

How to Cite:

Yaqoubi, H. H., & Al-Sayed Salman, D. W. (2022). Deliberated thinking among medical group students. *International Journal of Health Sciences*, 6(S5), 6190–6202.
<https://doi.org/10.53730/ijhs.v6nS5.10326>

Deliberated thinking among medical group students

Haider Hassan Yaqoubi

Department of Educational and Psychological Sciences, Faculty of Education for Girls, University of Kufa, Iraq

Deiy Waddah Al-Sayed Salman

Department of Educational and Psychological Sciences, Faculty of Education for Girls, University of Kufa, Iraq

Email: dywdah1@gmail.com

Abstract---The research aims to: Identify the Deliberated thinking of the students of the medical group at the University of Kufa. As well as the statistically significant differences in the Deliberated thinking of the medical group students according to the college variables (medicine, pharmacy, dentistry, nursing), gender (students, female students) and academic grade (first, second, third, fourth, and above) and to achieve the objectives of the research. The researchers built two research tools: Deliberated Thinking Scale. The research tools were applied to the basic research sample consisting of (466) male and female students from the University of Kufa, the medical group, with a percentage of 10% of the original community, using the proportional random stratified method, after data collection and statistical analysis using the package. Statistical data for the social sciences (SPSS), the researchers reached the following conclusions: The research found the results in terms of Deliberated thinking that male and female students from the medical group at the University of Kufa enjoy Deliberated thinking. A male and female student from the medical group at the University of Kufa wore a number of hats indicating their Deliberated thinking, in the following: First Class: White. The second degree: the yellow hat. The third degree is the green hat, and the students of the medical group at the University of Kufa differ in their use of Deliberated thinking according to the type (male and female students). For the benefit of the students. And also the students of the medical group at the University of Kufa, differ in their use of Deliberated thinking according to the class, as in the following: First class: classes above. In the second place: the third grade students. And thirdly, fourth-grade students. In light of the results, the researchers made a number of recommendations and suggestions. Conclusions: Students in the medical group at the University of Kufa, both men and women,

like to think consciously and the male and female students from the medical group at the University of Kufa wore a number of hats.

Keywords---Deliberated, Thinking, Medical Group, Students, Kufa

Introduction

The problem of the research

According to scientific developments, especially at the end of the last century and the beginning of the third millennium, rapid and conflicting changes have become evident in the whole world and Iraq in particular in various aspects of life, which have affected the nature of knowledge, its curriculum, educational inputs, as well as the outputs that are hoped to be effective in society which needs increased awareness to keep pace with the challenge. This resulted in a number of problems, both quantitatively and qualitatively, and affected the educational, social, and political fields. This made it more important for people in those educational communities to be aware and think carefully.

On this basis, interest in conscious thinking has become one of the main goals that should be available in universities and should push university students towards it. Confronting these scientific and technological changes, as well as social and political ones, is no longer done through simple mental operations, but rather exceeds the need for higher levels of thinking, including conscious thinking. It is noted that the university, in the field of teaching and university learning, the curricula used and the behaviour of students in the face of these problems, is no longer interested in this aspect, and may not be expected to be. Especially with regard to students who are later practitioners in the fields of medicine and community medicine. Their responsibilities are very dangerous because they are related to the fate of human health and treatment. The reality indicates that the social and medical motivations require the preparation of students who not only learn the specialised concepts but also deal with them in a conscious and distinct manner. Especially as Iraq is going through a number of successive crises that change from time to time. It is not possible in this way to teach students who have traditional thinking or simple thinking in dealing with these matters.

The Importance of the Research

Scientific cries and repeated research appeals about the growing interest in conscious thinking in the first half of the twenty-first century, particularly in the millennium decade, where this interest was represented in many lists of conscious thinking and calls for its development programmes and great efforts to diagnose individuals and their development, to benefit from conscious creative energies that meet their needs and help in healthy psychological and social development.

