

The Effect of the Swartz model in the development of lateral thinking among students of the Institute of Fine Arts in the subject of aesthetics

¹Aseel raad jamal, ²Fatima Mohammed Abdullah, ³Ismail Khalil Ismail

¹Mustansiriyah University, Faculty of Basic Education, aseelraad150@uomustansiriyah.edu.iq

²Mustansiriyah University, Faculty of Basic Education, Dr.fatma.m.alanbaki@uomustansiriyah.edu.iq

³Mustansiriyah University, Faculty of Basic Education, Dr.ismail.khalil@uomustansiriyah.edu.iq

Abstract

The study aimed to identify (the effect of the Swartz model in the development of lateral thinking among students of the Institute of Fine Arts in the subject of aesthetics) . The researcher adopted the experimental design and the study sample consisted of the students of the Institute of Fine Arts , the fourth grade, the theater department of (20) male and female students, who were chosen intentionally. The students are divided into two groups, one officer and the other experimental .The plans were prepared according to the Swartz model)) The researcher used a set of statistical methods (Spss) The most important results of the research were: - The excellence of the students of the experimental group who study aesthetic science according to the (Swartz) model over the students of the control group who study the same material in the traditional way is due to the steps of the (Swartz) model that contribute to the development of thinking and concepts for a longer time. In light of the results reached, the most important conclusions were: - The Swartz model has proven its effectiveness within the limits in which the current study was conducted in developing the skills of lateral thinking among students compared to the traditional method. Accordingly, the researcher recommended the use of modern models in supporting the educational process and supporting the teaching process. These models can communicate the study materials to the students' minds and keep them. Accordingly, the researcher proposes several proposals, including: - Building a program based on the Swartz model to develop critical thinking among students of the Department of Art Education with the material of technical criticism.

Keywords: Swartz Model, Lateral thinking, Aesthetics.

CHAPTER ONE

Research problem:

Our current era has witnessed an increase in the gap between the educational needs of students and the professional capabilities of teachers to keep pace with rapid civilizational changes. The need to employ many modern educational methods, strategies and models has increased to seek the development of students' thinking skills to think, research, criticism and listen to the extent possible ,which must be built and developed because they represent the means adopted to transfer ideas and information to the

application, and in order to reach the desired stage, the teacher must develop his skills in all educational fields and trends related to sounding the depths of students , and know the finest ways to reach their minds .

"It is through this that we find that the process in strategies, models and teaching methods is no longer a discussion ' but a pressing issue for balancing life . The role that education systems must play is to modify and change their old programs, plans and methods, and to enable learners to adapt to new developments and to respond and adapt to the new philosophy that society wants. In order to face the rapid change

that occurs in society, we must use the finest teaching methods and strategies that lead to the achievement of educational goals in the shortest time and effort. " (Dorzah, 13, 1995:).

Based on the above, the research problem can be summed up with the following question: -

What has been the effect of the Swartz model on the development of lateral thinking among students of the Institute of Fine Arts in the subject of aesthetics?

The importance of research: - The importance of research is highlighted by the following points:

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1- The importance of the Swartz model in thinking, which is a basis for developing thinking through its steps (introduction to thinking, presentation of skill, active thinking, thinking, applying thinking, evaluation of thinking).

2- The importance of teaching lateral thinking skills as they help to develop thinking within the higher levels

3- The importance of studying aesthetics and its usefulness as it is one of the most important basic subjects in teaching the philosophical aspect of art and learning about different civilizations.

Objective of the research: - The current research aims to: -

1-Identifying: (The effect of the Swartz model in the development of lateral thinking among students of the Institute of Fine Arts in the subject of aesthetics) and to achieve this goal through the following:

- Build a lateral reasoning test.
- Preparing teaching plans according to the steps of the (Swartz) model.

Research hypotheses:

Zero hypothesis (1): There are no statistically significant differences at the significance level (0.05) in the average lateral thinking ranks of the experimental group between the pre- and post-tests.

