage	37.14%	62.86%

The exploratory sample members were selected from students of the Faculty of Social and Human Sciences, Abu Al-Kasim Saadallah - Algeria 2 - and the Multiple Intelligences Scale and the Self-Regulated Learning Strategies Scale were used with all sample members, and the scores were used to calculate the psychometric properties.

B - The basic study sample:

The study consisted of (127) male and female students who were selected by the intentional sample method according to the variables of gender and academic specialization.

Table No. (04) Shows: Distribution of the study sample individuals accordingly.

- Research tools:

Branch	Gender				Total	
	male		Female			
	Number	Percentage	Number	Percentage	Number	Percentage
Literary	24	34.29%	46	65.71%	70	55.12%
Scientific	15	26.32%	42	73.68%	57	44.88%
Total	39	30.61%	88	69.29%	127	100%

The researchers used two scales in the study:

3-1 - Multiple Intelligences Scale: Prepared by Adel Ryan, who developed it by benefiting from the McKenzie Scale (Meckenzie, 1999) which includes nine intelligences, with ten Items allocated to each intelligence, and the Chislett and Chapman Test (Chislett & Chapman, 2006) which contains (35) Items distributed over eight intelligences, and the Khazal Scale (Khazal, 2006) which includes (56) Items distributed over eight intelligences, with (7) Items allocated to each intelligence, and it was standardized in the Egyptian environment. In light of this, (48) Items were formulated in a positive manner, allocated to measure eight intelligences, which are: (Verbal/linguistic, logical/mathematical, visual/spatial, physical/motor,

social/interpersonal, personal/subjective, musical/rhythmic, natural), so that each paragraph was assigned a response scale according to the five-point Likert scale:

Always applies to me (5), often (4), sometimes (3), rarely (2), never (1).

A score is extracted for each scale by dividing the actual score by the possible full score, multiplying the result by 100%, $\text{actual score}/\text{maximum score} \times 100\%$ = (average score is 60%, high is 70% and above)

Validity and reliability of the scale:

A- Validity of the arbitrators: The tool was presented to a group of experienced and specialized arbitrators to know their opinion on the validity of the Items and their clarity from the educational and linguistic aspects of the subject to be studied, and the extent to which the paragraph belongs to the intelligence it measures

in light of its technical definition, and to express Notes: In case the paragraph needs to be modified, and in light of the referees' notes, which included modifying some linguistic formulations of some Items of the tool, the researchers made the proposed modifications to the tool consisting of (48) Items, distributed over eight intelligences. **B- Discriminant validity:** The researchers applied the tool to a survey sample consisting of (35) male and female students with the aim of calculating the

correlation coefficients between the average responses of the sample members to each paragraph of the study tool with the average response to the intelligence to which it belongs with the aim of verifying its discriminant validity.

Table No. (05) shows: the average responses of the sample members to each paragraph of the study tool, along with the average response to the intelligence to which it belongs.

Intelligence	Item No	Correlation Coefficient	Statistical Significance	Intelligence	Item No	Correlation Coefficient	Statistical Significance
Verbal	1	0.539	0.01	Social	5	0.62	0.01
	9	0.515	0.01		13	0.577	0.01
	17	0.601	0.01		21	0.521	0.01
	25	0.545	0.01		29	0.63	0.01
	33	0.506	0.01		37	0.653	0.01
	41	0.476	0.01		45	0.378	0.01
Logical	2	0.722	0.01	Personal	6	0.484	0.01
	10	0.465	0.01		14	0.631	0.01
	18	0.753	0.01		22	0.67	0.01
	26	0.445	0.01		30	0.694	0.01
	34	0.488	0.01		37	0.515	0.01
	42	0.797	0.01		46	0.592	0.01
Visual	3	0.387	0.01	Musical	7	0.32	0.01
	11	0.439	0.01		15	0.633	0.01
	19	0.608	0.01		23	0.703	0.01
	27	0.527	0.01		31	0.621	0.01
	35	0.544	0.01		39	0.756	0.01
	43	0.659	0.01		47	0.592	0.01

Physical(Bodily)	4	0.604	0.01	Naterly	8	0.636	0.01
	12	0.651	0.01		24	0.595	0.01
	20	0.222	0.01		16	0.575	0.01
	28	0.575	0.01		32	0.333	0.01
	36	0.481	0.01		40	0.676	0.01
	44	0.482	0.01		48	0.657	0.01

Table No. (05) shows that all correlation coefficients of the average responses to the Items of the tool with the average responses to the intelligence to which they belong ranged between (0.222-0.797) and all of them are statistically significant values at ($\alpha=0.01$). This indicates high internal consistency coefficients between the items and the axes they represent, and also indicates high and sufficient validity indicators that can be trusted in applying the current study. Scale stability: The stability of the tool was verified by extracting the internal consistency coefficient for the multiple intelligences tool as a whole and for each intelligence, using the (Cronbach's alpha) equation, and the table shows that.

