

Cognitive dissonance and its relationship to academic achievement in the subject of specialized teaching methods for students of the College of Basic Education

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Abstract

The study's goal is to learn about cognitive dissonance and its link to academic accomplishment in the field of specialized teaching techniques for students at the University of Babylon's College of Basic Education. The researcher proposed the following null hypothesis: There is no link with statistical significance at the level of significance (0.05) between the values of cognitive dissonance and the degree of academic accomplishment in the topic of specialized teaching techniques for students of the College of Basic Education - University of Babylon.

The researcher used the descriptive associative approach (correlative studies), and the research community consists of students from the College of Basic Education / University of Babylon, the morning study of (males and females) for the fourth stage, for the departments (chemistry, physics, biology) totaling (214), the sample of the research consisted of Out of (160) male and female students with a percentage of (74,76 percent) from the research community, they were chosen at random with a proportional distribution from the students of the College of Basic Education - Departments of Chemistry and Physics for the morning study only for the fourth stage, at the rate of (89) of the students of the Department of Chemistry and they constitute a percentage of (41,58 percent), and (71) of the students of the Department of Physics (33.17 percent). The study determined that there is a link between cognitive dissonance and academic accomplishment in the field of specialized teaching techniques for students at the College of Basic Education - University of Babylon.

Keywords: Cognitive dissonance, teaching methods, University of Babylon

Introduction

First: Research Problem

Cognitive dissonance is one of the important topics that occupied the attention of researchers in many fields until the present time. The theory of cognitive dissonance assumes that the individual has a dissonance between his thoughts and behavior when he learns new knowledge that does not fit with his previously held beliefs and opinions, and this causes him to feel uncomfortable. And the psychological anxiety resulting from the presence of these discordant situations, and this leads to urging the individual to alleviate them in one way or another.

As learners are exposed to many daily academic problems that may affect them with cognitive dissonance and hinder their orientations towards achieving their future goals, as there is a group of learners who cannot keep up with their colleagues or professors or follow their lessons, and then this group may turn into a source of inconvenience in the classrooms.

Therefore, this research came to identify the relationship of cognitive dissonance with academic achievement in the subject of specialized teaching methods for students of the Department of Science, College of Basic Education at the University of Babylon for the academic year (2020-2021).

Therefore, the research problem emerges with the following question:

- What is the relationship of cognitive dissonance with the academic achievement of the students of the College of Basic Education at the University of Babylon in the subject of specialized teaching methods?

Second: The importance of the research:

The researcher believes that university education is one of the main pillars on which various Arab and foreign countries depend in achieving their goals and achieving their goal and through it to reach the distinguished scientific position among the various universities of the world, through the tasks it performs and the jobs it performs at the highest level of efficiency and effectiveness, based on the This is based on a set of pillars and pillars, perhaps the most important of which are its faculty members

And the extent to which they assume their responsibilities to the fullest extent and their interest in graduating generations endowed with science and knowledge. Therefore, we find many international bodies that are active in the search for the most successful possible methods for developing university education in a way that meets the needs of individuals and society and is in line with the requirements of globalization in the twenty-first century and contributes to achieving the basic goals of the university.

Therefore, the study of cognitive dissonance is almost necessary to know the learner's cognitive motives in particular, that the learner is cognitively dissonant in a motivated state, that is, he remains motivated in his behavior to express directions towards the thing he faces or thinks about, and this state of motivation keeps him cognitively and mentally busy, even when He does not appear to be in this condition, but in reality he is agitated and does not calm down and things are not settled for him until the salvation of the situation is achieved or its withdrawal. (Qatami, 2012: 45)

In order to ensure the achievement of a good cognitive outcome for the learner, specialists in the educational field have paid attention to academic achievement because of its importance in the life of the university learner. Academic achievement is also linked to many factors, including what is mental, cognitive, including emotional and other components of the personality, in addition to the impact of achievement on social and cultural variables related to the university environment for the learner. (Al-Jalali, 2011: p. 22)

Third: Research goal

The research aims to find out:

Cognitive dissonance and its relationship to achievement in specialized teaching methods for students of the College of Basic Education at the University of Babylon.

Fourth: the research hypothesis:

To achieve the research objectives, the researcher formulated the following null hypothesis:

- There is no statistically significant correlation at the significance level (0.05) between the values of cognitive dissonance and the level of academic achievement in the subject of specialized teaching methods for students of the College of Basic Education - University of Babylon.

