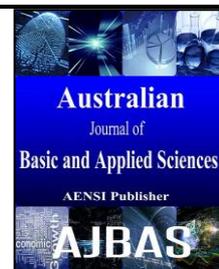




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Mental imagination and its relationship to patterns of learning and thinking among university students

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ABSTRACT

The objects of current research to identify- :

- 1- Ability to mental imagination at Babylon University level students
- 2- Statistically significant differences in the level of mental ability to imagine at the University of Babylon students, in accordance with the variable specialty of study
- 3 -Patterns of learning and thinking among students of the University of Babylon.
- 4 -Statistical significance of the differences in the patterns of learning and thinking among students of the University of Babylon variable in accordance with the specialty of study.
- 5- The relationship between relational mental imagination and patterns of learning and thinking among students of the University of Babylon.

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INTRODUCTION

In order to achieve the objectives of the research were to adopt a test of mental imagination, drawn up by the researcher in the study of the Master which consists of (15) form as final as well as the adoption of a measure (Ali) to measure patterns of learning, thinking, and which consists in its final form of (35) items each of which is composed of two alternatives represent one right style, while the other left style and choice of representing both alternatives represents the integrated style. Tools have been applied to the author of a sample of 420 students from the university students. At analyzing the data statistically using the t-test for one sample, test (T) for two independent samples, chi square test for good conformity and Pearson correlation coefficient appeared to request the university do not have the ability to mentally imagine. Because the arithmetic mean derived less from the middle premise for testing and teams with a statistically significant at the level of significance (0.05). Also found that the pattern of the students is the pattern left, followed by the pattern right, then pattern integrated. The ability to have mental imagination for scientific specialization best with humanitarian specialization. It also, presence a statistically significant difference in the patterns of learning and thinking accordance with variable specialization. Characterized scientific specialization as one with the right pattern and integrated pattern. While, characterized with specialization human being with a left pattern. As the existence of a positive correlation between mental imagination and pattern right followed by integrated, while were not statistically significant correlation between mental imagination and pattern left. And emerged on these results a number of recommendations and suggestions.

The problem study:

The problem of current research in fact attempts to answer the following questions- :

- 1- Does the university students have the ability to mentally imagine? Is that capacity in accordance with a course of study for students' differ?*
- 2- What patterns of learning and thinking among university students? Are those patterns vary in accordance with the variable specialty of study for students?
- 3- What relationship between imagination and mental patterns of learning and thinking among university students?

Research objects:

The current research aims to identify- :

- 1- Level of Ability to mental imagination at Babylon University students.
- 2- Statistically significant differences in the level of mental ability to imagine at the University of Babylon students, in accordance with the variable area of study.
- 3- Patterns of learning and thinking among students of the University of Babylon.
- 4- Statistical significance of the differences in the patterns of learning and thinking among students of the University of Babylon variable in accordance with the specialty of study.
- 5- The relationship between relational mental imagination and patterns of learning and thinking among students of the University of Babylon

Borders Search:

The current research is limited to students of the University of Babylon / study morning for the academic year 2012-2013.

Define terms:

First: Palm mental:

He knew several definitions, including- :

1- Port (Bower, 1970):

it is image or fantasy mnemonic for something or event gives the subject experience some structural information similar to those educational experiences undergone by the learner through the cognitive processes of the direct neighborhood of the event or thing (Bower, 1970, P: 90)

2- Spearman:

mental ability rely on recognize relationships between things that have entered our experience and then infer something new from these relationships. (Abdul-Sahib, 2013, p. 13) Spearman researcher has adopted the definition of definition in theory because it was adopted in built to test the ability to mental imagination.

The operational definition of mental Imagine it is the degree to which obtained a university student on the ability to imagine the mental test prepared by the researcher.

Second, the patterns of learning and thinking:

Torrance knew (use one half of the right brain, left, integrated in the mental processes or behavior of the individual tends to rely on one of the two halves more than the other, or the halves together) (Turaihi, 1998, p. 15)

The researcher has adopted this definition in the definition theoretically examined.