This is because conscious thinking is an essential tool in the acquisition and realisation of knowledge and its development, but also to work on developing and

teaching other thinking skills to enable the individual to deal with the requirements of contemporary and changing life. There are a number of considerations that can be useful in developing conscious thinking, including: setting new standards for conscious thinking to achieve creativity and also lead to understanding the depths of situations and events (Abu Jadu and Nofal et al 2007). Some indicators have identified people who are characterised by conscious thinking, including that they will become aware of themselves and their self-abilities, possess savvy and acumen with regard to their emotional life, are independent, enjoy physical and psychological health, as well as their ability to get out of a bad mood to help them achieve rationality in managing their emotions. On this scientific basis, Bandura (1977) pointed out that the higher the level of awareness of the individual, the greater his self-efficacy, which he sees as a set of judgments issued by the individual that express his beliefs about his abilities to carry out certain behaviors, and his flexibility in facing difficult and complex situations, his challenge to them, and the extent of his perseverance to accomplish the tasks assigned to him (Bandura et al 1977). And Mustafa (2016) indicated that while conscious thinking seeks to follow all of the above requirements to deal with the most appropriate thinking situation, the result will be conscious, deliberate, deliberate and wave thinking (Mustafa et al 2016). Mustafa (2016) pointed out that it is the case of serious dealing with the attitude of thinking, as it is known as the thought of purposeful action, the state of maximising results and outputs, and the state of intellectual effectiveness (reaching the right action and the right decision), so it is the state in which goals crystallize, priorities are arranged, and alternatives are generated (Mustafa et al 2016). And Abu Al-Hajj and Al-Azaydah (2016) indicated that in reality, it is purposeful thinking that the learner performs in terms of mental mental operations for the purpose of understanding, making decisions, solving problems, judging things, or doing an action (Abu Al-Hajj and Al-Azaydah et al 2016). Lawrence H. Williams2020 confirms that it is the deliberate thinking about something or solving a problem that one does not already know the answer to. Lawrence 2020:30)).

The Study's Objectives

The current study aims to

1. Conscious thinking among students of the medical group of the University of Kufa
2. The statistically significant differences in how medical students think based on their college (medicine, pharmacy, dentistry, nursing), gender (students, female students), and academic grade (first, second, third, fourth, and above).

Limitations of the Research The current study is determined by the following limits:

Include the study variable in conscious thought to set objective limits.

Human limits: the research is limited to a sample of students of the medical group at the University of Kufa (male and female) according to their affiliation with the faculties of the medical group.

Spatial boundaries: University of Kufa.

Time limits for the academic year (2021–2022)

Defining the Terms definition of the researchers will address the following definitions:

Deliberate thinking is defined by Edward de Bono (De Bono et al 2003), as it is: improving or improving the performance of the individual in the thought processes through the processes of intentional focus directed towards a specific purpose or goal of thinking instead of preoccupying the mind with practising types of thinking. Nawfal (2014): 253) Theoretical definition: The researchers adopted the definition of Edward De Bono (De Bono et al 2003) as a theoretical definition of conscious thinking because they relied on it in building the conscious thinking scale. As for the operational definition, it is the total score that the respondent obtains during his answers to the items of the conscious thinking scale that the researchers will build.

Research Methodology and Procedures

First, the research method. In this study, the researchers used the descriptive method because they thought it would help them reach their research goals.

Second: Population of the Research: The current research community consists of students of the medical group at the University of Kufa for the academic year (12022–2022) according to (specialization, gender, and level of study), distributed over the scientific faculties (medicine, dentistry, nursing, pharmacy). The total number of the research community reached 4,611 male and female students from the medical group. The number of male students was (1625) and (3036) female students. The number of students from the Faculty of Medicine was (1972) male and female students, and the number of students from the Faculty of Dentistry was (792) male and female students. The number of students at the College of Pharmacy is (1315) male and female students, and the number of students at the College of Nursing is (582) male and female students.

Third: A Sample of the Research: It included the following:

The exploratory sample (clarity of paragraphs and instructions sample): because its purpose is to verify the extent to which the sample members understand the scale and its instructions (Faraj et al 1997), to calculate the time taken to answer it, and to identify the difficulties facing the respondent, the survey sample was chosen in a random way (Random Sample), which was represented in the two colleges of medicine and pharmacy, among which (40) male and female students were randomly selected from.

The statistical analysis sample for the paragraphs was chosen in a stratified random manner with equal distribution from the medical group students at the University of Kufa, which amounted to 400 male and female students. The main research sample: The basic research sample was chosen from the original community at a rate of (10%) of the sample amounted to (466) male and female students. They were chosen by the stratified random method with a proportional distribution, distributed over the number of males (164) male and female students, and the number of male students The College of Medicine (197) male and female students; the number of the College of Dentistry (79) male and female

students; the number of the College of Pharmacy (131) male and female students; and the number of the College of Nursing (59) male and female students.