Zero hypothesis (2): There are no statistically significant differences at the significance level (0.05) in the mean lateral thinking ranks of the control group between the pre- and post-tests.

Zero hypothesis (3): There are no statistically significant differences at the significance level (0.05) in the average lateral thinking ranks between the experimental group and the control group in the post-test.

The limits of research: The research is determined by the following limits: -

1- Objective limit: - Vocabulary of the book (The relationship between beauty and art - aesthetics in the Greek era before Socrates - philosophers of mind - Arab-Islamic civilization - Ibn Sina - philosophy was , Croucha Freud Schopenhauer - Temple - John Dewey) .with the use of lateral reasoning skills. The researcher adopted the Swartz model in teaching aesthetics

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2- Time limit: 2021-2022 .

3- Spatial limit: Directorate of Karkh Education/First - Institute of Fine Arts for Morning Boys.

4- Human limit: students of the fourth stage of the theater department (males and females).

Term Definition:

The Swartz model and its procedural definition: -It is a model for teaching thinking that includes several sequential and organized steps, including (presenting to think, presenting skill, active thinking, thinking about thinking , applying thinking,evaluating thinking) to reach the goals .

Third: Lateral thinking and its procedural definition: - It is the test that is presented to students, which includes the skills of lateral thinking before and after.

Fourth: -Aesthetics (Aesthetics) and its procedural definition: It is a subject presented to the student that is interested in studying the laws of art and beauty and has reflected all artistic phenomena and aesthetic experience along with scientific knowledge enables the student to develop their lateral thinking as philosophy is a thought of art in accordance with the curricula of intellectual philosophers.

Chapter two: theoretical framework

Swartz Model

"This model appeared in the United States of America at the hands of Dr. Robert Swartz, a Harvard graduate from the Department of Philosophy, led the world to take ownership of thinking skills within the curriculum, that is, in the mind of the (learner) in order for any learner in developing countries to become a thinker, possess the skills to generate possibilities to reach multiple, diverse and new ideas and adopt analytical measurements in educational and life situations. Swartz) adds that the thinking skills within the curriculum include analyzing arguments and proofs, finding reasons and results, and revealing the assumptions behind every piece of information provided by students." (Qatami,2013:47-49).

Through the above, the researcher believes that this model contributes to the development of higher thinking skills, analysis, interpretation, evaluation and the ability to conclude. By integrating the skills of lateral thinking and using them along with the steps of the model to help develop thinking more deeply about the subject of aesthetics, which is an important subject in the teaching of the arts and because it is a philosophical subject that is difficult to understand and perceive by students, the model will contribute to the development of thinking about the subject of aesthetics and facilitate its understanding and perception more clearly.

Strategies used in teaching according to the model (Swartz).

"Swartz believes that he used some of the strategies included in his teaching model, as he used these strategies as the prevailing factors to support the steps of his thinking model, which are as follows: -

- 1- The strategy of verbal thinking maps: - It emphasizes that the teacher uses the results of the discussions he has with his students about the skill of thinking and that a guide is created in the form of sequential questions, to organize the student's thinking and master the thinking skills to be trained on it.
- 2- Graphic organizations strategy: - It is a strategy that works to help make thinking visible by assigning students to convey the ideas on

which they were trained and summarize them in the thinking map (the graphic organizer).

3-A writing strategy based on thinking: - It means summarizing the learner of the ideas dealt with according to the graphic organizer in the form of a written message clarifying the most important steps of the skill and aimed at clarifying and interpreting the ideas reached by the student and called illustrative writing." (Swartz, 2008:26-31)

Through these strategies, the researcher used (the strategy of the graphic organizations), which she mentioned within the steps of the lesson because it contributes to making thinking visible to the learners and achieves positive results in the occurrence of thinking.