The operational definition:

It is the degree to which the respondent obtained the paragraph styles of learning and thinking prepared by the scale (at 0.2009)

Theoretical background:

First, mental imagination:

Different theories that explain mental imagination because of the different trends and mental outlook, which was launched them in the interpretation of this concept Among these theories.

1- psychoanalytic theory:

(Freud) has interpreted the imagination that it arises from a conflict between myself instinctive levels of sexual and aggressive instincts in the form acceptable to the community (Abdul Ghaffar 0.1977, p. 179)

(Carl Jonk) and owners have focused on mental imagination and dreams, and its relationship to the unconscious behaviors and show them that imagination is an essential source of creativity (Khalifa, and Abdul Hamid, 1990, p. 50)

2 behavioral theories:

After the behavioral school owners refused for nearly thirty years to the subject of mental imagination mental and other operations of this school began wryly these concepts and re-emergence of the scientific theories and their research (kessel, 1972, p: 149)

As behaviorism stressed the importance of mental imagination in psychotherapy process as pairing between granulocytes (love the stuff) for psychiatric patients and rewarding favorite responses to get rid of fears mood among People (singer, 1974.p: 7)

3 .Cognitive theories:

We have interpreted the world (Sheehan) mental imagination on the grounds that the process representation retrieval of information received by the senses and conservation in the brain, and then retrieve the information formats and new forms differ from the real information of things (neil, A, stillings & elal, 1987, p: 36)

In other words, imagine exists with individual existence tone spin heard, someone is only imagine is why we can say it's perceptions imaginative as imagined capita he smell or taste or hear it is mainly to realize is if the perception, but are imaginary. (Sheehan, 1972, p: 169)

Second: the patterns of learning and thinking:**1 .The classical theory of the simple requirement:**

This theory attributed to the Russian scientist (Ivan pvljov) that the Department of neural activity in humans to the highest and the lowest, while the highest is acquired and doing hemisphaeria in the brain. The minimum nervous activities is inherited from the biological and exercise the brain lowest sections of the central nervous system, but in terms of young people and upgrading acquired with the type (human and animal). (Jafar 0.1978, p. 305)

2 .Activated brain theory of Roger Sperry:

He has been detected the hemispheres of the brain are identical in the shape either in terms of psychological functions. And think they are different from each other halve left responsible for language and logic, math and writing, while the right in the imagination and visualization, creativity and awareness of spatial relationships (Balto 0.2003, p. 2)

3 .Harrison and Bramson theory:

This theory explained that the differences in the mid-term control of the brain give rise to differences in thinking. he lead to real preferences in thought patterns so the left half control lead to the use of patterns, imaginative and realistic thinking, either controlled by the right hemisphere may lead to the use of patterns of structural and ideal thinking (Muslim, 2007, p. 69)

4 .Health intellectual theory to Hermann:

Herman has been divided in brain theory into four parts, surpassing the world the theory of Roger Sperry, which was divided into two halves of the brain, according to this theory, each department to handle the tasks and mentality as follows- :

The upper left side (A) the functions of the analysis, facts, evaluation, results.

Upper right section (D) and the functions of strategic thinking, creative, multiple choice

The bottom section of the left (B) The functions of planning, implementation, procedures, differentiation, time management.

The bottom section of the right (C) and the functions of feelings and emotions, relationships with others, the meanings of humanity. (Al-Tikriti 0.2002, S6-7)

5 .Torrance theory:

this is one of the most important theories that explain the functions of the two brain hemispheres. where he sees that individuals tend to use one half of the left and right brain in learning and thinking process and there is a kind preferred to use both sides of any integrated approach. Torrance has a list of functions of the hemispheres of the brain left and the right characterized as (intuitive, holistic, non-verbal, impulsive, non-serious) either left it (logical, sequential, verbal organizer, seriously) The integrated is the one who performs the functions of the two halves of the same quality (Ali 0.2009, p. 40)