Fourth: The search tool

First: Deliberate Thinking

In order to define the idea of conscious thinking, the researchers looked at the literature and previous studies on the subject.

After the theoretical definition of conscious thinking was determined and based on the literature and previous studies that dealt with the concept of conscious thinking, and after consulting arbitrators and specialists, the concept of the six hats was relied upon. The scale was built according to:

- The white hat
- The Red Hat
- The Black Hat
- The Yellow Hat
- The Green Hat
- The Blue Hat

In order for the researchers to put a weight on each of the six hats, they deliberately determined the relative importance of each one.

Formulating the scale items

After conscious thinking has been defined theoretically and the hats that comprise it and the weight of each of them has been defined in collecting and preparing the paragraphs of each hat, taking into account the nature and characteristics of the sample to which the scale will apply, and after reviewing the literature and previous relevant studies, the researchers formulated (46) a paragraph to take into account the possibility of excluding some paragraphs when analysing them statistically, as some specialists in psychometrics point out that the number of paragraphs that are counted at the beginning of building the scale should be more than the number required in its final form, for the possibility of excluding some paragraphs when analysed in order for them to remain covering the attribute to be measured (Abd al-Rahman et al 1998). Scale validity and validity: To estimate the relative importance of each scale hat, through which researchers can determine the number of items needed for each hat, the researchers presented a separate questionnaire to indicate the relative importance of each scale hat after the researchers initially identified 46 items for the scale as a whole. It was presented to thirty-five arbitrators specialising in psychological and educational sciences. The arbitrators suggested determining the validity of the hats as well as the relative importance of each of them. The number of paragraphs for each hat was extracted according to the percentage determined by the specialists, using the weighted average and the percentage, and accordingly, 9 paragraphs were deleted, separated by the researchers. according to the following: In terms of clarity, they are the paragraphs (30–34–35–39–411) for obtaining the value of the Kai square amounting to (2.13) at a rate of (37%), and the paragraphs (3–13) for obtaining the value of Kai of (0.53) and at a rate of (43%), and paragraphs (18–22), for obtaining the value of a square like that of (0.53) and at a rate of (57%). Table (6) illustrates this. In terms of importance: it is also paragraphs (30-34-35-39-41) for obtaining the value of the Kai square of (2.13) at

a rate of (37%), and paragraphs (3-13) for obtaining the value of Kai of (0.53) and at a rate of (43%), and the items (18-22), because they obtained the value of a square like that of (0.53) and at a rate of (57%).

Setup Scale Instructions

The scale's instructions are the guide that guides the respondent, and since the paragraphs prepared by the researchers are in a verbal declarative form, some of them sought to make the scale's instructions clear and accurate for the students of the medical group, and the marking is with under the alternative that applies to the respondent from among the two alternatives (the first, which is affiliated with the white hat), (and the second is different from one of the other hats' colors), as I asked the respondents to answer it frankly and honestly for the purpose of scientific research, and there is no right or wrong answer as long as it expresses their opinion, and that the answer is not seen Only the researchers, and there is no need to mention the name in order for the respondent to be assured of the confidentiality of his responses (Al-Nabhan et al 2013). In order to ensure the clarity of the scale's instructions and paragraphs, the clarity of response alternatives, the detection and avoidance of difficulties facing the respondent, and the time taken to respond on the scale, it was applied in the field to (40) male and female students from the medical group at random, which was previously referred to in the exploratory sample. It turned out that the paragraphs of the scale and its instructions were clear to the sample members and that the time taken for their responses on the scale ranged between 30–35 minutes. After preparing the scale's paragraphs, the Likert method was adopted in building the scale by placing a binary scale in front of each paragraph and assigning the appropriate score for each paragraph according to the respondent's answer. The weights were distributed among the binary answer alternatives as follows: (Yes 1>) No (0>) Statistical analysis of the scale items: The following are the verification procedures:

