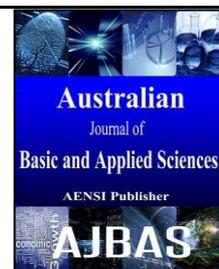




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The Mental Imagination According to The Three Demntional Cognitive Styel, Verbal-Visual (Spatial)- Visual(Objects) By University Studnets

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ABSTRACT

The concept of mental imagination is an important element of modern educational cognitive. It helps the individual to cope with his external world and to predict the possible solutions to many problems that the individual confronts and to lessen anxiety feelings surrounding him (Altaib, 2006: 177). Thus, there is almost no aspect of human behavior in which we do not find a trace for mental imagination, so when the individual rushes to perform one of the actions, he might be not depending on what he actually perceives in his current perception space only, but he might rely on what he imagines beyond what he sees and on what he anticipate to show or to happen (Groch, 1963:19). Therefore, the mental imagination is considered as supreme mental process and important mental activity that attracted the attention of many psychology specialists especially cognitive specialists who showed great interest in searching for its constituents, its operating mechanisms, the tools for its growth, and the ways of its measurements, for it is considered a kind of mental processes which has many relations with other mental processes such as attention, sensor perception, remembering, thinking, language understanding, and concepts formulations...etc.. Thus it is a means to conditioning and creativity (Alzaglolo, 2003:197). The study aimed at revealing the relation between mental imagination and a three dimensional cognitive style, verbal-visionary (spatial)-visionary (objects) in the university students, the study is trying to answer the following two main questions: 1-What is the correlation relation between the mental imagination and the three dimensional cognitive style, verbal-visionary (spatial)-visionary (objects)? 2-Are there semantic-statistical differences in the correlation relation between the mental imagination and the three dimensional cognitive style, verbal-visionary (spatial)-visionary (objects) in the university students in accordance to gender, specialization, and grade? The sample of the study comprises (426) students distributed according to gender, specialization, and grade, 158 students from the scientific studies, 268 form the humanities, 164 male students against 262 female students. Concerning the grades of the study, there was 252 from the first college grade and 174 from the fourth grade. Some of the necessary procedures were taken in order to achieve the aims of the study, one of these important procedures is setting a device to measure the ability to mental imagination. The following course of actions was followed to prepare for the test items aimed at measuring the ability to mental imagination: There was a review to literature and previous Arabic and western studies related to mental imagination and to the tools of measures that they comprised. It has been found that some of these studies have shown great interest in the verbal side of measurements while others included pictures or forms for measuring mental imagination. In order to adopt an ideal style in measurement, opinions of specialized professors were taken in psychological measurement and educational psychology and they have agreed upon adopting the forms as the most suitable, accurate and matching with the adopted theoretical concept in the study. Fifteen forms were specified and chosen of the forms that measure the ability to mental imagination, they were taken from multi measurements and one of them was chosen as an example to clarification as shown in Table (3). Also the scale of the three dimensional cognitive style, verbal-visionary (spatials)-visionary (objects) prepared by (Olesy & Maria, 2008), was adopted after transferring the original copy into Arabic. The researcher have summed up some results some of them are: After applying the two tools on the sample of the study, it has been reached to many results, the most prominent of which is that the level of mental imagination to the college students was below the average and that the scientific branch students are enjoying a higher level than the humanities branch in the ability of mental imagination, also the level of mental imagination to fourth college grade is higher than the level of the first grade. Regarding the three dimensional cognitive style, it was clear that there is no semantic-statistical differences in the nature of the cognitive style practiced by the students whether it was verbal or visual (spatial) or visual (objects) while it was found that there is a difference in relation to gender variable and for the favor of males in practicing the visual cognitive style (verbal) and for the favor of the scientific specialization side. Concerning the visual cognitive

dimension (spatial), it appeared that there is a clear correlation relation between mental imagination and the three dimensional cognitive style, verbal-visionary (spatial)-visionary (objects). In the light of these results, the thesis has come with some conclusions, recommendations and suggestions.

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Research a problem:

In each Specialization That performance and success is different from other Specialization. requires Success in scientific Specialization that the student to have the capabilities differ from those required by the terms of reference of humanitarian. For example, we find that most of the countries in the world where preliminary testing to accept all students who apply to study in the jurisdiction of the architecture of the examination done the level of their ability to imagine and spatial perception. (Mahfouz, 1994, p. 23)

From the above we note that the problem of current research is to try to investigate mental imagination and its relationship to cognitive variable-style three-dimensional verbal -besra (Spatial) - optical (things) through the analysis to answer the following questions- :

Are college students have the ability to imagine the mental and cognitive nature of the prevailing style they have?

Are there differences between students in the imagination depending on the variables (academic specialization Stage school - sex)?

Are there significant differences between students in style cognitive differences depending on variables (specialization school - grade - sex)?

Is there a relationship between cognitive style three-dimensional and mental ability to imagine?

