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# Fixed mentality and its relationship to academic failure among sixth-grade students

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**Abstract**---The students in the preparatory class have a fixed mentality. Academic failure among sixth-grade students. The significance of the statistical difference between the fixed mindset in terms of gender (male-female) and specialization (scientific-literary). the statistical significance of the gender (males-females) and specialization (scientific-literary) differences in academic failure. The correlation between a fixed mindset and academic failure among sixth-grade students. The extent to which academic failure contributes to the fixated mindset of sixth-grade students.

**Keywords**---fixed mentality, relationship, academic failure, sixth-grade students.

## Introduction

To achieve the research objectives, the researcher relied on the following:

1. Using the (descriptive associative approach) to reveal the fixed mindset and its relationship to academic failure.
2. Building a fixed mindset scale for sixth-grade students, based on the Entity theory (2000), which describes the fixed mindset. The scale was composed in its final form after completing the conditions of honesty, stability, and ability to distinguish, from 25 items distributed among three areas (performance goal, response despondency, low self, or conditional self).
3. Building a scale of academic failure among sixth-grade students in middle school was based on the Attribution Theory (2010), and the scale was composed in the final form after completing the conditions of honesty,

stability, and ability to distinguish from 27 distributed among three areas: (ability, effort, task difficulty, and luck).

To complement that, the researcher applied the two scales to a sample of 400 male and female students in sixth grade schools in the district of Najaf, which were randomly drawn according to the proportional method. the following:

- There is a statistically significant difference between the fixed mentality of the literary specialisation and the human one.
- There is no statistically significant difference in fixed mindset between males and females.

Academic failure is not statistically significant among sixth-grade students.

- There are no statistically significant differences in academic failure in the variables of gender and specialization.
- There is no statistically significant correlation between the fixed mentality variables and academic failure among sixth-grade students.
- There are no statistically significant differences between the variables of fixed mindset and academic failure in the variables of gender and specialization.

**According to the results of the research, the researcher can recommend the following**

### **Search problem**

In her study with Diener (1980), Carol Dweck presented a sample of fifth and sixth grade students, where she presented a set of problems related to some concepts. The results of the study were that the students had the ability to solve the problems that were presented at the beginning, but they were unable to solve the first eight problems, and they were not able to solve the following four problems, as the problems were very difficult for those of their age, so the results were that half of the students showed a despondent response, while the other half showed a response directed towards mastery. Ali (Martin Seligman & Steven Meyer) (Seligman & Maier, 1988: 74-1-9). To describe the students' view of failure, that is, when difficulty occurs, the situation from their point of view is considered beyond their capacity and they have nothing about it, while referring to the response directed towards mastery, that is capable of bearing failure because students remain focused to achieve excellence despite the difficulties facing them, according to their belief that the circumstances The situation is under their control (Diener & Dweck, 1980; p. 33-34). (What is the strength and direction of the fixed mindset among the students in the sixth year of middle school?)

### **Research importance**

And the task of the fixed mentality of some students when they move from success to failure, and they show a despondent response, and they appear to despise their intelligence because of the failure they faced, leads to their belief that the intelligence of a fixed trait (innate) makes the owners of this belief worry about how much intelligence they have and how much they are intelligent, and

makes the mental challenge and failure threatening, and that the challenge is a real threat because it makes their intelligence be tested in a situation that is evaluated through a set of new mental tasks, and the importance of the fixed mentality is highlighted because it works to reduce the motivation of students (Aronson & Quinn, 1998: 20).

### **Research Objectives**

#### **The current research aims to find out the following**

The current research aims to identify

- 1-The fixed mindset of the sixth-grade middle school students
- 2-The significance of the statistical difference between the fixed mindset in terms of gender (male-female) and specialisation (scientific-literary).

### **Search limits**

Time limits: The current research is determined by the time limits of 2021–2022. The current research is determined by the spatial boundaries of middle schools in the centre of Najaf Governorate. The current research is determined by the cognitive boundaries between two fixed mental variables. Human boundaries: the current research is determined by human boundaries. The current research sample is from sixth-grade students in middle school (male and female).