Table No. (06) Shows: The stability coefficients of the multiple intelligences tool according to the dimension and the total score.

Intelligence	Reliability coefficient
Verbal/Linguistic	0.701
Logical/Mathematical Intelligence	0.748
Visual/Spasial Intelligence	0.702
Bodily/Kinesthetic Intelligence	0.689
Interpersonal Social Intelligence	0.721
Interpersonal Intelligence	0.738
Musical Intelligence	0.742
The Naturalist Intelligence	0.732
Total	0.783

It is clear from the scale scores as a whole that it has a high stability coefficient, as the value of the Cronbach's alpha coefficient reached (0.783), and the stability coefficients for the scale dimensions are also good; as these coefficients ranged between (0.689) and (0.73). Therefore, the Multiple Intelligences Scale can be considered statistically stable, and it enjoys appropriate stability for its various dimensions. 3-2- Self-regulated learning strategies scale: prepared by the researchers "Burdy" and modified for the Arab environment by "Ahmed Yahya Al-Zaq". The scale consists of (28) Items distributed equally in four dimensions:

- Setting the goal and planning and its Items: (1-5-9-13-17-21-25)

- Keeping records and monitoring and its Items: (2-6-10-14-18-22-26)
- Recitation and memorization and its Items: (3-7-11-15-19-23-27)
- Requesting social assistance and its Items: (4-8-12-16-20-24-28)

A score is extracted for each scale by dividing the actual score by the possible full score and multiplying the result by 100%, the actual score / maximum score × 100% = (the average score is 60%, high is 70% and above)

The validity of the scale and its reliability:

A- Validity of the arbitrators: The tool was presented to a group of experienced and specialized arbitrators to know their opinion about the validity of the Items and their clarity from the educational and linguistic aspects of the subject to be studied, and the extent to which the paragraph belongs to the intelligence it measures

In light of its technical definition, they suggested making some linguistic modifications to some vocabulary to suit the Algerian environment.

B- Discriminant validity:

The researchers applied the tool to a survey sample consisting of (35) male and female students with the aim of calculating the correlation coefficients between the average responses of the sample members to each paragraph of the study tool with the average response to the strategy to which it belongs with the aim of verifying its discriminant validity.

Table No. (07) shows: the average responses of the sample members to each paragraph of the study tool, along with the average response to the strategy to which it belongs.

Strategy	Item No	Correlation Coefficient	Statistical Significance	Strategy	Item No	Correlation Coefficient	Statistical Significance
Setting the goal and planning	1	0.616	0.01	a Recitation and memorization	3	0.696	0.01
	5	0.289	0.01		7	0.465	0.01
	9	0.816	0.01		11	0.739	0.01
	17	0.671	0.01		15	0.587	0.01
	25	0.779	0.01		19	0.71	0.01
	33	0.808	0.01		23	0.719	0.01
	41	0.808	0.01		27	0.719	0.01

Record keeping and monitoring	2	0.565	0.01	Requesting social assistance	4	0.622	0.01
	6	0.565	0.01		8	0.607	0.01
	10	0.297	0.01		12	0.607	0.01
	18	0.509	0.01		16	0.639	0.01
	26	0.352	0.01		20	0.694	0.01
	34	0.445	0.01		24	0.668	0.01
	42	0.461	0.01		28	0.637	0.01

We note from Table No. (07) that all items are significant at the level of (0.01), which indicates high internal consistency coefficients between the items and the axes they represent, and also indicates high and sufficient validity indicators that can be trusted in applying the current study.

Scale stability: The stability of the tool was verified by extracting the internal consistency coefficient for the self-regulated learning strategies tool as a whole and for each strategy, using the equation (Cronbach's alpha) with reference to the results reached by the researchers who applied the same scale, and the table shows that.

Table No. (08) shows: Stability and internal consistency coefficients for the dimensions of the self-regulated learning scale

Dimension	According to "Burdy" Repetition Correlation	According to "Ahmed" Repetition Correlation	According to "Al-Jarrah" Internal consistency Correlation	According to "Al-Jarrah" Internal consistency Correlation	Internal consistency Correlation According to researchers
Setting the goal and planning	0.72	0.83	0.73	0.61	0.767
And monitoring Keeping records	0.69	0.78	0.64	0.66	0.733
Reciting and memorizing	0.76	0.84	0.65	0.68	0.759
Requesting social assistance	0.81	0.79	0.78	0.75	0.762
Total	/	/	/	/	0.896

The scale scores as a whole show that it has a high stability coefficient, as the value of the Alpha Cronbach coefficient reached (0.896), and the stability coefficients for the scale dimensions are also good; as these coefficients ranged between (0.73) and (0.76), and therefore the scale of self-regulated learning strategies can be considered statistically stable, and it has appropriate stability for its various dimensions.