Research methodology and procedures:

The research methodology is based on the nature of the problem to be studied and under that was adopted descriptive approach style and study the correlation for the convenience of the problems of research and its goals and achieve those goals have been identified research and appointed and tools society then applied and processing data statistically, as follows...- :

IFind community:

A search community at the University of Babylon students / Morning The study of the academic year (2012- 2013), which consists of (8513) students distributors, according to specialization of (3158) students of scientific specialization by (37%) The number of students Specialization humanitarian reached (5355) students and by (63%)

2 .Sample Search:

Selected sample of search by style class random with proportional distribution and (5%) of the research community, amounting to 420 students and faculties DFA (science and engineering) and the rate of (158) students and faculties Ansantin two (Education for Humanities and the Arts) and the impact of (262) students as shown in the table below - :

Table 1: The research sample, according to scientific and humanitarian colleges

College	scientific colleges		colleges humanity	
	Engineering	Sciences	Education Sciences Humanities	Arts
Number	131	131	79	79
Total	262		158	

3 . Research tools:

To achieve the Objectives of the research, the adoption of two tools - :

1- Test of mental imagination:

This test has been prepared by (Abdul-Sahib 0.2013). It consists in its final Formula (15) form. Where is given Correct answer (1) while the wrong answer given (zero) . Note that the test has been verified virtual test for honesty as well as the sincerity of construction through indicators of excellence between the two extremes and the relationship of para-class faculty, along with the expense of the difficulty of paragraphs coefficient. The consistency check shoved through re-testing, where the value of the reliability coefficient (0.83) as well as through internal homogeneity according to the equation Keodr Richardson (20) as the value of reliability coefficient (0.89) was also calculate the standard error of the two methods as it hit (1,676 and 1238) in the retest and internal homogeneity, respectively.

The patterns of learning and thinking scale:

The preparation of this scale before (Ali, 2009), which consists in the finalization of (35) items. each of which consists of two paragraphs, one representing the function of the right hemisphere and the other representing the function of the left half and choose both paragraphs is an integrated sovereignty has been verified from the charity in two ways namely virtual honesty and sincerity construction through internal consistency account as The correlation coefficient between the paragraph and the degree to college to scale patterns of learning, thinking, and each style (right, left, integrated) The stability has been calculated in two ways retest and was (0.92 and 0.89 and 0 0.81) for the left and right patterns and integrated respectively as calculated according to the equation Keodr Richardson reached (0.72 and 0.72 and 0.77) for the left and right patterns and integrated.

Because the preparation of this test has gone on for more than five years and it is intended for middle school students, researchers have felt its properties Alsekoumtria account, as follows - :

1. Honesty:

View the test as it the final on a number of specialists in educational and psychological sciences to indicate their views on the validity of the test items and relevance of what is intended to measure as well as the suitability of the university students and post their opinions analysis shows that there is complete agreement 100% on the test validity therefore been adopted in its original form

2 .Stability:

Extract test the stability of the run-off manner. Applied to a sample of 40 students and special students from scientific and humanitarian colleges and by 10 students from each college and then re-apply after two weeks, and calculate the value of the Pearson correlation coefficient afternoon it was (0.76) and is a good coefficient of stability.

The final application:

Tools applied to the sample researcher number is (420) students is worth mentioning that the time taken to apply the tools together averaged (30) minutes.

Statistical methods:

For the purpose of analysis and data processing has been the adoption of the test (T) for one sample and test (T) for two independent samples and the Pearson correlation coefficient and chi square test (Turaihi Hammadi 0.2013: p. 80)

Display and interpretation of results:**Regarding the first objective:**

To identify the level of mental ability to imagine at the University of Babylon students.