### **Practical part**

#### **Research community**

The current research community is determined by the sixth-grade students in middle schools in the city of Najaf for the academic year 2021-2022/morning study/, and their number is (8770) male and female students distributed over (32) schools and (4268) students, among whom (3479) in the scientific specialisation and (798) in the humanitarian specialization, with (4502) female students, including (3604) in the scientific specialisation and (898) in the literary specialization and (Table 1).

#### **Statistical Analysis Sample**

The sample was chosen by the stratified random sample, and it was chosen by the proportional method (400 male and female students). This size is considered appropriate in building psychological scales (Al-Zoba'i et al., 73:1981) at a rate of (4.561%) of the research community, with a total of (194) students and (206) female students, and (Table 2) shows this.

### **The search tool**

In order to measure the current research variable (fixed mindset), the researcher built a scale, and the following presentation shows the steps of building each of them.

### **The first tool is The Fixed Mindset Scale**

In order to build a scale of fixed mindset among the students in the sixth preparatory grade, the researcher took the following steps:

1. Determine the theoretically fixed variable in mentality:
2. The number of scale graphs
3. Scale correction and answer gradation
4. Preparation of scale instructions
5. The opinions of the arbitrators on the paragraphs of the Fixed Mindset Scale and its instructions  
 The scale in its initial form with 32 paragraphs, was presented to fourteen arbitrators specialising in the field of psychology (Appendix 2), including the objective of the research and the theoretical definition adopted for the purpose of expressing their opinions regarding:
  - The validity of the paragraphs is to measure what they were developed for.
  - The appropriateness of the alternative answers
  - Make what they see as amendments (rephrase, delete, and add) to the paragraphs.
6. Clarity of scale instructions and paragraphs
7. Statistical analysis of the scale items:

Statistically analysing items is one of the basic requirements for constructing psychological scales since the logical analysis of them may not reveal their validity or sincerity in an accurate form (Ebel, 1972:408), and the goal of this procedure is to maintain the distinct items among people who are excellent in the quality measured by the scale and between people The weak in that trait (Al-Imam, 1990:114), and the methods of the difference between two extreme groups (external consistency) and the method of the paragraph degree relationship to the total degree (internal consistency), are considered procedurally appropriate in statistical analysis.

### **The two extreme groups (external consistency) are**

In order to analyse the items of the fixed mentality scale according to this method, the scale of (30) items was applied to the research sample of (400) male and female students who were selected from the research community distributed according to the variables of gender and academic specialization, and after correcting the scale items by giving the examinee a degree of (4-1) on each of the positive scale items and (1-4) on each of the inverse scale items, the scores of the scale's answers were collected to extract the total score for each student and arrange them in descending order, starting from the highest score and ending with the lowest score. A percentage of (27%) of the forms with the highest scores were (108) forms and were named as the upper group whose scores ranged from (100-82%) and (27%) of the forms with the lowest scores were chosen, and they were (108) forms, whose scores ranged from (71-71). 46) with the aim of identifying two groups with the largest possible size and maximum variance (Anastasi, 1976: 208).

By using the t-test for two independent samples to test the significance of the differences between the mean of the upper and lower groups for each item, it appeared that the t-value calculated for all items on this scale when compared with the tabular value was distinct at the level (0.05) and Table (5) shows this. The relationship between the paragraph's degree to the total sum (internal consistency): This method provides a spoken criterion that can be relied upon in finding the relationship between the individuals' scores for each item and the total score of the scale. (51:1985). and by using the Pearson correlation coefficient to extract the correlation coefficient between the degree of each paragraph and the total score of the scale, where the forms subject to analysis in this method were (400) forms. It was found that all the correlation coefficients were greater than the critical value of the correlation coefficient (0.098) at the level of significance (0.05) and the degree of freedom (398), and Table (6) shows the correlation coefficients between each paragraph and the total score of the scale.

### **Factor Analysis**

Since the researcher derived the fields of the scale through the theoretical framework and the definition of the concept, the question that arises in this field is: Is it possible to derive the fields (new factors) that make up the concept of the fixed mindset that are derived in proportion to the characteristics of the society in light of the formulation of the current scale?. Testing the adequacy of the sample size To perform these tests, the following is used: The Kaiser Mayer Olken Test (KMO Test)

This test is used to determine the sufficiency of the sample size in explaining the phenomenon studied, and its value ranges between zero and one. We find that the value of the KMO test is (0.574), which indicates the sufficiency of the research sample size.