The importance of research:

The mental imagine is the high of mentality intellectual and important activity to attract the attention of many psychologists. who showed great interest in the search for components and mechanisms functioned and means of development and how to measure it, he is a sort of mental processes related to many of the mental activities Other as (attention sensory perception and memory thinking and understanding of the language and the formation of concepts .. and so on) is a means of adaptation and innovation. (Zglul 0.2003, p. 197)

As, mental abilities vary among students their tactics knowledge are the other vary also a longer mainly to distinguish between them during their interaction with different life situations and longer styles cognitive most widely used of the students, which is a high degree of stability has been confirmed (and not) (Witkin) theoretical importance for the study of cognitive styles as it represents the student's way in the exercise of the activity in a

harmonized and consistent with the cognitive self-potentials are characteristic of the students in their responses to environmental stimuli. (Shipman. 1985, p: 22)

The style of cognitive three-dimensional exists among all people and that this view endorsed by many scientists. and upheld as an innate characteristic breed with human. he equipped with it, but the strengthening and stability depends on learning, training, and thus there are individual differences among them. Some of them have the spatial ability of normal and each has a high capacity, this led many researchers to address the importance of cognitive style three-dimensional life-operation in various jobs, trades and professions, science and especially mathematics and engineering sciences. (Torrance.1988.P: 89)

Research Objectives:

- The current research aims to identify - :
- level of The ability to mentally imagine at Babylon University students
 - Statistically significant differences in the level of mental ability to imagine at the University of Babylon students according to the variables (sex, specialization and grade)
 - Verbal cognitive style - visual (spatial) - optical (things)
 - Statistically significant differences in cognitive style three-dimensional verbal optical (Spatial) - optical (things) at the University of Babylon students depending on the variables (sex - Specialization – grade)
 - Correlation between the ability to imagine the mental and cognitive style three-dimensional verbal - optical (Spatial) - optical (things)
 - Of significant statistical correlation between the ability to imagine the mental and cognitive style three-dimensional verbal - visual differences (where I am) - optical (things) with university students, according to the variables (sex, specialization and grade.)

Borders Search:

The current research is determined by the following

Babylon University students / study morning
Both sexes (male and female)

From both majors (scientific and humanitarian)

The first and fourth stages the academic year 2012-2013.

Define the terms:

Mental imagination knew several definitions, including- :

Webster (Webster, 1971)

Is the ability to form a mental picture of the issues and things that are not aware of before the senses in advance. (Webster, 1971, P: 28)

Spearman (Sperman) mental ability depends to recognize relationships between things that have entered our experience. and Conclusion something new and from these relationships. (Abdel Aziz 0.1989, p. 53)

The operational definition of Imagine :

Is the degree obtained by a university student on the mental ability to imagine, which was prepared in this research test.

Secondly :: verbal cognitive style - visual (spatial) - optical (things)

Known cognitive style (phonetic - optical (where I am) - optical (things)) several definitions are as follows- :

Osborne *et al* (1978) Ausburn & *et al*, 1978

It is psychological dimensions represent Regular in the individual behavior of cognitive function, especially with regard to the acquisition and processing of information. (Ausburn & Ausburn, 1978.P: 337)

Meyer and Massa, (2003 (Mayer & Massa 2003)

Are the ways in which individuals tend to be used in the processing and representation of information which they are exposed. (Mayer & Massa 2003, P: 833)

The operational definition of the three-dimensional cognitive style:

Is the total score obtained by a university student on each dimension of the three-dimensional gauge style cognitive three-dimensional (phonetic - optical (where I am) - optical (things) expressed and prepared for the purposes of the current search. (Kosslyn, & Kozhevnikov & *et al*, (2005), P : 5)

Theoretical background and previous studies:

-The concept of cognitive style and function

It seems at first glance, when you talk about the cognitive styles as having cognitive nature Exchange, that is, they only reflect individual differences in the processes of attention and perception, memory, thinking and learning, but in the case of post-sentimental, as it refers to the method preferred by the individual's information processing and organization, so this technique is always the usual and preferred mode of him to realize the information and thinking about them, they are not limited to patterns of cognitive behavior, but beyond that to reflect the differences in social behavior and other aspects of personal. (Riding & Rayner 1998, P: 175)

Express way or form favorite performance of the individual in the organization deems or Midrickh around him and in his dealings with different life

situations, and agree (Keegan and Moss) Gegan and Mosse with (MISC) in that the methods of knowledge are the methods favored by the individual's understanding and perception and memory and how to deal with the suffering of the positions of the external environment. (Goldstein and Blackman, 1978, P: 134)

See (Vernon) that the style of cognitive are psychological configurations dealing with whole of personal. And is not determined next to one of its aspects. (Vernon, 1973, P: 139) which is at (Santostefano) responsible for the amount of information and organization in the particular moment of the information. (Guilford, 1980, P: 716)

While others argue that cognitive style is the way in which the individual is acting responds and adapts them to the environment, both from the individual doing his reaction and adaptation can provide us Insight of the behavior of the individual, which helps to predict this behavior and studies in specific situations. (Kuchinskias, 1979, P: 269)

Thus, we find that cognitive styles has become a hub for individual differences in cognition, on the grounds that it is not regulated separately from other personality aspects, but is seen as based on an integrated view of the human personality, cognitive patterns establish is variable can be seen through the various aspects of personality, whether cognitive or emotional or motivation. (Faramawi, 1994, p. 4)

Despite the fact that most of the previous studies on the style of cognitive verbal - visual were based on a general idea about the existence of two different systems for processing (verbal - visual) but suggests psycholinguistics nerves data the presence of two subsystems distinguished for encoding and processing of visual information in different modalities, namely the visual system (things) which processing the visual appearance of things in terms of color, shape, texture and a system that processing the position and movement and spatial relations, remittances, and other characteristics of spatial processing. Although the visual system (things) a related visual appearance of the things I do not have specific things that the individual but also can refer to visualize patterns and scenes of distinctive colors, splendor (vividness), forms or details Similarly spatial perception does not have a specific spatial locations or relations between stuff in spatial systems, but it also refers to the spatial relationships between parts of the stuff. And it can also refer to objects and spatial shifts the dynamic of the various elements of the movement of something. (Mazoyer *et al.*, 2002, P: 27)

Research community:

Includes community current research on the initial morning school students at the University of Babylon for the academic year (2012- 2013). and consists of (8513) students distributors, according to specialization, sex and stage, as the number of

students in scientific specialization (3158) by (37%) The number of students in the Specialization humanitarian reached (5355) by (63%) while the number of male students (3260) students by 38% while the number of females reached (5253) students and 62% either according to the stage of study, the number of students reached in the first stage (5029) students and by (59%) while the number of students in the fourth stage (3484) and by (41%) and illustrates table 1 this.