Fifth: Limitations of the search:

1. Spatial boundaries: Department of Science - College of Basic Education - University of Babylon.
2. Human limits: students from the Department of Science - College of Basic Education - University of Babylon.
3. Time limits: the first and second semesters of the academic year (2020-2021).
4. Cognitive limits: cognitive dissonance and academic achievement in specialized teaching methods for students of the College of Basic Education - University of Babylon.

Sixth: Define terms

- A. Cognitive dissonance: defined by Festinger, 1957: "It is a state that includes the individual's mental preoccupation with two topics, two beliefs, or two ideas that occupy the same importance but are contradictory in nature." (Festinger, 1957:11)
- B. Achievement: Ubadah, 2001 defined it as "that level that the learner has reached in the acquisition of academic subjects" (Ubadah, 2001: 146).

Theoretical aspects and previous studies:

Part one: Theoretical aspects:

First: the cognitive dissonance.

Cognitive dissonance concept

In the fifties (Leon Festinger, 1957) published his theory of dissonance or cognitive dissonance and the content of this theory is that ideas act as motives and that they can provoke motivation so strongly that it may outweigh very basic stimuli. Cognitive or intellectual dissonance means a state of conflict and contradiction between what the individual believes and his behavior, and an example of this is that you believe through a lot

of scientific research information that there is a relationship between smoking and lung cancer, but you nevertheless continue to smoke. This is a situation in which an idea contradicts or diminishes with behavior, thus creating a psychological situation that is not comfortable. When the cognitive aspects of information, ideas and perceptions conflict or contradict each other, then the individual feels uncomfortable with the presence of a state of tension, and this tension provokes and directs behavior Towards reducing it by making mental perceptions or cognitive aspects in a relationship balance and harmony, such as the individual searching for new information or changing his behavior, and changing his directions. (Saleh, 1988: 143)

The cognitive dissonance theory presented by Leon Festinger (1957) is one of the most important theories that were presented in the field of Consistence Theory, and it is still one of the most important, effective and influential theories in this field and in the field of media studies in general. (Littlejohn, 2002: p78)

Therefore, the theory of cognitive dissonance is one of the cognitive theories that explain the motivation of the individual in terms of mental knowledge, as many theories appeared that explain the motivation of the individual, some of them focused on the biological aspects of motivation, and others focused on environmental aspects such as physical and social, and some focused on Psychological aspects such as cognitive and emotional. (Qatami: 2012, 25)

Second: Academic achievement:

It represents the outcome of what students learn after a certain period of time has passed, and it can be measured by the degree he obtains in the achievement test, for the purpose of knowing the extent of the success of the strategy he makes, and the teacher plans his goals, and what the student obtains is translated into grades and achievement is the degree achieved by the learner, or the level of success The student who has achieved, or reached in the course, an advanced level in the educational field. (Al-Saadi, 2020: 17)

Academic achievement is one of the educational concepts that are commonly used in the field of education and educational psychology in particular, because of its importance in evaluating the learner's academic performance, as it is seen as a tool for evaluating and measuring educational outcomes and an important indicator of determining the level of achievement of educational goals and the appropriateness of the educational material. And an evaluation of all teaching activities and events, as specialists in the field of education and psychology are concerned with academic achievement because of its great importance in the learner's academic life. (Al-Jalali, 2011: 12)

And that achievement is highly correlated with the method followed by the teacher in teaching or the strategy used in the classroom. Academic achievement is the outcome of what the learner has understood and learned of information, facts, theories and skills, and it can be measured by the degree that the learner obtains as a result of undergoing standardized tests, which may be objective tests or essay tests. Judging by the learners' achievement of the effectiveness of the method or strategy used in teaching, the relationship between achievement and strategy is a direct relationship. The higher the achievement, the more

effective, good and successful the strategy used. (Abu Jadu, 2014: 425)

The second section: Previous studies: Arab and foreign studies that dealt with cognitive dissonance:

1. Salama Study (2016)

(Cognitive dissonance and social responsibility among the students of the Hashemite University in the light of the variables of gender and college)

- **Place of research:** The study was conducted in Jordan (The Hashemite University).
- **The aim of the research:** to know the level of cognitive dissonance and its relationship to social responsibility among the students of the Hashemite University.
- **Research Methodology:** The researcher used the descriptive method.
- **The research community and its sample:** The research community consisted of all the students of the Hashemite University, for the second summer semester 2013-2014, which numbered (7955) male and female students, and the study sample consisted of (362) male and female students who were chosen by random stratified method.
- **Research tool:** two scales, one for measuring cognitive dissonance and the other for measuring social responsibility.
- **Statistical means:** The researcher used the following statistical methods: (Alpha Crow-Nbach equation _ Binary ANOVA- Percentage- Discrimination Coefficient Equation)
- **Research results:** The results of the study showed that the level of cognitive dissonance and the level of social responsibility among the students of the Hashemite University were average, and that there were no statistically significant differences in the level of cognitive dissonance, and the level of social responsibility attributed to the variables of gender and college. The results also showed the existence of a significant negative correlation between the total degree of cognitive dissonance and the total degree of social responsibility.