After analyzing the answers to the sample members for mental imagination turns out that the arithmetic mean achieved has reached (4.728) and standard deviation (1.9) which is less than the middle premise of (6.5) and to identify the significant statistical differences phenomenon used t-test and the results came installed in the table below

Table 2: Test value (T) calculated tabular and statistical significance of the test the ability of imagination

The number	Average	standard deviation	Average premise	degree of freedom	the calculated value of t	value T. tabular	statistical significance
420	4,728	1,9	6,5	419	-19,12	1,96	significant

Seen from the above table that the value of (T) calculated (-19.12), which is greater than the value of (T) Indexed (1.96) at the level of (0.05) - regardless of the negative - the signal and the signal negative means that the average calculated less from the middle premise of the scale, and the difference statistically significant at the level of (0.05) and perhaps this result is due to the nature of the curriculum, which does not respect this capability and development of students as well as teaching methods that emphasize conservation more than its emphasis on the development of the imagination, along with questions exam, which takes into account the emphasis on the conservation and recovery, mostly even in the practical aspects and Applied

The second objective:

Identify statistically significant differences in mental ability to imagine a variable depending on the specialty. In order to achieve this objective test was used (T) for two independent samples and the results appeared installed in the table below?

Table 3:

Specialization	number of students	Average	standard deviation	Calculated value T	T. tabular	statistical significance
Scientific	262	7,315	2,03	2,687	1,96	significant
Humanitarian	158	2,141	1,77			

The above table shows that the value of (T) calculated (2.687), which is greater than the value of (T) Tabulated of (1.96) at the level of (0.05) and the degree of freedom (424) and for the benefit of students of scientific specialization. Perhaps partly due to the nature of the curriculum for those with scientific specialization that allows greater opportunity and greater freedom for students and free for flexible thinking more of specialization humanitarian curricula that encourage conservation and recovery added to the teaching methods are the other must be influenced by the nature of the curriculum, so they also emphasize the practice of activity imaginary for students and scientific specialization and allows students to think multiple directions, or the so-called thinking divergent unlike teaching methods for people with humanitarian specialization that may encourage students to conservation as well as questions test scores, which may be even more exciting to think the student as requiring a degree of flexibility in thinking to solve problems posed by those questions with questions, compared with the human specialization that may encourage recall what has been saved from this information and Mizar in the essay questions that are more common than in the scientific specialization.

The third objective:

Identify patterns of learning and thinking among students of the University of Babylon.

To this end it has been first calculate the degree of sovereignty pattern through the following equation - :

$$\frac{P}{N} \quad Q.+ 1.96 \times$$

Under this, the credibility of confidence diagnosis belonging to the student level pattern is (0.95). After the application of the equation results appeared installed in the table below.

Table 4: The degree of sovereignty pattern among a sample search members

Pattern prevailing thinking	average	standard deviation	degree of sovereignty	degree of sovereignty to determine the cut-off grade of sovereignty
Right	14,66	4,21	15,12	16
Left	15,87	4,0030	16,31	17
Integrated	4,59	5,047	5,14	6

In order to identify any of the three patterns more common in Babylon University students calculated the occurrences of each pattern separately (right, left, integrated) were, respectively (163, 192.49). and to identify significant statistical differences phenomenon test was used (Ca 2) and appeared Results installed in the table below

Table 5: Value (Ca 2) calculated in tabular and statistical significance of the differences in the three styles (right, left, integrated)

Pattern	Number	Calculated (Ca 2)	tabular(Ca 2)	statistical significance
Right	163	81,14	5,99	significant
Left	186			
Integrated	49			

Seen from the above table that the value of (Ca 2) the calculated total (81.14), which is greater than the value of (Ca 2) Tabulated of (5.99) at the level of (0.05) and the degree of freedom (2). also is apparent that duplicates the left pattern is the largest, followed by the right and then integrated and possibly is attributable also to the pursuit of educational institutions to the preference patterns of learning and thinking associated with half left of the brain, especially in primary and secondary education Curricula and teaching methods used to focus on the analysis and logic and accuracy associated with the left half of the brain where neglect thinking skills associated with half right Kaltejel, visualization and activities visual process and free thinking.