4- Statistical methods used:

The researchers used a number of statistical methods aimed at verifying the study hypotheses, and these methods are:

A- Arithmetic averages, standard deviations and graphs, in order to guide them in the analysis and interpretation of the study results.

B- Pearson's correlation coefficient; to ensure the achievement of the first hypothesis, which seeks the existence of Relationships between the variables under study.

C- T-test with the aim of revealing statistically significant differences between sample members according to academic specialization (literary - scientific).

Presentation and discussion of results:

Introduction

In this chapter, the researchers review the results they reached through analyzing the statistical data, arranged according to the study hypotheses. The researchers used the Statistical Package for Social Sciences (SPSS) to analyze the data, where they coded the data extracted from the application on the sample as a whole (127). The study gave the following results:

1- Presentation and discussion of the results of the first hypothesis, which stated that:

"There is a statistically significant relationship at a significance level of ($0.05 \geq \alpha$) between multiple intelligences and self-regulated learning strategies among students of literary branches and students of scientific branches."

To verify the validity of this hypothesis, the researchers used the Pearson correlation coefficient to calculate the correlation coefficient between the total score on the Multiple Intelligences Scale and self-regulated learning strategies. The performance scores for each dimension on the Multiple Intelligences Scale and the Self-regulated Learning Strategies Scale were also calculated for all sample members ($n = 127$).

Table No. (09) Shows: The correlation between multiple intelligences and self-regulated learning strategies

Multiple intelligences	Self-regulated learning strategies	
	Correlation coefficient	Significance level
Verbal/linguistic	0.010-	Not significant
Logical/mathematical	0.137	Not significant

Visual/spatial	0.215	0.05
Physical/kinesthetic	0.149	Not significant
Social/interpersonal	0.148	Not significant
Personal/intrapersonal	0.003	Not significant
Musical/rhythmic	0.081-	Not significant
Natural	0.167	Not significant
Total	0.189	0.05

The previous table shows: There is a weak, statistically significant positive correlation between multiple intelligences as a whole and self-regulated learning strategies, as the value of "r" reached (0.189) at the significance level ($\alpha \leq 0.05$)

- There is a statistically significant positive correlation between the intelligence type (visual/spatial) and self-regulated learning strategies, as the value of the correlation coefficient reached (0.21) at the significance level ($\alpha \leq 0.05$).

- There is no statistically significant correlation at the significance level ($\alpha \leq 0.05$)

between the following intelligences and self-regulated learning strategies:

(verbal/linguistic, logical/mathematical, physical/kinetic, social/interpersonal, personal/individual, musical/rhythmic, natural).

- According to the researchers, this may be due to the fact that the sample on which the research tools were applied may not be fully aware of its possession of multiple intelligences and the ways to use and benefit from them in building learning strategies. The researchers also interpreted this result in light of the study sample's superficial use of self-regulated learning strategies, or the difficulty in using them, which is reflected in the non-significant correlation coefficients.

- The researchers also interpreted the presence of a positive and significant correlation between visual intelligence and self-regulated learning strategies to the teaching system's reliance on audio-visual means and media, especially the Higher School for Teachers, which develops visual/spatial intelligence in students.

To the extent that the researchers have seen, these results contradict what researcher Ryan Adel has reached, who has reached the presence of a positive statistical relationship between all intelligences and self-regulated learning skills.

2- Presentation and discussion of the results of the second hypothesis, which states that:

"There are statistically significant differences at a significance level of ($0.05 \geq \alpha$) between students of literary specializations and students of scientific specializations in their multiple intelligences averages."

To verify this hypothesis, the researchers calculated the significance of the differences using the "T" test for two independent samples, between the average scores of students of literary specializations and students of scientific specializations in the multiple intelligences scale.

Table No. (10) shows the significance of the differences between students in literary specializations and students in scientific specializations in the average scores of students according to specialization in the Multiple Intelligences Scale.