Thirdly: research sample:

Chosen sample of current research of the original community and by (5%) . as the sample of (426) of students. were chosen-style class random a disproportionate distribution. the sample was selected from (17) Faculty of representing all the faculties of the University of Babylon of them (9) of scientific disciplines, namely, (pharmacy, pure science, medicine, science, nursing, engineering, information technology, dentistry, and engineering materials) vs. (8) colleges specialties humanity, namely, (Arts, basic Education, administration and Economics, Physical Education, Education for human Sciences, Quranic Studies, Fine Arts, law)

The number of students who were selected from scientific disciplines has reached (158) students. compared to (268) students from humanitarian disciplines The number of male students has reached 164 students. compared to (262) students. As for the number of students in the school stage for the first phase has been reached within the research sample

(252) students compared to 174 students from the fourth stage.

Fourth: ADATA Search:

For the purpose of achieving the aims of the research require the presence of two tools, one to measure the ability to mental imagination and the other to measure the style tri-cognitive dimensions (phonetic - optical (where I am) - optical (things)) with university students and in view of the lack of scales appropriate researcher has felt prepared, taking into consideration the theoretical basis basic steps that it is based on building scale as follows- :

For the preparation of the paragraphs of the ability to imagine the mental test followed the procedures as follows- :

Researcher briefed on the literature and previous studies, including Arab and foreign-related mental Imagination, and tools to measure the verbal side, while others, including photographs or forms to measure the mental ability to imagine.

For the purpose of adopting the best method of measurement has taken the views of professors in psychometrics and educational psychology, as agreed to adopt the shapes as the most appropriate and accurate and closely with the theoretical concept adopted in the search.

Identified and selected (16) form shapes that measure mental ability to imagine taken from multiple scales have been chosen as one of them as an example to illustrate, as shown in Table 3.

Standards and a number of them derived forms

Table 3:

s	Reference	Author	Year	Number formats
1	Train the Brain use it or Lose it	Gareth Moore	2008.	4
2	How to Soive IQ puzzles	Philip Carter and Ken Russell	2010.	4
3	Maximize your Brain power (1000 new ways to boost your mental fitness	Philip Carter and Ken Russell	2008	3
4	Intelligence industry	D. Tariq Sweden	2010	5

And this has become a test consists of (15) form in addition to the one given as an example to illustrate

Test preparation instructions:

The instructions is a Guide that helps effector Answering clauses scale. So to be taken into account and a clear understanding. And able to deliver what is required of the responder. Instructions included illustrate how to answer the test items through the presentation of an example that illustrates how to answer.

The test display and instructions as orally from the initial number of arbitrators (Appendix 1) specialists in educational and psychological sciences totaling (11) arbitrator to assess the validity of paragraphs (forms) to measure the ability to mentally imagine and after views of the arbitrators were analyzed using (Ca 2) afternoon that the value of (Ca 2) calculated between (4:45 - 11) which is higher

than the value of (Ca 2) Tabulated of \$ (3.84) at the level of (0.05) and the degree of freedom (1) and this was retained on all the Item of the test as well as the validity of instructions

Exploratory experiment:

This measure aims to identify the extent and clarity of forms of testing and instructions and examples contained therein and disclosure forms vague and unclear for the transponder was selected sample of students reached (40) students from within the research community and was chosen the way stratified random with distribution disproportionate has been shown that the forms of the test. the instructions were clear and that the average time is 30 minutes to answer the test items.

Statistical analysis of the Items:

For the purpose of analysis of the Items of mental imagine test discriminatory power was

calculated as well as the difficulty coefficient of the vertebrae along the internal consistency coefficient.

1- Discriminatory coefficient of the Items.

Show through the application of the special highlight paragraphs equation that values discrimination coefficient ranged between (Cefr-0.73) and under that, there are two Items discard are: (10.15). to the discrimination coefficient has reached (zero, zero), respectively, as (Allam) refers to paragraph less distinguishable from (0.20) coefficient is weak Items and should be excluded while the Items that ranges distinguishable coefficient (0.20-0.40), the distinguished be quite a bit. But if the value of the distinction paragraph coefficient (0.40) or more, this is a guide that Item distinction between the two groups is incredibly good terminals. (Allam 0.2000, p. 289)

2- .Difficulty coefficient

To calculate the difficulty of Items to imagine the mental test. was based on answers to students who applied to them and to test the upper and lower sets to exclude a very difficult and very easy Items relied on Ebel litmus test as the most widely used than others to retain Items or deleted from the test

In light of this shows that the Items of the ability to imagine the mental test after excluding Items is the iconic (10.15) may be difficult ranged between coefficients (0.30 - 0.69) it any medium difficulty and therefore has kept all of the paragraphs of (13) items

3- .The internal consistency coefficient (Item Validity) Item Validity

To calculate the internal consistency coefficient of items ability to mental imagination test. researcher used the equation (Point Baesberaa) between the degree of each items and the total score of the test sample statistical analysis of its size (417 students), has been shown calculated values ranged from (0.79-0.288) higher than the tabular value of (0.113) at the level of (0.05) and the degree of freedom (415(

The psychometric properties of the instruments

1- Virtual Validity: Was presented to the test group of Professors of education and psychology - Supplement (1) . to verify the validity of the measure (mental imagination) and its suitability for the sample under study. It was found that all the items (formats) included in the test has been approved by the Professors percentage ranged between (82-100%). and the calculated value of Ca 2 have ranged from (4.45 0.11), which is greater than the value of (Ca 2) Tabulated of (3.84) when the level of significance (0.05) and the degree of freedom (1), and under that check of Virtual Validity of test.