Lateral Thinking

The theoretical basis for lateral thinking: -

"The scientist (De Bono) sees that lateral thinking is very attached to creativity, and creativity is often a description of a result only, while lateral thinking is a description of a lengthy intellectual process, and the relationship of lateral thinking with creative thinking is clear, as they are interested in new ideas, but lateral thinking includes creativity in addition to something not creative, as not all the results of lateral thinking are real creations and sometimes no more than new ways of seeing things, De Bono was asked whether lateral thinking is the same as creative thinking, and he answered negatively, although lateral thinking is a creative process, but it is not concerned with the chaos of creative thinking, but rather it is directed towards exploring new ideas. The word creativity carries a very broad meaning and includes the creation and innovation of something new." (DeBono,1998:)

"The interest in developing thinking skills has increased in the current century due to the rapid development that led to the emergence of the so-called cognitive explosion; human thinking is a key factor in guiding life, and an essential element in the progress of human civilization and a means to understand local global developments and deal with innovations efficiently and effectively. The topic of thinking among young people is one of the most recent topics in the field of education, if many educational decision makers see the importance of focusing on effective thinking processes in

today's schools, and the consensus of psychologists, philosophers, and educationalists that thinking is an important factor for success in school and life and raising the outputs of general and higher education, especially in the field of developing thinking skills. (Mustafa, 2013: 13).

Lateral thinking skills: Thinking is a holistic mental process through which we mental treatments of the sensory inputs of retrieved information to form ideas and infer or judge them, a process that includes perception, previous experience, conscious processing and intuition, and through which experience gains meaning. The skill of thinking is the processes that we practice and use in processing information such as the skill of identifying the problem, finding assumptions that are not mentioned in the text or evaluating the evidence and the claim. " (Gibbons, 2004:19-18).

From the above, the researcher sees that the learner's practice of lateral thinking skills works to make him think outside the limits of traditional thinking, confront problems with better ideas, and obtain immediate results that generate an idea through other ideas. Designs problem-solving methods for new ideas and develops practices

and creative habits through which he works to solve problems to opportunities for creativity, and from this De Bono believes that thinking has skills that can be trained on:-

(Generate new perceptions. Generate new concepts.- Generate new ideas. Generating new alternatives - generating new innovations).

Third : Aesthetics

(The relationship between aesthetics and philosophy):

"The first difference between aesthetics and the rest of human knowledge is the thinker "Baumgarten "who called aesthetics" Asthetique ", but this term dates back historically to the era of Greece, when he meant the science related to sensations according to the Greek word "Aisthesi "and the field of research of things described by beauty and the formation of standards and foundations that help to aesthetic appreciation, and the definitions were many until" Paul Valerie"said (The science of beauty is the science of allergies), but

nowadays"Dennis Husima "defined it as" every philosophical explanation in art. " (Zakarna, 1994:8).

The feeling of beauty is the basic rule of artistic activity, which is strange in its relative dimensions except for its specific historical significance. It began in Greece when they saw that God combines the entirety of human aesthetics and is the perfect ideal of humanity. The concept of beauty has changed over the ages until it has become in the modern era away from linguistics, paranormals and ideals and linked to the transformations of society and scientific discoveries and modern technologies. " (Abu Sheikha, 2011:21).

The researcher believes that aesthetics is a philosophical doctrine that is interested in monitoring and studying aesthetics, their standards and their role in the advancement of the human spirit and their relations with other arts and cultures. Aesthetics is a philosophical discipline and human science that seeks to discover the places of sensory and moral beauty in various arts and cultures. This science has been closely linked to philosophy.

First: - Studies related to the Swartz model

The title of the study is (Building a training program according to the Swartz model and its effect on the pivotal thinking of mathematics teachers and their students' achievement and visual thinking).

Name of researcher /Intisar Jawad Mahdi (2018) Iraq/ University of Baghdad

The sample consisted of (525) male and female students. I followed the experimental design and the research tool used the visual reasoning test. It used the Spss program for statistical tools and was the most prominent result.

- There are no statistically significant differences at the significance level (0.05) between the mean scores of mathematics teachers' students whose teachers were trained according to the training program and students whose teachers were not trained on the program for the control group in the visual reasoning test.

Second: Studies related to lateral thinking:

Title of the study (The effect of an educational design based on the education strategy for understanding in the achievement of

mathematics and lateral thinking among fifth-grade scientific students.)