2. Study: Chow & wood (2001)

(Comparing the results of the cognitive dissonance test between university students in Canada and university students in the United States of America).

- **Place of research:** United States of America.
- **The aim of the research:** to compare the results of the cognitive dissonance test between university students in Canada and university students in the United States of America.
- **Research Methodology:** The researcher used the descriptive method.
- **Research community and sample:** The study was applied to 269 male and female students in Canada, and 204 male and female students in the United States of America.

- **Research tool:** The researcher used the cognitive dissonance scale of Cassel, Reiger & Chow (Cassel, Reiger & Chow, 2001), which consists of 200 items divided into eight dimensions.
- **Statistical means:** (percentage, chi-square, quantitative test, Alpha-Cronbach's equation, two-way analysis of variance)
- **Research results:** The results showed that the higher the age and educational level of the student, the less cognitive dissonance there was. The results also found that university students in Canada had a lower level of cognitive dissonance compared to university students in the United States of America.

Research Methodology and Procedures

First: Research Methodology:

To achieve the objectives of the research, it is necessary to define the research community, choose its representative sample, and build the research tools, as well as selecting the appropriate statistical means for data processing.

Second, the research community:

The research community consists of students from the College of Basic Education / University of Babylon, the morning study of (males and females), for the departments (chemistry, physics, biology) of the morning study students only for the fourth stage, numbering (214) male and female students, and by (89) students of the Department of Chemistry They constitute (41.58%) and (71) of the students of the Department of Physics, and they constitute (33.17%) and (54) of the students of the Biology Department, and they constitute (25.23%).

Third: The same research:

The research sample shines from (160) male and female students with a percentage of (74,76%) of the research community, then they are selected by random method with a proportional distribution from the students of the College of Basic Education - Departments of Chemistry and Physics. (89) of the students of the Department of Chemistry, constituting (41.58%), and (71) of the students of the Department of Physics, and they constitute (33.17%).

Fourth: search tools

Cognitive dissonance scale: The test items were formulated through:

1. Defining and defining the skills included in the test, and reviewing the available tests that dealt with cognitive dissonance as a study, safety (2016), and a study (Chow & wood, 2001).
2. Interviewing a group of experts in educational and psychological sciences, teaching methods, measurement and evaluation, to identify the areas of cognitive dissonance that

can be identified among students of the College of Basic Education, and thus the researcher dealt with all areas.

3. Based on what was mentioned, the researcher formulated (56) paragraphs by (8) paragraphs for all fields (Emotional dissonance, cognitive or behavioral dissonance, the field of emotion management, the field of mental health, the field of psychological and social adjustment, the field of socialization, and the field of academic competence) represented the items of the cognitive dissonance scale in its initial form.
4. Validity of the scale: Validity is one of the important features in the field of psychological assessments and tests, where the test is honest if it measures what it was designed for in a good way, since the validity of the test is related to what it actually measures, and honesty in general is that the test measures and what was set up to measure it (Al-Khayyat, 2010: 157), the researcher verified the validity of the test through:

A. **Apparent honesty:** In order to ascertain the apparent validity of the scale, the researcher must present the scale in its initial stage to a number of arbitrators to express their opinions about its validity.)

The researcher presented the cognitive dissonance scale consisting of (56) items in its initial form, which was formulated according to Festinger's theory of cognitive dissonance, appendix (8) to a group of (23) experts who specialize in the field of teaching methods, psychological sciences, educational, measurement and evaluation Supplement (3) To get acquainted with the validity of the paragraphs of the scale, and based on the opinions and observations of experts, minor modifications were made to some of the paragraphs.