### **Bartlett Test**

Used to test whether the original correlation matrix is a unit matrix or not. If the original correlation matrix is not a unit matrix, it indicates the existence of relationships between the variables, which is what is required when using the principal components method. According to Table (7), the value of the Bartlett test is (1567.057) and at a significant level (0.000), indicating that the test is statistically significant at the level of significance (0.05), and it has checked the condition of using exploratory factor analysis.

After the procedures for analysing the items of the scale and testing the adequacy of the sample size and the correlation matrix, the researcher conducted an exploratory factor analysis to identify the factors behind the psychological phenomenon of the items of the scale, consisting of thirty items, using the statistical package for social sciences (SPSS) and using the method of basic components developed by Hotelling (Ferguson). & Takane, 1989: 533). The research sample of (400) male and female students was taken, and after calculating the Pearson correlation coefficients between these variables, the correlation matrix was formed on which the exploratory factor analysis was conducted, resulting in the following (30) factors arranged in descending order in

terms of their contribution to the variations calculated. Thus, the researcher used the Varimax method, which was suggested by Kaiser, which resulted in new saturations for each of the three factors in the recycling process. Thus, the number of paragraphs for each factor was determined based on Thurston's criterion, which indicated the importance of the paragraph being saturated in a way that has practical significance in a particular factor and weak in other factors (Abu El-Nile, 1986: 33) and used to judge the value of global saturation for paragraphs of practical significance. Saturation is close to zero if it is less than 0.30, and this was used as a criterion on the basis of which the paragraphs in the factor were accepted. Based on the saturation of the paragraphs, it was found that the factors that came out of the rotation process have psychological meanings. Here's an evaluation of the factors that came out of the rotation process:

### **The second factor**

The importance of this factor comes in the second degree, as the value of its contribution to the total socialism was (2.227) and explained (7.422) from the interpreted variance. We can call this factor the despondent response.

### **The third factor**

The importance of this factor came in the third degree, as the value of its contribution to the total socialism was (2.091) and explained (6.970) from the explained variance. We can call this factor the name (conditional self).

The relationship between the degree of a dimension and the total degree of the other dimensions and the total degree of the scale (internal consistency): This was verified in the light of using the Pearson correlation coefficient to find the relationship between the grades of the sixth-grade students on each dimension and the total score of the scale. The correlation coefficient of (0.098) at the level of significance (0.05) and the degree of freedom (398), and table (10) illustrates this. From the above table, we find that the values of the correlation coefficients are relatively high, which indicates that these dimensions are linked together in a coherent and homogeneous manner; that is, they actually measure one concept that the scale aims to measure, as they all represent the fixed mentality. In this regard, Anastasi (Anastasi, 1976) indicated that the correlations of the sub-domains with each other and with the total score of the scale are basic measures of homogeneity and help to determine the domain of behaviour to be measured (Anastasi, 1976: 155).

### **Indicators of validity and reliability of the scale**

Honesty and stability must be available on the scale in order to be usable. Sincerity and reliability are among the most important aspects of the measurement. (Rust, 1989:69).

#### **1. Validity:**

The concept of honesty is one of the most important basic concepts in the field of psychometrics, so its definitions are many, but one of the most

important of these definitions is (the ability of the scale designed to measure what it was designed for). The validity of the current scale was achieved through the following methods:

- **Face Validity:**  
The best way to extract apparent validity is to present the scale's paragraphs to a group of specialised experts and solicit their opinions on the extent to which the scale's paragraphs represent the characteristic to be measured (Al-Ghareeb, 1985: 679). This kind of validity for the fixed mentality scale was reached by showing it to experts and asking them what they thought about the validity of the scale's paragraphs and instructions (Appendix 2).
- **Construction Validity**  
This type of honesty is considered one of the most important types of honesty (Thorandek and Higgin, 1989:7). The construct validity of the current scale was achieved through the methods of paragraph analysis, in addition to the exploratory factor analysis of the fixed mindset scale.