2- Construct Validity: This kind of honesty has been made to test the ability to mental imagination through the following indicators:

Distinguish between the two extremes

Difficulty items(C) internal consistency (items degree relationship Total degree for testing):

The ability to imagine the mental test stability

1- retest Test-Retest: As it has been re-application of the ability to mentally imagine a sample exploratory travel experience test (40) students and after more than (14) days, the referee reliability coefficient by finding a correlation between the scores of students in the two applications, and it turned out that the value of the Pearson correlation coefficient has reached (0.83) and in order to verify the statistical significance of the value of the correlation coefficient was used test (see) and it turned out that the calculated value of (9.181), the highest of the tabular value of \$ (2.021) at the level of (0.05) and the degree of freedom (38.(

2- Internal consistency (Keodr - Richardson 20): Under this method, awarded stability the ability to imagine the mental test through the grades of students who surveyed and exploratory's experience (40) students and it turned out that the value of reliability coefficient has reached (0.89(

Second, cognitive style scale three-dimensional Measuring three-dimensional of cognitive style

For the adoption of the researcher to model style cognitive three-dimensional developer on the basis of modern scientific theories and knowledge that distinguishes between three dimensions (optical (Spatial) - optical (things) - and verbal). so he felt (olesy & maria) scale adoption as has thrown this technique as an alternative to the style of cognitive traditional (optical-phonetic) through a series of studies have carried out a self-report instrument designed to measure this style symbolized short (The Object - Spatial Imagery and verbal Questionnaire (OSIVQ)

For the purpose of the following procedures-

Translation of the scale: The researcher Translation of the original version of the measure of cognitive style three-dimensional (OSIVQ) (4 extension) prepared by each of the (Olesy & Maria, 2008) using the following steps:

Translation into Arabic scale During the presentation it of the to one of the professors in the English language.

Translated version offered to the Arabic language with the original copy on one in educational psychology who are proficient in English language to assess the extent of overlap between the two versions and turned out to be identical translation.

Translated version offered to the Arabic language on professors English to re-translated from Arabic into English.

English versions offered together, which was re-translated from Arabic to English on the two professors who specialize in the English language to assess the compatibility of the two versions and stressed The two versions are identical.

Logical analysis of Items (Virtual Validity):

After checking the veracity of the translation tool offered on a number of professors in educational

and psychological sciences (Appendix 1) to indicate their views on the validity of Items to measure every dimension of cognitive style three-dimensional alternatives answer and instruction tool. After their opinions analysis shows that there is complete agreement between the arbitrators to measure the validity of Items after each belongs to him. So keep on the scale, as without any change also kept on his instructions without any modification or change. Arbitrators also expressed their approval for alternatives answer No significant modifications.

Exploratory experience:

Offered researcher tool on special experience exploratory sample to test the ability to mental imagination and show through this application that the instructions were understood and that the paragraphs were clear in terms of the wording and meaning as it did not inquire about one of the students, but for the time it took students to answer the tool may ranged between (12-16 minutes) and a mean of 13 minutes.

Style correct responses:

Since the current tool is composed of three metrics So there are three degrees of college obtained by each student through answering Items tool, one of which represents the (visual (spatial)) and the other (optical (things)) and third (verbal) Since alternatives answer has been identified according to the style of (Likert) quintet in front of each Items has been given weights of (5.1), as given class (5) of the alternative (always) and class (4) of the alternative (often) and class (3) of the alternative (sometimes) and class (2) alternative (rarely) and class (1) alternative (never), and each scale consists of (15) items, so the highest degree obtained by the student for each measure will be 75 degrees and lower degrees is 15 degrees and the Average a hypothetical of (45) degrees.

Statistical analysis of the Items:

For the purpose of analysis Items statistically tool own has applied-style three-cognitive dimensions of the sample the same analysis applied by the ability to mental imagination test, consisting of (417) students then calculated each of the discriminatory power of each scale of the three measures contained in the instrument, as well as the internal consistency of the Items of each including through the creation of a relationship degree Item Total degree of the scale to which they belong it.

Discriminatory Force of the Items:

Calculated the discriminatory Force of each Item within the scale to which they belong it. by using (t-test) for two independent samples, and it turned out that the values of (T) has ranged between (13.6929-4.7245) for optical scale (spatial) and (14.4405-2.123) for optical scale (things) (f) 14.5112-3.9890) to measure verbal and all these values are statistically

significant because it is larger than the value of (T) Tabulated of (1.96) at the level of (0.05) and the degree of freedom (224) so keep on all the Items of the three Measure,

The psychometric properties of the instruments has been verified the veracity of the tool through two types of veracity,- :Virtual veracity (Face Validity).