B. **Construction validity:** It is the scale's ability to measure a specific hypothesis or reveal a specific behavioral characteristic or activity, meaning that it focuses on the characteristic of the characteristic for which the scale was designed to be measured. (Al-Fatlawi, 2010: 141)

1- Finding the relationship between the paragraph's score and the total score of the scale:

To verify this, the values of the correlation coefficient were calculated between the degree of each item with the total score of the test, and the researcher used the Pearson correlation coefficient to extract the relationship between the item and the total score of the scale, and the correlation coefficients for all items were significant, and Ebel states that the value of the correlation coefficient is acceptable. If its value is (0,20) or more (Ebel, 1972: 555)

2- The relationship of the degree of the paragraph with the degree of the field:

When using the Pearson correlation coefficient for the purpose of finding the relationship between the degree of the paragraph and the degree of the field, and it was found that all the correlation coefficients are statistically significant.

3- Finding the relationship of the degree of the field to the total degree of the scale:

To achieve this, the values of the correlation coefficient were calculated between the degree of the field with the total score of the scale, using the Pearson correlation coefficient, and the results of the statistical analysis showed that the values of all correlation coefficients are statistically significant at the level of significance (0.05).

5. Statistical analysis of the scale items:

The sample of statistical analysis consisted of (40) male and female students from the research community, who were selected by random stratified method and in a proportional manner from the students of the Department of Biology / College of Basic Education for the morning study of the fourth stage.

- Scale stability

It means obtaining consistent and consistent results when using the evaluation method, and this is done through certain tests that indicate a level consistent with the student's abilities (Talafha, 2013: 289).

To verify the stability of the scale, the researcher used the internal consistency method, represented by the alpha-Cronbach equation, and the reliability coefficient reached (0.98), which is a good stability coefficient.

2- Collection:

A. Achievement test for the fourth stage:

One of the requirements for the application of the research is to prepare an achievement test used to measure the academic achievement of the research sample in the specialized teaching methods subject, so the researcher prepared an achievement test in the study subject, and after preparing the behavioral objectives related to it, and in line with the level of the research sample, if the researcher prepared a test consisting of (50) a test paragraph for students of the fourth stage, consisting of two parts (multiple choice and articles), as the researcher selected the test items from multiple (40) items out of the total of the total test items amounting to (50) items; It is considered one of the most important objective tests with a wide spread and is characterized by its accuracy, clarity, and time reduction, in addition to being a large part of the study material, and the effect of the guesswork factor in it is very little. (Robert, 2005:55) , As for the essay test, the researcher put (10) essay paragraphs for it, and the researcher sought to use it to know the possibility of analysis, application, and evaluation of students.

After the researcher prepared the test boxes, she formulated the instructions for the test and how to answer it, as it included a solved example on how to answer, and accordingly, the test boxes became ready for application.

Fifth: Application procedures**1. Cognitive dissonance:**

The researcher applied the final cognitive dissonance scale to the students of the fourth stage in the College of Basic Education - University of Babylon on Thursday (15/4/2021), and after the final application of the scale was completed, the students' answers were corrected.

2. Collection:

The researcher applied the final achievement test to the students of the fourth stage in the College of Basic Education - University of Babylon on (28/3/2021) corresponding to Sunday, at the same time, as the exam date was set a week before the exam date so that the students had enough time to prepare for it. The researcher personally supervised the conduct of the test with the help of the subject to monitor the students during the performance of the test.

Sixth: Statistical Means:

The following statistical methods were used to address the research procedures and then through the Statistical Package for Social Sciences (SPSS).

(Chi-square - the difficulty equation for the subject paragraphs - the equation for the difficulty factor for the article paragraphs - the discriminatory power equation for the topical paragraphs - the power factor for the discrimination of article paragraphs - the one-sample T-test) - Pearson correlation coefficient - the Saberman-Brown equation - Point correlation coefficient Bisreal - Alpha Crow-Nbach's equation - Effectiveness of false alternatives - Arithmetic mean equation - Standard deviation - T-test for two independent samples).

Section of results

This chapter includes the presentation of the results that were reached by the researcher according to the hypothesis that she set and the interpretation of the results. It also deals with the conclusions, recommendations and suggestions reached by the researcher:

First: Presentation of the Results

To verify the null hypothesis, which states (there is no statistically significant correlation at the significance level (0.05) between the values of cognitive dissonance and the level of academic achievement in the subject of specialized teaching methods for students of the College of Basic Education - University of Babylon.