Multiple Intelligences	disciplinary	Number of individuals	Arithmetic mean	Standard deviation	(t) Value	Significance level
score	Literary	70	167.81	16.053	0.350-	Not significant
	Scientific	57	166.81	16.257		
Verbal/linguistic	Literary	70	21.26	3.323	2.054	0.04
	Scientific	57	20.44	3.327		
Logical/mathematical	Literary	70	20.69	4.172	5.268-	0
	Scientific	57	24.11	2.845		
Visual/spatial	Literary	70	20.23	3.572	2.872	0.05
	Scientific	57	22.11	3.735		
Physical/kinesthetic	Literary	70	21.03	3.818	0.581-	Not significant
	Scientific	57	21.39	3.11		
Personal/intrapersonal	Literary	70	23.64	7.083	2.619	0.01
	Scientific	57	21.11	3.559		
Social/interpersonal	Literary	70	24.27	3.927	0.818-	Not significant
	Scientific	57	24.77	2.964		
Musical/rhythmic	Literary	70	17.17	4.693	1.826	Not significant
	Scientific	57	15.65	4.658		
Natural	Literary	70	19.13	3.856	2.543	0.01
	Scientific	57	17.25	4.376		

It is clear from the table that the arithmetic average values of the results of the scores of students of literary specializations and students of scientific specializations in the Multiple Intelligences Scale are equal, and to know whether this value is statistically significant, the value of the "t" test was calculated for two independent samples,

The previous table shows that the value of the "t" test was not significant in the total score on the Multiple Intelligences Scale and also the following multiple intelligences types:

Bodily/kinesthetic intelligence, social/interpersonal intelligence, musical/rhythmic intelligence.

While the "t" value was significant at a significance level ($0.05 \geq \alpha$) in each of the following multiple intelligences:

Verbal/linguistic intelligence, logical/mathematical intelligence, visual/spatial intelligence, personal/individual intelligence, natural intelligence.

Based on this result, the second hypothesis was partially verified, which states that:

"There are statistically significant differences between students of literary branches and students of scientific branches in their averages of multiple intelligences"

Accordingly, we can conclude the following result: There are statistically significant differences at a significance level ($0.05 \geq \alpha$) between students of literary specializations and students of scientific specializations in their averages of multiple intelligences"

According to the researchers, these differences may be due to the qualitative difference between literary specializations and scientific specializations, and to the difference in the nature of each specialization and the difference in academic tasks and content of academic subjects and the different tasks they require.

3- Presentation and discussion of the results of the third hypothesis, which states that:

"There are statistically significant differences at a significance level ($0.05 = \alpha$) in the multiple intelligences of students of literary branches and scientific branches attributed to the gender variable (males, females).

To verify this hypothesis, the researchers calculated the significance of the differences using the "t" test for two independent samples, between the averages of the scores of male and female students in the scale of multiple intelligences.

It is clear from the table that the arithmetic average values of the results of the scores of students of literary specializations and students of scientific specializations in the Multiple Intelligences Scale are equal, and to know whether this value is statistically significant, the value of the "t" test was calculated for two independent samples,

The previous table shows that the value of the "t" test was not significant in the total score on the Multiple Intelligences Scale and also the following multiple intelligences types:

Bodily/kinesthetic intelligence, social/interpersonal intelligence, musical/rhythmic intelligence.

While the "t" value was significant at a significance level ($0.05 \geq \alpha$) in each of the following multiple intelligences:

Verbal/linguistic intelligence, logical/mathematical intelligence, visual/spatial intelligence, personal/individual intelligence, natural intelligence.

Based on this result, the second hypothesis was partially verified, which states that:

"There are statistically significant differences between students of literary branches and students of scientific branches in their averages of multiple intelligences"

Accordingly, we can conclude the following result: There are statistically significant differences at a significance level ($0.05 \geq \alpha$) between students of literary specializations and students of scientific specializations in their averages of multiple intelligences"

According to the researchers, these differences may be due to the qualitative difference between literary specializations and scientific specializations, and to the difference in the nature of each specialization and the difference in academic tasks and content of academic subjects and the different tasks they require.

3- Presentation and discussion of the results of the third hypothesis, which states that:

"There are statistically significant differences at a significance level ($0.05 = \alpha$) in the multiple intelligences of students of literary branches and scientific branches attributed to the gender variable (males, females).

To verify this hypothesis, the researchers calculated the significance of the differences using the "t" test for two independent samples, between the averages of the scores of male and female students in the scale of multiple intelligences.

Table No. (11) shows the significance of the differences between students in literary specializations and students in scientific specializations in the average scores of students according to gender on the Multiple Intelligences Scale.