This kind of veracity of the three metrics included in the tool through a presentation to a group of professors in educational and psychological sciences. and taking their views on the validity of those Items and who have expressed their consent to the validity of the measure and has been developed to check for him.

(B) construction veracity (Construct veracity):

The researcher has achieved the veracity of construction through two indicators, represent the first finding of force discriminatory manner the two extremes using the t-test for two independent samples and measure each of the three measures contained in the tool. The style represents another finding correlation between the degree of Item the total score of the scale to which they belong and using the Pearson correlation coefficient and this elucidate researcher previously.

Stability:

The researcher has been made of the stability of the tool in two ways:

Re-test (Test – Retest): The stability of the instrument is calculated by re-applied to the sample exploratory experiment of (40) students and then calculate correlation coefficients between the scores of the values of the two applications afternoon that those values were (0.71 - 0.76 - 0.66) optical scale (spatial) and optical (things) and verbal respectively in a bid to ensure statistical significance was tested tests the (T t) and it turned out that their values were (6.217 - 7.208 - 5.415) optical scale (spatial) and optical (things) and verbal, respectively, and this is greater than the value of values (T) Tabulated at the level (0.05) and the degree of freedom (38) and adult (2.021)

Internal consistency (Alvakronbach):

As the researcher has applied equation (Alvakronbach) sample exploratory experiment adult forms (40) students appeared that the value of reliability coefficient has reached the optical (Spatial) (0.75) and optical (things) (0.78) and verbal (0.72), respectively.

The final application:

In order to achieve the Objectives of research applied researcher tools together to sample the major search consisted of (426 started) students from students Babylon University to study the morning and two stages for the first and fourth ongoing study for the academic year 2012-2013 and applied

researcher in the period between (10/30 to 12/28), equivalent to two months

Statistical methods:

For the purpose of processing the data contained in the search , researcher Has adopted statistical means the following- :

Kay square test for good conformity. (Allam 0.2010, p. 188)

Pearson correlation coefficient.

Equation discrimination.

Equation difficulty paragraph. (Zobaie, *et al*, 1980, p. 74)

Point Baacyrial equation.

Test (t-test) for two independent samples. (Turaihi, Hamadi, 2013, p. 117)

Test (t-test) for one sample. (Turaihi, Hamadi, 2013, p. 117)

Test (t t)

- Analysis of variance triple circles unweighted. (Verson 0.1991, p. 334)

- .Test (Z) of the differences in the relationship connectivity

- .unilateral variation of repeated measurements analysis (Kilani, Mosques and 0.2005, S331-347)

Presentation and interpretation of results:

With respect to the first goal of the research, which refers to the identification of the level of mental imagination at Babylon University Students

It has been shown after analyzing the answers the students the ability to mentally imagine a test that scores ranged between (8-1) and a mean of (4.728) and standard deviation (1.9) and comparing the arithmetic average derived from answers to the sample with average premise of the test and of (6.5), we find that average earned less than the average premise to examine the statistical significance of the differences between the phenomenon medium used (T) test for one sample and the results appeared installed in the table below. The table shows that the value of T calculated the (19:26) "regardless of the signal" is greater than the value of (T) Tabulated the (1.96), at the level of (0.05) and the degree of freedom (425), and the signal negative means that the calculated average is less than average premise of the scale. This means that the apparent difference between the arithmetic average of the sample and the center-premise to the test with a statistically significant and negative, including the reference, it means that the mental imagination at the University of Babylon students level is below the middle(Egan, 1992, P: 155)

Perhaps attributed the cause of the low this ability at the University of Babylon students 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 emphasis on the development of the imagination, along with questions exam, which takes into account

the emphasis on the conservation and recovery, even in areas mostly and practical, but it may in some cases up to the exposure of students to foil witchcraft when a new answer is the answer they want, professor of art which have Do not pay attention content to this answer and Nor encouraged have requested, which prevents the development of this ability has his Students.

The second objective: to identify statistically significant differences in the level of mental ability to imagine at the University of Babylon, according to the students (sex, specialty, academic stage). To achieve this objective, the researcher used the contrast triple circles unweighted analysis and the results appeared installed in the table (17) below. The table shows that the values of (F) calculated were statistically significant for the two variables (specialty grade) while were not statistically significant for the variable (sex and all interactions) as the value of (F) calculated for variable specialization of (23.455), the largest of the value of (F) Tabulated of (3.86) at the level of (0.05) and degrees of freedom (1418) Since the arithmetic mean of the grades students scientific specialization of (6.646) is higher than the arithmetic mean of the grades students Specialization literary and adult (2.81), this means that students scientific specialization enjoy the highest literary level of specialization in mental ability to imagine.

Perhaps attributed the reason to the nature of the curriculum for those with scientific specialization, which 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 exercise of imaginative activity for students of scientific specialization and allows students to think multiple directions, or the so-called thinking divergent as opposed to methods of teaching 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 compared to those questions with questions of 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.