## 2. Reliability:

Stability means the extent of consistency of the scale in what it provides us with information about the behaviour of individuals (Abu Hatab and Sadiq, 1991:101), and its calculation is necessary and essential in the measurement. The stability of the current scale has been verified by the following methods:

### **Test-Retest**

The reliability coefficient according to this method is the value of the correlation coefficient between the scores of individuals that we get from the first application and re-applying the scale to the individuals themselves with an appropriate interval between the two applications (Anastasi, 1976:115). In order to calculate the reliability coefficient in this way, the scale was applied to a sample of 40 male and female students in the sixth grade in preparatory schools, and Table (10) illustrates this. Two weeks later, the scale was re-applied to the individuals themselves, and by using the Pearson correlation coefficient between the scores of individuals in the two applications, the stability coefficient appeared in this way, and this value was considered a good indicator of the stability of students' answers on the scale over time. This method depends on the consistency in the performance of the individual from one paragraph to another and is based on the standard deviation of the scale and the standard deviations of the individual items (Thorndike and Higgin, 1989: 79). As the paragraph is a self-contained scale, The stability of the fixed mentality scale was extracted in this way by adopting the scores of the research sample (400) male and female students and using the alpha-Cronbach equation. The reliability coefficient reached 0.78, which is a good coefficient indicating the homogeneity of the paragraphs.

### **Calculating the total score of the Fixed Mindset Scale**

The scale in its final form consists of thirty items (Appendix 4), so the highest possible score for the student is (100), and the lowest score for him is (30). The hypothetical mean of the scale is (62.5) degrees, and whenever his score is greater

than the hypothetical mean, that is an indication of his fixed mentality, and whenever it is less than the hypothetical mean, that is an indication of its decline.

## **Results**

Statistical treatments indicate that the arithmetic mean of the students' scores on the fixed mentality scale was (64.2375) with a standard deviation of (8.26267), while the hypothetical mean was (62.5). At the level of significance (0.05) and the degree of freedom (399), the calculated t-value (4.206) is greater than the tabular t-value (1.96), which shows that the students have a fixed mentality. Table (19) shows this. This result could be attributed to the conditions that the Iraqi people faced during the Corona pandemic, which resulted in the passage of easy successes, the reduction of study materials for students in schools, and electronic teaching that lacks interaction and thus does not lead to meaningful learning. According to Jean Piaget's theory, learning is the result of cumulative knowledge that does not lead to the occurrence of associations and solving problems in the future. The second objective is to determine the significance of the statistical differences in the fixed mindset according to the variables of gender (males and females) and academic specialisation (scientific, literary). For the purpose of identifying the significance of the statistical differences between the average scores of students on the scale of fixed mentality according to the variables of gender (males, females) and specialisation (scientific, literary), the researcher used the two-way analysis of variance at the level of significance (0.05) and table (20) illustrates this.

### **A-The difference according to the gender variable (males or females)**

The results showed that the difference between males and females on the fixed mentality scale is not statistically significant when the calculated t-value (0.493) was compared with the tabular value of (3.84) at the level of significance (0.05), as the arithmetic mean for males was (64.4897) with a standard deviation of (8.01310), and the arithmetic mean for females was (64.0000) with a standard deviation of (8.50366), and the researcher sees the possibility of interpreting this result according to the theory of the personal structures of the scientist George Kelly, because it allows us to estimate the personality from the cognitive perspective, because understanding the personality from the cognitive perspective, and this indicates that students do not suffer from any defect in mental abilities. By virtue of the school stage, the goals are to a large degree similar between males and females and that their vision Their perception of the world and their beliefs are similar to some extent, and the circumstances in which they lived, from the outbreak of the epidemic and dropping out of school, led them to adopt beliefs that led them to achieve performance goals and appear smart to satisfy the surrounding community.

## **Conclusions**

A fixed mindset is closely related to easy success, meaning that lack of training and effort leads to the formation of a fixed mindset. The intelligence and development of the individual depend on frequent training and the use of effective learning strategies, not on measuring innate ability. Praise and praise sometimes



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