The Discriminating Power of Items

The researchers verified the discriminatory power of the paragraphs by applying the scale to the sample of statistical analysis, which amounted to (400) male and female students, and then determining the total score for each of the respondents' forms, then arranging the forms in descending order according to the total score, from the highest degree to the lowest degree, and finally assigning (27%) of the forms with higher degrees and (27%) of the forms with lower degrees. The number of members of each of the upper and lower extremity groups was (108) male and female students, and after applying the t-test to two independent samples to find out the significance of the differences between the upper and lower groups for the scores of each item of the scale, all items of the scale were by comparing them with the t-value. The tabular value of (1.96) is distinguished at the significance level (0.05) and the degree of freedom (216). So, it was decided that paragraphs 17–36 are not telling, while the rest of the paragraphs kept their statistical significance. This means that the limit for this procedure is now (34).

The relationship of the paragraph score to the total score of the scale

The researchers extracted the amount of correlation between the score of each paragraph and the total score of the scale by using the Point Biserial Correlation coefficient to find the relationship between a continuous variable and two discrete sub-variables. The researchers extracted the T value of the correlation coefficient. Using the same analysis sample referred to in the previous paragraph, the statistical analysis sample consists of (400) male and female students. After using the t-test for the significance of correlation and comparing it with the tabular t-value of (2.58) at the significance level (0.01) and the degree of freedom (398), the scale was considered structurally valid according to this indicator. It turned out that all the paragraphs achieved a statistically significant correlation. With the exception of paragraph No. (17-30-35), which was not significant, it was excluded. Thus, the number of paragraphs for this procedure has reached 34.

How the level of the paragraph compares to the total level of the dimension it is part of

The researchers extracted the t-value of the Point-by-Series correlation coefficient, and it was found that all the correlations, whether between the components or the components' correlation with the total score of the scale, were statistically significant after using the t-test for correlation significance and comparing it with the tabular t-value of (2,58) at the significance level (0.01) and the degree of freedom (398), and this indicates that the components measure the general concept of conscious thinking, and accordingly, the theoretical assumption matches the empirical analysis, and this is one of the indicators of construction validity (Faraj et al 1980).

The relationship of the degree of dimension to the total degree of the scale

The researchers extracted the matrix of internal correlations between the domains of the conscious thinking scale using a correlation coefficient (Point Biserial Correlation), and it was found that all the correlations, whether between the components or the components' correlation with the total score of the scale, were statistically significant after using the t-test for correlation significance and comparing it with the tabular t-value of (2.58) at the level of significance (0.01) and degree of freedom (398), and this indicates that the domains measure the general concept of conscious thinking, and accordingly, the theoretical assumption matches the empirical analysis, and this is one of the indicators of construction validity (Faraj et al 1980) Table (1) illustrates this.

Table 1: Correlation matrix of conscious thinking scales

Domain Correlation Matrix	Blue Hat	Green Hat	Yellow Hat	Black Hat	Red Hat	White Hat	The Total Score of Conscious Thinking
White Hat	.490	1	.209	.036	.213	.271	.323
Red Hat	.317	.209	1	.175	.288	.274	.232
Black Hat	.137	.036	.175	1	.117	.206	.353

Yellow Hat	.169	.213	.288	.117	1	.316	.288
Green Hat	.413	.271	.474	.206	.316	1	.257
Blue Hat	.377	.323	.232	.253	.288	.257	1
Total score for conscious thinking	1	.490	.317	.137	.169	.413	.377

Psychometric properties of the conscious thinking scale these two characteristics have been verified as follows:

by means of the following types of validity:

Face Validity: This was done by following the steps in the paragraph about checking the validity of the scale.

Construct validity: The validity of the construct was verified for the current scale through the following indicators mentioned earlier in the statistical analysis of the scale items:

Factorial Validity:

Therefore, the researchers calculated the factorial validity of the scale by conducting an exploratory factor analysis of the total scale of conscious thinking whose paragraphs reached the limit of this procedure (34 items), and it was done according to the method of Principal Components with Oblige Rotation in the Obilmin method after applying it to the analysis sample. Due to the overlapping and correlation of variables in the same subject and the inability to explain it with factors completely independent of each other, the statistician, consisting of (400) male and female students, (illustrated in the statistical analysis), and oblique rotation is appropriate for practical life (Gouda et al 2008).