Name of researcher/Al-Khafaji , Areej Khader Hassan (2015) Iraq/University of Baghdad

The sample consisted of (58) female students divided into two groups with (28) experimental and(30) female officers and used the experimental design with two groups with a post-test.As for the research tool, the achievement test is (40) paragraphs.Lateral thinkingtest of (17) paragraphs. The most important results were the superiority of the experimental group students who studied according to the educational design based on the education strategy over the students who studied according to the usual method.

Third: Studies related to aesthetics:

Thesis title (Theeffect of an educational program according to the Kemp model in the achievement of students of the Department of Art Education in the subject of aesthetics).

Name of researcher/Surri Rashid (2014) Iraq/Diyala University.

The researcher chose the target sample of (30) male and female students, as for the experimental approach followed with two equal groups. The tool consists of a cognitive achievement test to measure the effect of the educational program

As for statistical methods, Spss was used.The most prominent results came from the application of the educational program in the subject of aesthetics to students of other relevant educational institutions (faculties of fine arts and institutes of fine arts) after it proved its effectiveness in education better than the lecture method.

- Previous studies differed from the current study in the research objective.

Chapter Three

Research Methodology and Procedures: This chapter includes a presentation of the research methodology and the selection of the appropriate experimental design, the identification of the research community and its sample, the equivalence of the two research groups, the adjustment of the external variables in the experiment , and the statistical methods used in this research.

First: Research Methodology: The current research aims to identify (the effect of the Swartz model in the development of lateral thinking among students of the Institute of Fine Arts in the subject of aesthetics). The researcher has followed the experimental approach to achieve the goal of research , "The experimental approach is one of the most successful and efficient methods to test the validity of hypotheses and determine the relationships between variables. It shows the features of the scientific method of thinking in a clear way and also includes an organization that combines evidence in a way that allows the selection of hypotheses and control of various factors that can affect the subject to be studied." (Ibrahim,2000:137).

Second: Experimental design: To verify the goal of the research, the researcher followed an experimental design (which is a design with two experimental groups and randomized control randomized pre-test and post test, as one experimental group and another controlled group were chosen, so the design came as shown in the following table: -

Table (1) *Pilot Design*

group	The independent variable	Dependent variable	Tool
Experimental group	Swartz Form	Lateral Thinking	Lateral reasoning test
Control group	_____		

Fifth: The equivalence of the two research groups: For the purpose of verifying the internal integrity of the experimental design, equivalence was made between the two groups (experimental and control) in the variables that may be thought to interfere with the effect of the independent variable with the two dependent variables, which affect the results of the experiment, namely:

1- Students' chronological age in months.

The researcher obtained information about the students' chronological age directly through the test provided to them by filling a special field in the lateral thinking test that includes the

disclosure of information. After that, the research sample was calculated in months from the day of the student's birth. To verify the equivalence of the experimental and control groups in the chronological age, the researcher adopted the Mann and Tannin test for the average samples to find out the significance of the difference between the average grades of the ages of the students of the two groups. The researcher found that there is no statistically significant difference between the two groups (experimental and control) because the calculated Mann and Tannin value of (48.5) is greater than the Mann and Tannin's tabular value of (23) at the level of (0.05), and this indicates the equivalence of the two groups.

Table (1) Results of the Mann and Tenne test for two independent samples of the two research groups in chronological age

Variable	group	Number	Mean	standard deviation	Total ranks	FS-3 Average level	Man-Whitney value U		Significance level 0.05
							Calculated	tabular	
Chronological Age in Months	Experimental group	10	223,40	3.204	106,5	10,65	48,5	23	Not significant
	Control group	10	223,30	3,129	103,5	10-25			

Parents' academic achievement.

It was clear from Table (2) that the two research groups are statistically equivalent in the frequency of the educational achievement of the parents, as the results of the data when using (Kolmogrov Smirnov) showed that the

calculated value of k Smirnov (0.224) is smaller than the value of k Smirnov (1.36) at the level of significance (0.05), and this indicates that the two groups are statistically equivalent in the educational achievement of the parents of the students of the research sample.