As for the variable other (grade) The value (F) calculated (8.134) is also greater than the value (F) Tabulated itself any (3.86) at the level of (0.05) and degrees of freedom (1418) Since the arithmetic mean for students fourth stage of (6.115) is higher than the arithmetic mean for people with the first phase of \$ (3.341), it means that the difference in circles for the benefit of students of the fourth stage is, they have more ability in mental imagination of students from the first stage level and possibly attributed the reason

for this to the level of intellectual maturity for students this stage as older and more experienced as well as the fact that they have dealt with subjects of study more specialized and richness, allowing them greater flexibility in thinking as to the richness of thought resulting from dealing in depth with the school of information received by the students during the years of their studies at the university function. These result is consistent with Kyle study (Kail, 1997) which indicated that the ability to imagine increases as age (Kail, 1997, P: 67)

As for the sex variable, the value of (F) calculated amounted to (2.44) which is less than the value (F) Tabulated of (3.86) at the level of (0.05) and degrees of freedom (1-418) This means that the difference is not relegated to statistically significant and may be due reason in that to the exposure of both sexes of students (males - females) to the same curriculum and the same methods of teaching, as questions that test scores are the same for both sexes, which led to not appear statistically significant differences between the sexes in the level of the ability to mentally imagine differences as for bilateral interactions (Specialization and sex) and (Specialization \times grade) and (sex \times grade) as well as the triple interaction (Specialization \times sex \times grade) are all non-statistically significant because the value (F) calculated for each of them was less than the value (F) Tabulated sense the effect of each variable is not different depending on the effect of the other variable.

The third objective is to identify the style of cognitive (phonetic - optical (Spatial) - optical (things)). In order to achieve the objective above, analyzed the answers to students about style cognitive scale three-dimensional (phonetic - optical (Spatial) - optical (things) and found that scores ranged between (45-75) for the post-verbal and (30-75) optical dimension (Spatial) and (25-75) optical dimension (things) and socializes calculation of (61.1, 42.1 0.55) dimensions of the verbal - optical (Spatial) - optical (things), respectively, and the purpose of identifying the significant statistical differences apparent between those circles and identify the most dimension major employers by students used the contrast unilateral analysis of repeated measurements, considering that each student three degrees dimensions verbal - optical (Spatial) - optical (things) and the results came installed in table (18) below. appears from the above table that the value of (F) calculated reached (0.5512) which is less than the value (F) Tabulated of (2.9957) at the level of (0.05) and degrees of freedom (2850) this means that the apparent differences between the circles arithmetic scores of students from the three-dimensional verbal - optical (Spatial) - optical (things) are not the same statistically significant and this means that students have comparable grades in the three-dimensional style of cognitive (phonetic - optical (Spatial) - optical (things)

This may be due to the nature of the stimuli that exposed her students are not at all verbal or spatial absolute or cushions, but that there is a relative convergence in the form of those stimuli Since the form of style cognitive affected are those stimuli and including it close in nature, therefore, these apparent differences were not statistically significant.

The fourth objective: to identify statistically significant differences in cognitive style three-dimensional (phonetic - optical (Spatial) - optical (things)) at the University of Babylon students depending on the variable (sex, specialty, academic stage.)

To achieve this objective, use the tripartite analysis of variance among the unweighted and after each of the three-dimensional (phonetic - visual (spatial optical) (things), as follows- :

Verbal dimension:

For the purpose of identifying statistically significant differences in this dimension, use contrast triple circles unweighted analysis and the results appeared installed in the table (19) below- :

The table shows that the value of (F) calculated were not statistically significant for the variable specialization, as was (0.1848) which is less than the value (F) Tabulated of (3.86) at the level of (0.05) and degrees of freedom (1-418) and possibly attributed the reason for this is that style of cognitive / verbal dimension takes shape characteristic of the individual in an earlier stage of its growth and specifically childhood and early adolescence, so differences do not appear in this dimension, while statistically significant differences emerged for the sex variable as the value (F) the calculated total (4.5541) which is higher than the value of (F) the aforementioned tabular They favor of males because the arithmetic mean was (67.7), higher than the arithmetic mean of the female adult (54.4) on this dimension, and this result is consistent with the Mazhpt him study (Kozhevnikor & *et al.* 2008), which indicated that there were no statistically significant differences between male and female differences in this dimension (Blazhekova & M.Kozhenikov, 2008, P: 20)

As for the stage of the school was not apparent differences statistically significant because the value (F) calculated the (.03393) less than the value (F) the aforementioned tabular

Perhaps the reason for this is due to the distinctive shape of the cognitive style of the individual is determined as previously stated in an earlier age and stage specifically childhood, so there does not appear to effect the stage of the school in the verbal dimension.

As for the interactions were not statistically significant differences because all the values (F) calculated her, which ranged between (.03727 - 1.0811) is less than the value of (F) Tabulated of (3.86) This means that the effect of one variable

levels (sex, specialty, grade) is no different to the other depending on the levels of these variables.

(B) optical and Spatial dimension):

For the purpose of identifying statistically significant differences in this dimension, use contrast triple circles unweighted analysis and the results appeared installed in the table (22) below

The table shows that the value of (F) calculated for variable specialization of (24.346), which is higher than the value of (F) Tabulated of (3.86) at the level of (0.05) and degrees of freedom (1-418) which is for the benefit of scientific specialization reaching their midst Arithmetic this dimension (63.3875), higher than the arithmetic mean for people with humanitarian specialty that was (38.3625) and possibly attributed the cause of excellence with scientific specialization in this dimension to the difference in the nature of the curriculum during the years of study that preceded the university and during the period of university study, which depends on the exercise of this cognitive style - visual (spatial) - for those with scientific specialization compared to people with humanitarian specialization rarely depends on the exercise of this form of cognitive style, and I mean it (optical (Spatial)). These result is consistent with what he referred to (Blazhekova & M.Kozhenikov, 2008) that people with scientific disciplines (physics, chemistry, engineering) and other areas of the natural sciences are characterized by the highest level in the spatial perception of people with humanitarian disciplines (Blazhekova & M.Kozhenikov, 2008, P: 18)) as consistent with the study (Chabris & *et al*, 2008) which indicated that individuals with scientific disciplines prefer spatial perception (Chabris & *et al*, 2008, P: 7)

As for the sex variable, the differences were not statistically significant because the value (F) calculated the (2.56619) is less than the value of (F) Tabulated of (3.86) As for the variable phase of study, the differences were not also statistically significant because the value (F) the calculated total (.38877), which is less than the value of (F) Tabulated of (3.86) this means that the school years he spent in the student during his university studies do not affect in this dimension (optical (Spatial))

This is probably due to the fact that the method is determined by the age of cognitive stage preceding the entry to the university, so you do not variable phase effect in the form of visual cognitive style (Spatial), and in particular cognitive style and also indicates (and not) is characterized by a high degree of stability.