Multiple Intelligences	Multidisciplinary	Number of individuals	Arithmetic mean	Standard deviation	(t) Value	Significance level
Score	Male	39	168.36	13.168	0.514	Not significant
	Female	88	166.92	17.277		
Verbal/linguistic	Male	39	21.41	3.416	0.662	Not significant
	Female	88	20.98	3.356		
Logical/mathematical	Male	39	22.97	3.55	1.508	Not significant
	Female	88	21.89	4.167		
Visual/spatial	Male	39	21.18	4.012	0.209	Not significant
	Female	88	21.02	3.651		
Physical/kinesthetic	Male	39	21.79	2.839	1.444	Not significant
	Female	88	20.92	3.752		
Personal/intrapersonal	Male	39	23.87	8.918	1.330	Not significant
	Female	88	21.9	3.785		
Social/interpersonal	Male	39	24.95	3.554	0.959	Not significant
	Female	88	24.3	3.511		
Musical/rhythmic	Male	39	14.46	4.025	3.569	0.01
	Female	88	17.39	4.747		
Natural	Male	39	17.52	4.356	0.99	Not significant
	Female	88	18.53	4.108		

It is clear from the table that the arithmetic average values of the results of the scores of male and female students in the Multiple Intelligences Scale are equal, and to know whether this value is statistically significant, the value of the "t" test was calculated for two independent samples, and the

previous table shows that the value of the "t" test, which was not significant in the total score of the scale and all multiple intelligences except for musical/rhythmic intelligence.

Based on this result, the third hypothesis was mostly rejected, which states:

"There are statistically significant differences at a significance level ($\alpha = 0.05$) in the multiple intelligences of students in the literary and scientific branches attributed to the gender variable (males, females)."

Accordingly, we can conclude the following result: There are no statistically significant differences between male and female students in the averages of multiple intelligences among students of the Department of Educational Sciences at Abu Al-Kasim Saadallah University and students of the Higher School for Professors - Quba - "

Except for intelligence (musical/rhythmic) which shows statistically significant differences at a significance level ($0.01 = \alpha$) in favor of females.

This result is attributed to the diversity of musical intelligence stimuli available to female students within the family, as well as the prevailing customs accepting girls' participation in events that enhance this type of intelligence,

Unlike males who are considered unacceptable to practice these activities, and it is also due to the tendencies of female students due to their feminine nature and family upbringing to listen to music and sensitivity to different sounds, as we find many girls humming while doing any work, especially inside the house, and they prefer to do their work while listening to music.

This result is almost completely consistent with the study conducted by Azou Ismail Afana and Naila Najib Al-Khazindar except for the type of intelligence (Musical/Rhythmic) which the researchers achieved statistically significant differences at a significance level of ($\alpha=0.01$).

This result also partially agrees with the study conducted by Adel Ryan in the presence of differences between males and females in intelligence (musical/rhythmic) and in the absence of significant differences

in the patterns of multiple intelligences as a whole and in each of logical/mathematical intelligence, visual/spatial intelligence, social/interpersonal intelligence and personal/individual intelligence, all of which are statistically insignificant values at a level of ($\alpha=0.05$).

4- Presentation and discussion of the results of the fourth hypothesis, which states:

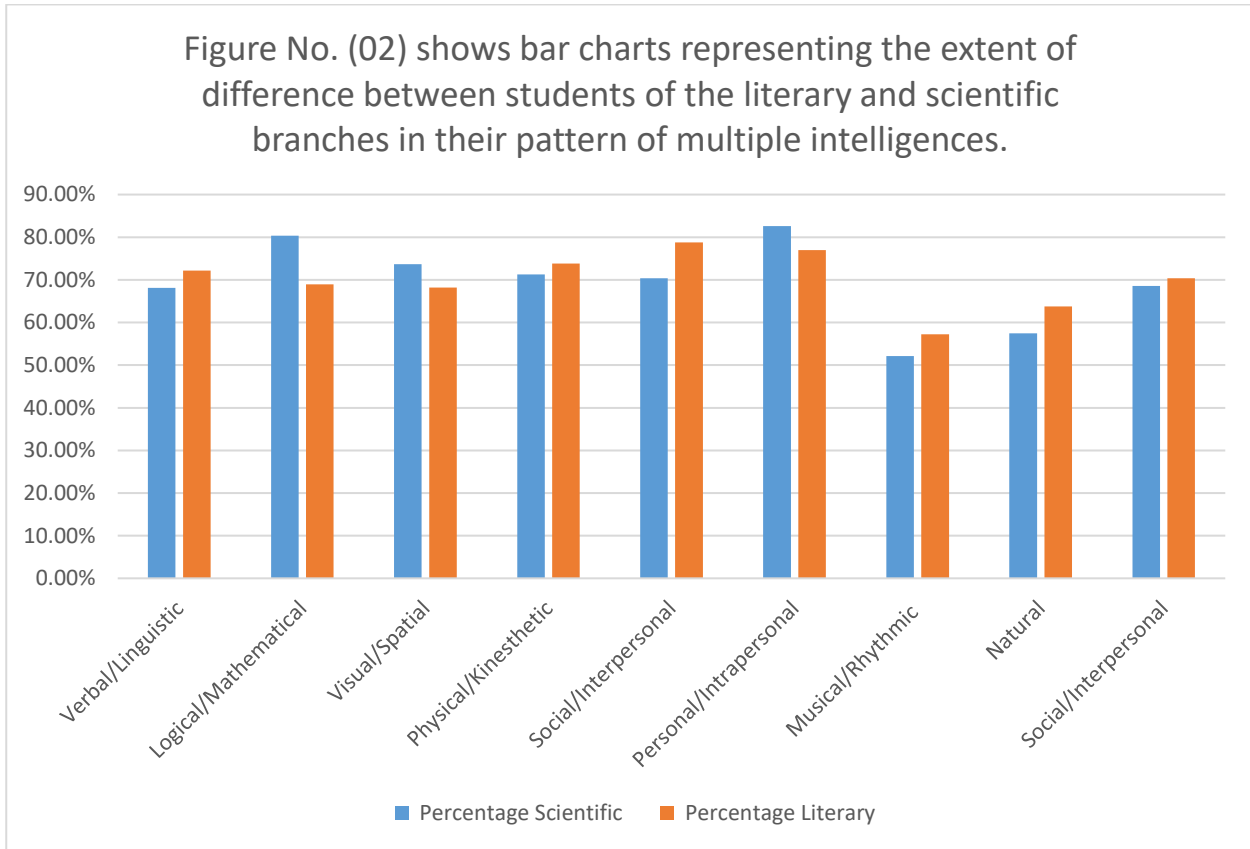
"Students of literary branches differ from students of scientific branches in their patterns of multiple intelligences." To answer this hypothesis, the researchers applied the Multiple Intelligences Scale to students of scientific specializations and students of literary specializations, and the total score was calculated in the following manner: $\text{Actual score}/\text{maximum score} \times 100\% =$ (average score is 60%, high is 70% and above) for each of the multiple intelligences among the students in the study sample, as shown in the table and the bar charts.