Table (2) Frequencies of academic achievement of the parents of the students of the research groups and the value of (Kolmogrov-Smirnov) calculated and tabular.

group	Number	Educational Achievements				K-Smirnoff value		Significance Level 0.05
		Elementary school	Average	Junior high	Bachelor's Degree	Calculated	tabular	
Experimental group	10	2	4	2	2	224	1.36	Not significant

Control group	10	3	3	3	1			
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3- The educational achievement of mothers: Table (3) shows that the two research groups are statistically equivalent in the repetitions of the educational achievement of mothers, as the results of the data when using (Kolmogrov-Smirnov) showed that the calculated value of k

Smirnov (0,447) is smaller than the value of k Smirnov (1.36) at the level of significance (0.05), and this indicates that the two groups are statistically equivalent in the academic achievement of the mothers of the research sample students.

Table (3) *Frequencies of academic achievement of the mothers of the students of the two research groups and the value of (Kolmogrov-Smirnov) calculated and tabular.*

group	Number	Educational attainment of mothers				K-Smirnoff value		Significance Level 0.05
		Elementary school	Average	Junior high	Bachelor's Degree	Calculated	tabular	Not significant
Experimental group	10	3	3	3	1	447	1.36	
Control group	10	1	4	4	1			

Intelligence: Previous studies indicated that there is a clear relationship between intelligence and academic achievement, which may affect the results of research and calls for its control. Therefore, I have sought to achieve parity between the experimental and control groups in this factor, and I have relied on (Raven) test for successive matrices to compare between the intelligence of the two research groups (experimental and control) as it is characterized by honesty and consistency, which is one of the most common measures in measuring general mental ability as one of the tests of intelligence freed from the language factor.

In order to verify the equivalence of the two groups (experimental and control) by applying Man and Teny to the medium-sized samples to find out the significance of the difference between the average ranks of the two groups, it was found that the calculated value (30.5) is not significant because it is greater than the tabular value (23) at the level of significance (0.05). Thus, there was no statistically significant difference between the two groups on this variable (intelligence), which indicates that the two groups are equivalent and as shown in the table: -

Table (4) Results of the Mann and Tenne test for two independent samples of the two research groups in the intelligence variable

Variable	group	Number	Mean	standard deviation	Total ranks	FS-3 Average level	Man-Whitney value U		Significance level 0.05
							Calculated	tabular	
Intelligence, Raven.	Experimental group	10	44,90	3,725	124,5	12:45	30/5	23	Not significant
	Control group	10	42,80	2,658	85,5	8h 55m			

Gender: -The number of males in the experimental and control group is (8) for each group and the number of females for each group (2) This indicates that the two groups are equal in gender through equal numbers .

Equivalence of lateral (tribal) reasoning test.

A lateral thinking test was applied to the students of the experimental and control group consisting of (20) items of multiple choice. The researcher corrected the answers of the students, where one score was given for the correct answer and zero for the wrong answer. To

achieve parity between the two research groups (experimental and control) within the lateral (tribal) thinking variable, the Mann and Tanni tests were applied to the medium-sized samples to find out the significance of the difference between the average grades of the two groups. It was found that the calculated value (48.5) is not significant because it is greater than the tabular value (23) at the level of significance (0.05). Thus, there was no statistically significant difference between the two groups on this variable, which indicates that the two groups are equivalent and as shown in the table below: -

Table (5) Mann andTenne test results for two independent samples of the two research groups in the lateral thinking variable.

Variable	group	Number	Mean	standard deviation	Total ranks	FS-3 Average level	Man-Whitney value U		Significance level 0.05
							Calculated	tabular	
Upper Side Thinking	Experimental group	10	10:50	1,434	103,5	10-25	48,5	23	Not significant
	Control group	10	10.40	1,897	106,5	10,65			

Sixth: Research variables

1. The independent variable: - " represents the independent variable of research (Swartz model).

2- The dependent variable: - "and represents the dependent variable of the research (lateral thinking) .