The researcher verified the validity of the hypothesis, and reached the results recorded in Table (1):

Table (1) the arithmetic mean, standard deviation, and T-values of the academic cognitive dissonance

Relation ship	Li nk	Arith metic	standa rd	Correlati on	T value	degre e of	Indica tion	indica tion
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	type	mean	deviation	coefficient value	calculated	tabular	freedom	level	
Cognitive dissonance	basic	178.98	42.88	0.69	11.792	1.96	153	0.05	function
		34.55	5.07						
collection									

The answers of the research sample of (155) students were analyzed, and it was found that the arithmetic mean of cognitive dissonance (178.98) and achievement (34,55) with a standard deviation of (42.88) for cognitive dissonance and (5.07) for academic achievement, and the value of the correlation coefficient (0.69) In order to find out the significance of the difference, the t-test for one sample (One Sample t-Test) was used. (153), and this means that there are statistically significant differences between the two relationships, and this result indicates the existence of a relationship between cognitive dissonance and academic achievement.

Second: Interpretation of the results:

It indicates that the research sample has a high level of cognitive dissonance and this result is attributed to the religious system that implants its orientations and beliefs in the individual through the family and the ideas and beliefs implanted in the personality of the individual and expands its development gradually to become a part of his personality and tries to defend it with all his mental capabilities. The reason for this is due to the social environment that is characterized by intellectual stagnation and dependence on the family and society in forming ideas as postulates and facts that do not accept change.

Third: Conclusions:-

- University students have cognitive dissonance.

Fourth: Recommendations:

- 1- Holding scientific seminars to clarify the concept of cognitive dissonance for students.
- 2- Assigning students to prepare scientific research and publications to clarify the concept of cognitive dissonance.
- 3- The family should allow the desires and energies of its children to come out without repressing them or directing them according to their desires, i.e. (the parents).

Fifth: Suggestions:

1. Conducting a study similar to this research with other samples in the governorates of

the country and comparing its results with the results of the research.

2. Conducting a study similar to the research on different educational stages in the middle and preparatory stages and comparing its results with the results of the research.

3. Conducting a comparative study in the cognitive dissonance between students of public and private colleges

References

1. Abu Jadu, Saleh (2014): Educational Psychology, 14th Edition, Dar Al Masirah for Publishing, Distribution and Printing, Amman, Jordan.
2. Al-Jalali, Lumaan Mustafa (2011), Academic Achievement, 1st Edition, Dar Al-Maysara for Publishing, Distribution and Printing, Amman, Jordan.
3. Al-Khayat, Majid Muhammad (2010): The Basics of Measurement and Evaluation in Education, 1st Edition, Dar Al-Raya for Publishing and Distribution, Amman, Jordan.
4. Al-Saadi, Hassan about Muhaisen, (2020): Effective teacher and teaching strategies and models, 2nd floor, Al-Shorouk Office for Printing and Publishing, Diyala, Baqubah, College of Basic Education.
5. Salama, Soraya Abdel Hamid and Thaer Ahmed Ghobari: Cognitive dissonance and social responsibility among the Hashemite University students in the light of the variables of gender and college, The Jordanian Journal of Educational Sciences, Volume 12, Issue 1, 2016 AD.
6. Salih, Qasim Hussein (1988): Personality between endoscopy and measurement, Bm, Baghdad.
7. Talafha, Hamed Abdullah (2013): Curricula, Planning, Development, and Implementation, 1st Edition, Dar Al-Radwan for Publishing and Distribution, Amman, Jordan.
8. Ubadah, Ahmed (2001): The capabilities of innovative thinking in the stages of general education, 1st floor, Al-Kitab Center for Publishing, Distribution and Printing, Cairo, Egypt.
9. Al-Azzawi, Rahim (2008), Measurement and Evaluation in the Teaching Process, 1st Edition, Dijla Publishing and Distribution, Amman, Jordan.
10. Al-Fatlawi, Suhaila Mohsen (2010), the teaching entrance, 2nd floor, Dar Al-Shorouk Publishing, Amman, Jordan.
11. Qatami, Youssef Mahmoud (2012): The Theory of Dissonance, Imperfection and Cognitive Change, 1st Edition, Dar Al Masirah for Publishing, Distribution and Printing, Amman.
12. Chow, P., & Wood, W. (2001). Comparing canadian and united states high school students on cognitive dissonance test scores. *Journal of Instructional Psychology*, 28(3), 137-141.
13. Ebel, R.L. (1972): Essentials of educational measurement. New Jersey: Prentice – Hall.
14. Festinger, L. (1957). A theory of cognitive dissonance. Evanston, IL: Row, Peterso.
15. Littlejohn, Stephen . w . theories of human communication . 7th ed (U.S.A ; wadsworth Thomson learning , 2002) .
16. Robert J.(2005),Classroom,Assessment,&grading,tha work.