Table No. (12) Shows the types of multiple intelligences for both students in literary specializations and students in scientific specializations.

Dimension	Number	Items	Literary branches	Scientific branches
Verbal/linguistic	1	I enjoy reading books	72.86%	69.47%
	2	I am interested in difficult and mysterious crossword puzzles	64.00%	72.63%
	3	I have a good memory for dates, people's names and places	69.14%	54.39%
	4	I make sure to take notes that help me understand and remember things that concern me	74.29%	69.47%
	5	People ask me about the meanings of words	67.14%	62.81%
	6	I can talk to others and engage in dialogue with them	85.71%	80.00%
	Overall percentage on the dimension			72.19%
Overall percentage on the dimension	1	I can perform mental arithmetic operations quickly and easily	63.14%	69.12%
	2	I believe that everything has a logical explanation	83.43%	87.37%
	3	I can solve mathematical problems easily	59.71%	69.82%
	4	I prefer logical and organized sequences in understanding things	83.14	89.12%
	5	I prefer logical and organized sequences in understanding things	72.00%	81.75%
	6	I prefer mathematics over other subjects	52.29%	84.91%
	Overall percentage on the dimension			68.65%
Visual/spatial	1	I enjoy solving mazes and visual puzzles	71.43%	85.96%
	2	I easily remember things organized in drawings and shapes	76.29%	82.81%
	3	I like drawing and prefer it over writing	54.86%	57.19%
	4	Geometry topics are easier for me than algebra topics	75.71	81.75%
	5	Geometry topics are easier for me than algebra topics	67.43%	63.51%
	6	I enjoy drawing and designing geometric shapes	58.86%	70.88%
	Overall percentage on the dimension			68.19%

Body/Motor	1	I enjoy manual work in craft activities such as decoration and carpentry	55.43%	54.74%
	2	I enjoy playing sports	71.43%	70.18%
	3	I learn about things by touching them	69.43%	67.02%
	4	I get new ideas when I do any motor activity	71.14%	72.98%
	5	I get new ideas when I do any motor activity	82.86%	85.61%
	6	I use physical movements to express my ideas	70.29%	77.19
	Overall percentage on the dimension			73.81%
I use physical movements to express my ideas	1	I like working with others in groups	73.14	58.60%
	2	I like participating in clubs and cultural and social activities	67.14%	59.65%
	3	I always make sure to make new friends	74.00%	72.63%
	4	I have the ability to influence others	75.43%	70.18%
	5	I have the ability to influence others	92.00%	70.18%
	6	I have the ability to influence others	91.14%	90.88%
	Overall percentage on the dimension			78.81%
Personal/Individual	1	I determine my goal in life and think about it regularly	85.14%	84.21%
	2	I allocate time to reflect on all aspects of my life	74.57%	72.98%
	3	I feel Independent in my thinking	80.57%	81.75%
	4	I have the ability to make my own decisions	85.14%	87.02%
	5	When I work alone, I achieve better than when I work in groups	77.71%	82.81%
	6	I have the ability to identify my strengths and weaknesses	82.29%	86.67%
	Overall percentage on the dimension			77.00%
Musical/rhythmic	1	I am attracted to regular poetry in one café	75.71%	70.88%
	2	I am more interested in musicals and songs than other plays	44.86%	39.65%