The oblique rotation is preferred because it is more realistic in representing the interrelationships between the factors and provides us with an accurate picture of the strength of these correlations (Tegza et al 2012). And the stronger the correlation between the extracted factors, the more inclined (Ghanim et al 2013). The result of the exploratory factor analysis of the scale domains was that the efficiency of the model used to measure (KMO) amounted to (0.494) and with statistical significance, Teghza (2012) indicated that the (KMO) test for all matrices requires that it be higher than (0.5), according to the Kaiser criterion. According to the Guliford test (Guliford et al 1954), the researchers relied on saturation (0.30) and above for each of the paragraphs, and in the case of saturation of the paragraph On more than one factor at the same time, the highest saturation is taken as a statistical sign. However, all the saturation of the scale items were higher than 0.5, and the results of the factor analysis revealed (3) factors that exceed the value of the potential root Eigen value for each of them (1). The total variance of the factorial matrix is such that the extracted factors are considered statistically significant. as long as the value of its latent roots is greater than one (Athanasius and Al-Bayati et al 1977).

Indicators of Reliability Scale:

Half-segmentation method

The stability coefficient calculated in this way is called the internal consistency coefficient, which aims to show the amount of consistency between the two parts of the paragraphs in measuring the characteristic or characteristic. The stability index is the most common among researchers and workers in the educational and psychological fields, as the process of calculating the reliability coefficient is done by applying the test or scale only once to the stability sample and then dividing the paragraphs after obtaining the answer into two parts, and often it is an even section and an odd section for the test or scale paragraphs. The items with the odd sequence represent the first part of the test, while the items with the paired sequence are the second part of it, and the correlation coefficient is done by calculating the correlation coefficient process between the degrees of the two parts (Al-Yaqoubi et al 2013). The researchers calculated the reliability coefficient in this way and found the correlation coefficient between the two halves. Using Pearson's correlation coefficient, it reached a value of (0.810). Then the correlation coefficient was corrected using the Spearman-Brown equation, where its value is (0.895). To extract stability in this way for the dimensions and for the scale as a whole, the researchers used the Cranbach Alpha equation, where the coefficient of stability of the scale as a whole reached a value of 0.885, which is a good indicator of the stability of the scale.

1. Describe the Conscious Thinking Scale in its final form:

After verifying the standard characteristics represented by the indicators of statistical analysis, validity and stability of the scale, the conscious thinking scale in its final form consists of 34 items, and in front of each item is a binary scale for the response: a dissenting response takes a rating of (0) and a conscious thinking response takes a rating of (1). Therefore, the highest score that the respondent can get for his answer on the scale items is (34) degrees, and the lowest score he can get is (0), and the hypothetical average of the scale is (17) degrees. Hence, those who obtain values higher than (17) enjoy conscious thinking, and those who obtain values less than (17) do not have conscious thinking. So, the scale can be used with the basic research sample (Appendix 1) right away.

Presentation, interpretation, and discussion of the results

The first objective is to identify the conscious thinking of the students of the medical group at the University of Kufa:

The results of the research showed that the average degrees of conscious thinking for the research sample of (466) male and female students from the medical group at the University of Kufa reached (27.31), with a standard deviation of (2.999) degrees, and the hypothetical average was (17), and in order to know the significance of the difference between them, the t-test for one sample was used, as the calculated t-value reached (9.423), which is greater than the tabular t-value of (1.96), at a significance level of (0.05) and a degree of freedom (465), and this result indicates that a student This is supported by the data in Table (2) and Figure (1).

Table 2: Shows the one-sample t-test results in conscious thinking among medical students

Variable	Sample	Arithmetic mean	Standard deviation	Hypothesis mean	T value	Degree of freedom		Significance level
						Calculation	Tabular	
Conscious Thinking	466	27.3 1	2.99 9	17	46 5	9.42 3	1.96	0.0 5

It becomes clear to the researcher that a male and female student from the medical group at the University of Kufa (an indicator of conscious thinking) can describe the researchers (until the current research is conducted) that they have:

-Detachment from feelings, emotions, and feelings and focus on facts and information.

I am interested in specific questions to obtain information or facts.

Direct answers to questions

- They emphasise facts, figures, and statistics and gather information without analysing it.
- They are good listeners.
- They focus on available opportunities and make sure to exploit them.
- Optimism, courage, and willingness to take part in experiments. Anticipate success and reduce the chances of failure.