3- Extraneous variables: - Adjusting extraneous variables is one of the important procedures in experimental research in order to provide an

acceptable degree of internal validity of the experimental design, and so that the researcher can attribute most of the variance in the dependent variable to the independent variable in the research. Therefore, the accuracy of the research results is due to the importance of adjusting the variables." (Melhem, 2010:73).

Therefore, the researcher resorted to achieving the internal and external safety of the experimental design, including: -

First: Internal safety factors for research

1. Selection of sample members:
2. Experimental extinction (discontinuity)
3. Maturity processes
4. Measurement tool
- 5 - Teacher
6. Accompanying incidents:

Second: External safety factors for research:

A-Confidentiality of the research: The researcher defined herself as the teacher of the material in order to be keen to control this factor , and the respondents did not feel that they were under a specific experiment, and that the researcher was keen to conduct the confidentiality of the experiment in agreement with the management of the institute and the department in order to obtain accurate results as the students' behavior and activity does not change during the duration of the experiment.

B - The duration of the trial: - The duration of the trial was equal for both groups ,as it reached (eight weeks) and started on Wednesday 17/11/202 and ended on Wednesday 5/1/2022 .

C- Class distribution: - The researcher distributed the lectures equally to the two study groups (experimental and control) and the lecture time was two hours per week for each group according to the distribution of the theater department by two lectures , and the researcher made sure that the date of the lectures is similar to the two groups to reduce the effects of the extraneous factors.

D- Educational Environment: Two halls have been identified in the theater department as a hall for the experimental group and a hall for the control group, where the validity of these two

halls has been confirmed in terms of lighting, capacity and educational means necessary in conducting the experiment.

Seventh: Research Requirements

1-Determining the subject: - The researcher adopted the vocabulary of the subject of aesthetics prescribed for the theater department at the Institute of Fine Arts for Boys for the academic year (2021/2022).

2- Formulation of behavioral goals: - To ensure the accuracy of the goals and derive them according to their fields, the researcher presented them to a group of experts and arbitrators in the methods of teaching art education, measurement and evaluation and asked to estimate their validity and representation at the six levels and in the light of their views, the goals were sound as well as valid and reached a total of (54) .

3.Preparing teaching plans. (8) teaching plans were prepared according to the Swartz model to teach the experimental group according to the steps of the model and(8) regular plans to teach the control group.

Eighth: The research tool:

The nature of the current research and its objectives require the availability of a tool, which is the test of lateral thinking with the subject of aesthetics. The following is an explanation of the research procedures:

First: Lateral Thinking Test

The researcher prepared a test for lateral thinking with the subject of aesthetics, the aim of which is to measure lateral thinking at the two research groups (experimental and control), a test consisting of (20) items of multiple choice, and the researcher designed the test .

Chapter FOUR

(Presentation and Interpretation of Results)

This chapter includes a presentation of the results of the current research according to the research hypotheses, the scientific interpretation of these results and the conclusions reached by the researcher , and a number of recommendations and proposals as follows:

1-The superiority of the students of the experimental group who study aesthetics according to the model (Swartz) over the students of the control group who study the same subject in the traditional way is due to the steps of the Swartz model)) that contribute to the development of thinking and concepts for a longer time.

2- The (Swartz) model that the researcher used with the students of the experimental group helped to develop the skills of lateral thinking through the practice of alternative methods of traditional learning.

Conclusions

1. The (Swartz) model has proven to be effective within the limits of the current study in the development of lateral thinking skills among fourth-grade students in aesthetics compared to the traditional method.

2. The use of the Swartz model in teaching has a positive effect on the development of students' lateral thinking skills.

Recommendations:

In light of the findings , the following may be recommended:-

The use of modern models in supplementing the educational process and supporting the teaching process with the potential of these models in order to communicate the study materials to the minds of students, including these models (Swartz model). The need to pay attention to lateral thinking because of its life importance as a life skill that every member of society needs in order to expand thinking and knowledge .

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