	3	I can perform a tune or rhythm after hearing it	57.14%	56.49%
	4	I hum and sing when I do something	69.43%	63.86%
	5	I have Ability to distinguish and recognize musical pieces, their rhythm and harmony	57.14%	42.46%
	6	I prefer listening to music while studying	39.14%	39.65%
	Overall percentage on the dimension		57.24%	52.16%
Natural	1	I care about following environmental issues	61.71%	55.44%
	2	I enjoy traveling, roaming and camping	78.00%	61.4
	3	I enjoy studying biology, botany and zoology	65.71%	60.70%
	4	I like to classify things into similar groups	72.86%	75.44%
	5	I care about planting trees and raising animals	65.14%	56.49%
	6	I like to collect samples of rocks and plant leaves	39.14%	35.44%
	Overall percentage on the dimension		68.65%	57.49%
General Total			70.38%	68.59%



It is clear from the two previous tables and the graph that the patterns of intelligence prevailing among students through the application of the Multiple Intelligences Scale according to the specialization came out different in terms of order and percentage, and we summarize them in the table as follows:

Table No. (13) Represents: The extent of the difference between students of literary and scientific branches in their multiple intelligence patterns

Intelligence	Percentage		Rank	
	Scientific	Literary	Scientific	Literary
Verbal/Linguistic	68.13%	72.19%	6	4
Logical/Mathematical	80.35%	68.95%	2	5
Visual/Spatial	73.68%	68.19%	3	6
Physical/Kinesthetic	71.29%	73.81%	4	3
Social/Interpersonal	70.35%	78.81%	5	1
Personal/Intrapersonal	82.57%	77.00%	1	2
Musical/Rhythmic	52.16%	57.24%	8	8
Natural	57.49%	63.76%	7	7
General Total	68.59%	70.38%		

The table shows that the most common types of intelligence , among students of literary branches are social/interpersonal intelligence with a percentage of (78.81%) at a high level, and in second

place came personal/individual intelligence with a percentage of (77.00%) at a high level, and bodily/kinetic intelligence came in third place with a percentage of (73.81%) at a high level, and in fourth place came verbal/linguistic intelligence with a percentage of (72.19%) at a high level. As for the following types of intelligence: in fifth place came logical/mathematical intelligence with a percentage of (68.95%), and in sixth place came (visual/spatial) intelligence with a percentage of (68.19%) and in seventh place came natural intelligence with a percentage of (63.76%), which came at an average level.

In eighth place came musical/rhythmic intelligence with a percentage of (57.24%), which means that students of literary branches in this sample do not enjoy this type of intelligence. The progress of social intelligence is attributed to the fact that students of literary branches belong to the College of Social Sciences and are well aware of the importance of teamwork and all activities, so that students tend to practice diverse social roles in response to tendencies of building the self and achieving the collective interest.

The personal intelligence obtaining the second rank is due to a set of factors related to the requirements of the academic stage that students are going through, in terms of their need to plan their study programs and organize their time effectively, determine their goals accurately, diagnose their strengths and weaknesses, focus on their studies, and reflect on their achievements, to a large extent in enhancing the skills of planning, organization and independence among students at this stage.

The physical intelligence obtaining the third rank is due to the awareness of students of literary branches of the importance of physical-motor development and the strength and effectiveness of motor coordination and the ability to express gestures and signs in communication and achieving the goal.

The linguistic intelligence obtaining the fourth rank is due to the nature of literary branches that depend on the strength of the student's linguistic stock and the multiplicity of concepts and the need for philosophical thinking and creative thinking.