Highlighting strengths and focusing on the positive aspects.

- Seeking to achieve the desired hopes and goals.
- They search for all the new ideas, opinions, and concepts.
- Use of creative methods and tools.
- Trying to develop new or strange ideas.
- Be careful to modify and change ideas with great flexibility.
- Willingness to take risks and explore new ones.

The second objective: the statistically significant differences in the conscious thinking of the medical group students according to the two variables of the college department: (medicine, pharmacy, dentistry, nursing), gender (students, female students), and grade (first, second, third, fourth, and above).

To extract the differences in the sub-variables of conscious thinking among students of the medical group at the University of Kufa, according to the variables (specialization, gender, grade). The researchers used the Three Way ANOVA to reveal the results of statistically significant differences for the variables (specialization, gender, grade level), and for the two-way interactions between (specialty * gender) (specialty * class) (type). * class) and for tripartite interactions in (specialization * gender * class).

First: The values that function in conscious thinking

With regard to what was produced by the Three Way ANOVA, the researchers found that the significant values were:

The statistical differences in each of the types, where the calculated t-values of (8.976) were greater than the tabular t-values of (3.841) at the level of significance (0.05). This indicates that the students of the medical group at the University of Kufa differ in their use of conscious thinking according to the type (male and female students).

And to check which of the two types (male and female) is more representative of conscious thinking. The researchers used Scheffe's equation to extract the differences between them. where the difference for the equation was (4.009), which means that there is a difference between the averages. Referring to the same averages, the researchers found that the average of the female students, with a value of (26,734) with a standard deviation of (2.453), was greater than the arithmetic mean of the students, with a value of (24,993) with a standard deviation of (2.002). This indicates that female students are more representative of conscious thought than male students. This is shown in Table (3).

Table 3: Scheffe value for male and female students' averages
The medical group at the University of Kufa on the scale of conscious thought

Type	Arithmetic mean	Standard deviation	Scheffe value
Male students	24.993	.0022	4.009
Female students	26.734	2.453	

At the level of significance (0.05), the calculated t-values of (7.461) were also greater than the tabular t-values of (3.841) at the level of significance (0.05). This shows that first-year, second-year, third-year, fourth-year, and above medical students at the University of Kufa use conscious thinking differently depending on their academic grade.

And check which grades (first, second, third, fourth, and above) are more representative of conscious thinking. The researchers used Scheffe's equation to extract the differences between them. where the difference for the equation was (5.255), which means that there is a difference between the averages. Referring to the same averages, the researchers found that the mean and above of the grades, with a value of (24.02) with a standard deviation of (2.0345), was greater than the arithmetic mean of the third grade, with a value of (23.887) with a standard deviation of (1.8630). This result indicates that female students in grades and above come first in conscious thinking, followed by students in the second, third, and fourth degrees, and finally by students in the fourth degree.

Second: Non-functional values in conscious thinking

The significance was not evident in each of the three colleges (in terms of totality), where the calculated T-value of (1.406) was less than the tabular T-value of (3.841) at a significance level of (0.05). And the interaction between (college * type) and the calculated t-value of (.921) was less than the tabular t-value of (3.841) at the level of significance (0.05). And the interaction between (college * class) and the calculated t-value of (3.675) was less than the tabular t-value of (3.841) at the level of significance (0.05). And the interaction between (type * grade) was the calculated t-value of (1.596) less than the tabular t-value of (3.841) at the level of significance (0.05). And the interaction between (college * gender * grade) was the calculated t-value of (1.569), less than the tabular t-value of (3.841) at the level of significance (0.05).

Conclusions

In light of the findings of the current research, we can conclude the following:

1. Students in the medical group at the University of Kufa, both men and women, like to think consciously.
2. The male and female students from the medical group at the University of Kufa wore a number of hats, indicating their conscious thinking in the following:

First Class: The White Hat

Second Division: Yellow Hat The

The Third Class Green Hat

3. The students of the medical group at the University of Kufa differ in their use of conscious thinking according to gender (male and female students). For the sake of the students,
4. The students of the medical group at the University of Kufa differ in their use of conscious thinking according to academic grade, as in the following:

-First class: grades and above

Third-grade students came in second place. In the third class, fourth-grade students.

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