As for the reactions did not show there are significant differences attributable to the interaction of both bilateral interactions, including any of (specialty, sex) (specialization, school stage) (sex, stage of study) or the interaction between the three variables (specialization, sex, school stage) because

the values (F) calculated have been respectively (.2431, .25584, .4259, .10186), all of which are less than the value (F) Tabulated of \$ (3.86) at the level of (0.05) and degrees of freedom (1-418) this means that one of the variables levels do not vary depending on the variable levels or other variables involved in the interaction.(C) optical dimension (things)For the purpose of identifying statistically significant differences in this dimension, use contrast triple circles unweighted analysis appeared Almttbh results in Table 23 below. The table shows that all the values (F) calculated for the three variables (specialization, sex, school stage) as well as bilateral interactions (specialization and sex) (specialty grade) (sex and stage of study) as well as the triple interaction (specialization, sex, stage of study) did not not statistically significant, as was the values calculated (1.11, 2.51, 0.157, 0.138, 3.81, .0000839, .00688), respectively, all of which are less than the value (F) calculated the amount of (3.86) at the level of (0.05) and degrees of freedom (1-418). This means that this dimension (optical (things)) is independent of the vulnerability of the three variables (specialization, sex, stage of study) as well as bilateral and trilateral interactions between them.

Perhaps attributed the reason for this is also that this form of style three-cognitive dimensions (optical (things)) takes the distinctive features during childhood years, so it was not clear the effect of specialization and grade as the effect of the sex did not appear because of similar visual stimuli experienced by both sexes during this period of years of their lives. With regard to the variable sex, this outcome do not agree with what he referred to (Blazhekova & M.Kozhenikov, 2008), who explained through his superiority to the presence of females to males in this dimension optical (things) (Blazhekova & M.Kozhenikov, 2008, P: 12) and also do not agree with the study (Chabris & *et al*, 2006), which indicated a preference for female visual style (things) more than males.

Fifth Objective: - identify the correlation between the ability to imagine the mental and cognitive style three-dimensional (phonetic - optical (Spatial) - optical (things))

In order to achieve the objective above was used Pearson correlation between the scores of students on the ability to mental imagination and their scores on each test labs after the three-dimensional gauge style cognitive three-dimensional (phonetic - optical (Spatial) - (optical (things)) and show that the correlation coefficient values were (0.96) of the relationship between the ability to mental imagination and dimension of verbal and (0.53) of the relationship between the ability to mental imagination and dimension optical (Spatial) and (0.93) of the relationship between the ability to mental imagination and dimension optical (things) for the purpose of identifying significant statistical values of correlation coefficients used test (see) and

found that the values (see) calculated may have been (70.59, 13.02, 52.1) dimensions verbal - optical (Spatial) - optical (things) which are all greater than the value (v) Tabulated of (0.113) at the level of (0.05) and the degree of freedom (424) and the table (22) below illustrates this. the table shows that there is a correlation between the ability to mentally imagine every dimension of style cognitive both verbal dimension or optical (Spatial) or optical (things), but this relationship vary in terms of the degree of strength as it is for after the verbal is the highest and then followed by optical (things) and optical (Spatial)

Perhaps the reason is due to the strength of that relationship that test the ability to mentally imagine the content of these measures the ability either form or style are employed through Which measured cognitive style three-dimensional, either through word or place or thing. Description of the methods of cognitive - as Indicates - (and not) to represent the style of the individual for the job knowledge, especially the acquisition and processing of information, and includes the use of mental, visual and verbal images in solving problems as he is a high degree of persistence (Ataiwab 0.1991, p. 81)

Sixth Objective: to identify the statistical significance of the correlation between the ability to mental imagination and style three-dimensional cognitive differences (phonetic - optical (Spatial) - optical (things)) among university students, according to the (sex, specialization and grade.)

For the purpose of achieving this Objective and found correlation between the scores of students on the ability to mental imagination and their scores on each test after the three-dimensional style of cognitive (phonetic - optical (Spatial) - optical (things)) For the purpose of identifying the differences of significant statistical relationship connectivity depending on the variable (sex, specialty, grade) separately test was used (z) of the differences in relational ties and emerged results installed in the table (23) below. shows that the differences in the correlation between the ability to mental imagination and dimension verbal depending on the specialization variable value amounted to (z) calculated (3.609), higher than the value of (z) the critical amount of (1.96) at the level of (0.05) and in favor of specialization humanitarian standard score because of that higher relationship

Perhaps the reason for this is due to the nature of the curriculum for those with humanitarian specialization that will enrich the Capacity 's language, which have reflected positively in their ability to imagine more than with scientific specialization. Conversely, in the sense that these approaches enrich the imagination is reflected positively in their perception of verbal larger than those of people with scientific specialization.