As for the delay in logical intelligence, spatial intelligence and natural intelligence, it is due to the type of the majority of students who branch out from literary branches in secondary education, which does not give great importance to developing this type of intelligence, as well as to the nature of the prevailing teaching practices, as they focus mostly on recitation, explanation and interpretation, while neglecting the use of visual media and linking learning to reality, the environment and the social environment, with the student's lack of awareness of the importance of nature as a source of inspiration and correct thinking stemming from the ability to contemplate the universe and the power of the Almighty Creator. As for musical intelligence, it came in last place and at a weak rate that does not indicate that students of literary branches enjoy this type of intelligence, and the reason may be due to the fact that students do not care about music, especially males, or the religious aspect that sets controls for this characteristic or the role of education and social upbringing in developing this type of intelligence. The table also shows that the most common types of intelligence among students of scientific branches are personal/individual intelligence with a percentage of (82.57%) at a high level, and in second place came logical/mathematical intelligence with a percentage of (80.35%) at a high level, and in third place

came visual/spatial intelligence with a percentage of (73.63%), and in fourth place came physical/kinetic intelligence with a percentage of (71.29%) at a high level, and in fifth place came social/interpersonal intelligence with a percentage of (70.35%) at a high level. As for the following types of intelligence: in sixth place came verbal/linguistic intelligence with a percentage of (68.13%) at a medium level. In seventh place came naturalistic intelligence with a percentage of (57.49%), and in eighth place came musical/rhythmic intelligence with a percentage of (52.16%), which means that students of literary branches in this sample do not enjoy these two types of intelligence. The advancement of personal intelligence and logical intelligence in the first and second place is attributed to a set of factors related to the academic requirements and type of academic specialization of students in scientific branches, in terms of their need to perform mathematical operations quickly and accurately and the ability to plan their study programs and organize their time effectively, determine their goals accurately, diagnose their strengths and weaknesses, focus on their studies, and reflect on their achievements, to a large extent in enhancing the planning, organization and independence skills of students in these branches. The fact that spatial intelligence, physical intelligence and social intelligence ranked third, fourth and fifth is due to the nature of the teaching practices prevailing in the Higher School of Professors, which focus not only on presentation, explanation and interpretation, but also on the use of visual media and linking learning to reality, the environment and the social environment, to accustom the student and give him the ability to teach and control classes. The linguistic intelligence ranked sixth perhaps due to the lack of awareness among students of the scientific branches of the importance and strength of the linguistic stock of the student teacher in the future and the multiplicity of concepts and the need for philosophical thinking and creative thinking. This is also due to the fact that students of these branches studied in secondary education in scientific departments that do not give great importance to literary subjects and do not focus on developing students' linguistic abilities.

The musical intelligence and natural intelligence ranked second to last and at a weak rate that does not indicate that students of scientific branches enjoy these two types of intelligence. The reason may be due to the fact that students do not care about music, especially males, or the religious aspect that sets controls for this characteristic or the role of education and socialization in developing this type of intelligence and the length and intensity of the program that does not leave a gap in time that enables the student to interact with nature and benefit from it.

Based on this result, the fourth hypothesis was accepted, which states that:

"Students of literary branches differ from students of scientific branches in their multiple intelligence patterns."

Accordingly, we can conclude the following result:

There is a clear difference in the patterns of multiple intelligences among students of literary and scientific branches in terms of the degree expressed as "relative" and arrangement.

Conclusion

From the above research and through the results obtained and after the conclusion, it is clear that the theory of multiple intelligences as a concept and as a procedure or use in life falls under one idea summarized by Imam Abu Hamid Al-Ghazali in his saying: "Every fabric is unique."

This means that creativity is an open field and that skill is not imitation but rather innovation and invention, which comes through individual and collective work, valued by the spirit of cooperation and integration between the capabilities of one individual and collective communication, and therefore the truth of what appears to us as shortcomings in one of the individuals is nothing but a difference in the types of capabilities that he deals with, and therefore it was necessary before judging him to teach him in the appropriate way for the type of his capabilities and develop other skills.

As a result of this matter, researchers made strenuous efforts to build curricula, programs, methods and methods of evaluation that are consistent with the values and principles of this theory, which came with new scientific additions provided by the theory of multiple intelligences in the psychological and educational field.

Despite this contribution, the theory has been subjected to a series of harsh criticisms, including:

- It is not new, as it is still as it was addressed by cognitive psychology and education.
- It has not been precisely identified and defined, and some of the abilities it relies on are preparations and talents, not abilities.
- It has cultural implications, meaning that the individual's culture plays a role in determining the strengths and weaknesses of the individual's intelligence.
- It lacks national standards, meaning it is difficult to set standards at the national level for the theory of multiple intelligences, which makes it difficult to make comparisons and classifications for students within the same class.
- It is an ideal theory with an educational thought.

Limitations and Future Studies

- Conduct more studies on the patterns of multiple intelligences among students in various specializations.
- Help students discover the patterns of intelligences they possess and guide and train them by specialists to benefit from them.
- The necessity of the educational system adopting audio-visual media and technologies and linking education to social reality and opening the way for students to conduct field visits and training to develop their abilities and bring them closer to reality.
- Introducing the theory of multiple intelligences to educational practitioners and those responsible for building educational programs and increasing their awareness of it.

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