Found by applying the equation to determine the sovereignty of the pattern that there are (22) the applicant does not diagnose within any pattern.

The fourth objective:

Identify statistically significant differences in the patterns of learning and thinking according to the variable Specialization of study.

In order to achieve the above objective test was used Chi-square (Ca 2) and appeared in the results shown below.

Table 6: Value (Ca 2) calculated in tabular and statistical significance of the differences in the patterns of learning and thinking depending on the specialty school

Pattern Specialization	right	left	the integrated	calculated value of Ca 2	the tabular value of Ca 2	statistical significance
Scientific	136	70	38	83,03	5,99	significant
Humanitarian	27	116	11			
Total	163	186	49			

seen from the above table that the value of (Ca 2) the calculated total (83.03) which is higher than the value of (Ca 2) Tabulated of (5.99) at the level of (0.05) and the degree of freedom (2). This means that the difference a significant statistic also shows that people with scientific specialization tend to the right and integrated types while those with humanitarian specialization tends to the left pattern.

Perhaps this result seems logical considering that with scientific specialization tend to deal with complex problems as they use symbols and problem solving larger with humanitarian specialization. This is consistent with the characteristics of the right hemisphere referred to by Torrance (Hamadi, 1998, p. 3)

While we find that with specialization humanitarian tend to deal with audio and visual stimuli and prefer simple problems or issues they usually what prefer clear information and this in accordance with the characteristics of the left half. (Rimawi 0.2003, p. 201)

Fifth objective:

To identify the correlation between mental imagination and learning patterns and thinking among university students:

To achieve this objective, use the Pearson correlation coefficient and appeared calculated results shown in tabular and below.

Table 7: Pearson correlation values and the level of statistical significance of the relationship between relational mental imagination and patterns of learning and thinking coefficient

Pattern	Number	The calculated value of the correlation coefficient	The Tabulated value of the correlation coefficient	statistical significance
Right	163	0,57	0,139	significant
Left	186	0,112	0,139	Not significant
Integrated	49	0,463	0,276	significant

The above table shows that the correlation coefficients between imagination and mental patterns of learning and thinking values were statistically significant with the right types and integrated. This can be explained that with the right style properties they those with a creative mindset and they always Seeking renewal. As they prefer to deal with the information is specific and prefer creative reading. As well as they depend on fantasies in memory, thinking and enjoying in the drawing. (Hamadi, 1998, p. 3)

And with characteristics found among those with the integrated style but perhaps to a lesser extent than those with the right style. This is what gives them the ability to mental imagination.

It also shows that there is a correlation but Live up to the level of significance statistical between mental imagination and style left considering that with this pattern characteristics they prefer to deal with one problem or one variable at a time, as they know how to display stimuli in an orderly manner according to a specific plan, as well as they prefer for clear information that proved true. (Okasha, 1986, p. 6)

This is what makes them less able to mental imagination of those types left and integrated.

Recommendations:

1 .The need to take into account the level of imagination and mental patterns of thinking and learning for students at admission in colleges and in harmony with the nature of academic disciplines and not just a student who adopted as a basis in those colleges accept students rate.

2 .train faculty members on teaching methods that will develop the ability to mental imagination of the students.

3 .The need for the curriculum at the university include topics that would contribute to the ability to imagine the mental development of the students.

4 .not to focus on one without the other halves of the brain that are dealing with the student in an integrated manner as the right half of the brain's Like half of left are based both play important roles in multiple mental processes.

Proposals:

1 - Hold a similar study of the current study on other stages of learning.

2- Hold a pilot study designed to identify the impact of psychological variables in the level of mental imagination pressed for psychological or anxiety and other exam.

3 - Hold a study on the relationship of mental fantasizing other cognitive variables such as check and solve problems and multiple intelligences.

4- Hold a study on the relationship patterns of learning and thinking about other variables Such as Characteristics personal memory and professional inclinations.

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