As for the differences in the correlation between the ability to mental imagination and dimension

optical (Spatial) The value (z) The calculated (1.908) which is less than the value of (z) Critical of (1.96) at the level of (0.05) which is not statistically significant. This means that students from both majors are close to each other in the recruitment of the imagination in the visual dimension (Spatial), or vice versa employ any perception of a place in out of parents about the ability to imagine.

As for the differences in the correlation between the ability to mental imagination and dimension optical (things) had a value of (z) The calculated (12.20), the highest value (z) Critical of (1.96) at the level of (0.05) and in favor of specialization humanitarian because Standard score that relationship and possibly higher due to the reason for this is that the students specialize in humanitarian enjoy things more than the students of scientific specialization and this has reflected positively in their ability to imagine or that they hired out of parents the ability to imagine when their perception of things.

As for the differences in the correlation between the ability to mental imagination and style tri-cognitive dimensions according to the gender variable was the values of (z) The calculated (2.92, 14.96, 2.86) relations connectivity (Imagine \times verbal, imagine \times where I am, imagine \times things), respectively, a all higher than the value (z) critical of (1.96) at the level of (0.05) and is in favor of females for the differences in the correlation between (imagine \times phonetic) as the value of the correlation coefficient for females is higher and the direction of the positive while it is for males less than where the value is negative and the signal (inverse) and perhaps explain why that female Pay attention to more than males in the meanings of words and words and linguistic expressions are helping in the imagination to have or they employed What has of imagination in thinking about the meanings of words and wordy language and expressions.

While we find that the difference in favor of males regarding the relationship between relational ability to imagine and visual dimension (Spatial). This means that out of parents hire a male fantasy to think about spatial relations, or that thinking spatial relations contribute to enrich the imagination out of parents with a greater degree than females.

As for the differences in the correlation between the ability to imagine and dimension optical (things) were in favor of females also because a negative signal to that relationship for both males and this means that the relationship inverse between the ability to imagine and dimension optical (things) while it is not the case for females. This means that females employed What has the ability to imagine when you imagine things or they work to enrich his Imagination when you visualize things.

As for the differences in the relationship correlation between the ability to mental imagination and dimension verbal depending on the educational

stage variable has the value (z) The calculated (5.34) which is higher than the value of (g) Critical of (1.96) at the level of (0.05) for the benefit of students in the first phase as well as for the dimensions of others, as the value of (z) the calculated (8.94) for the optical (Spatial) and (7.048) for the optical (things) is also in favor of the first phase, that this result may seem contrary to what should be the relationship in the sense that this relationship should be stronger in the fourth stage than it is in the first stage on the grounds that the imagination is getting the individual with age on the one hand and the nature of the curriculum that contribute one way or another, not only in increasing the imagination, but in the recruitment of students to their style of cognitive three dimensions verbal - optical (Spatial) - optical (things) and that this result means that students in undergraduate probably did not deal with subjects in a manner helps their imagination or their style of cognitive development in three dimensions (verbal - optical (Spatial) - optical (things)) they are accustomed to conservation and recovery, and curriculum and teaching style at the university are encouraged to do so.

Conclusions:

In light of the results that have been reached, the researcher concludes the following- :

There is low level of mental ability to imagine at Babylon University students.

The students of scientific disciplines have a higher level in the mental ability to imagine More than humanitarian disciplines students.

The fourth stage students have a higher level in the mental ability to imagine Students from the first stage. Any offer students phases of study contributes to the development of Mental ability to imagine.

The ability to mentally imagine unimpaired variable level of sex.

Babylon University students has a Convergent level of cognitive style three-dimensional (Phonetic - optical (Spatial) - optical (things)

Students have to a higher level of students in verbal dimension of cognitive style Three-dimensional.

Outperform the students with scientific specialization with specialization in the humanitarian dimension(Optical (Spatial)

The ability to imagine the mental correlate positively with every dimension of style Three-dimensional cognitive verbal - optical (Spatial) optical (things)

The correlation between the ability to imagine the mental and verbal dimension stronger for those with specialized human than for those with scientific specialization in two dimensions

The correlation between the ability to imagine the mental and verbal dimension stronger for The female while she is stronger for males regarding the

relationship between mental imagination and visual dimension (Spatial)

Recommendations:

In light of the results that have been reached in the current research researcher recommended the following: The need to take into account the level of mental imagination and the nature of the cognitive style of students for admission to 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.

Building Guiding programs for the development of the ability to imagine and cognitive style three-dimensional among students in different grades.

Training of faculty members on teaching methods that will develop the ability to imagine the students.

Emphasis on the need to include the subject of mental imagination and cognitive style (phonetic-optical (Spatial) - optical (things) in the curriculum, especially in the educational curricula and lessons on the secondary and college level.

Drew the attention of those concerned in the development of the current curriculum of the importance of mental imagination in the teaching of mathematics and engineering in the field of natural sciences in general.

Draw the attention of those concerned in the curriculum to be put on the curriculum with different colored pictures and charts to activate vital mental imagination in order to help the students to accept the information and increase the effectiveness of learning.

Suggestions:

Execution a study on the other stages of learning to identify the differences between them regarding the level of mental ability to imagine and to compare it with the current findings of the study.

Execution a pilot study designed to study the effect of psychological variables in the level of mental imagination pressed for psychological or anxiety and other exam.

Execution studies on the relationship of mental imagination and knowledge in other ways as compared to that reached by the current study.

Execution studies on mental imagination and its relationship to psychological variables such as problem solving and emotional equilibrium and multiple intelligences.

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