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Building a Collaborative Learning Strategies based Training Program and Its Effect on the Strategic and Psychological Thinking of Middle School Teachers and Deep Understanding of Their Students

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Abstract

The aim of the current research is to build a training program according to the strategies of Collaborative learning for middle school teachers and to know the effect of the training program based on the Collaborative learning strategies in the strategic thinking of middle school teachers. To achieve this goal, the strategic thinking scale was built and then ensure its validity and reliability . The two researchers selected a sample of middle school teachers from the Directorate of Education of Dhi Qar , then applied the experiment and the strategic thinking scale. The statistical analysis was conducted and the results were interpreted as the results showed the teachers of the experimental group surpassed the teachers of the control group in the strategic thinking scale. The researchers then presented some recommendations and proposals

Keywords: Psychological thinking, students sharing resources, Cooperative learning.

Introduction into the research

First, the research problem:

Through the researcher's practice of teaching for several years and mixing with the rest of her fellow teachers, she noticed that there is a clear weakness in the interest in strategic thinking among a large number of teachers , and educators believe that there is a great weakness in the practice of strategic thinking in educational institutions despite its importance , and this was confirmed by the study (Hashush et al., 2021) and the study (Hussein , 2017), which proved the weakness of strategic thinking among the cadres of educational institutions.

For the purpose of verifying this, the researcher directed an open questionnaire to them , in order to know their answers to the questions addressed to them, it was found that 90% do not have strategic thinking skills andthat 85% of teachers do not apply modern teaching methods while teaching subjects , and 95% do not have knowledge about Collaborative learning strategies.

Based on the above, the problem of research is clarified in answering the following question:

- What is the effect of the training program according to the strategies of Collaborative learning in the strategic thinking of middle school teachers.

Second: significance of research: The significance of research is summarized in the following points:

1- The importance of education, as it represents the cornerstone in building society .
2- The importance of teaching, as it is considered the profession that achieves the goals of education in building the individual in a comprehensive and integrated manner.

3- The importance of teacher preparation and training as it is the influential element in the educational process.

4- The importance of Collaborative learning strategies, because they lead to enhancing the teaching skills of teachers .

5- The importance of strategic thinking as a social, leadership and necessary thinking for teachers .

Third: The objectives of the research : The research aims to achieve the following:

1- Building a training program based on the strategies of Collaborative learning for middle school teachers.

2- Know the effect Collaborative learning strategic thinking of middle school teachers.

Fourth: The two research hypotheses

There is no statistically significant difference at the significance level (0.05) between the average scores of the teachers of the experimental group who underwent the training program according to the Collaborative learning strategies and the average scores of the middle school teachers of the control group who did not undergo the training program in the strategic thinking scale.

Fifth: The limits of the research :The limits of the research are determined as follows :

1- Human Boundaries: A sample of an intermediate first grade science teacher in the Rifai Education Department .
2- Spatial boundaries: The Rifai Education Department .
3- Time limits : The first semester of theyear 2022-2023 .

4- Scientific limit: The cognitive content of the training program.

Sixth : Definition of terms :

1- Training Program: Introduced by :

- (Bugs) It is "a scheme designed for the purpose of education or training in a coherent manner, so as to develop the teacher's performance in accordance with his field and a course in teaching, and the elements of the program consist of: objectives, content, educational activities, tools, materials and means used , and evaluation on a regular basis." (Bogus , 2002 : 84)

2- Collaborative Learning Strategies: Defined by :

- (Paavola et al.) : "It is one of the most important strategies that has proven its excellence and importance, as it provides participants with an opportunity to learn and share diverse sources of information, as well as the possibility of exchanging experiences among them, as the main goal of Collaborative learning is not only to acquire and share knowledge, but also to acquire the ability to build knowledge in innovative and new ways" (Paavola et al. 2004: 577).

3- **Strategic Thinking: Defined by** :

- (Mintzberg) :"It is an individual or collective cognitive process aimed at analyzing the present in order to prepare for the future." (Mintzberg H. Op-Cit, 1994: 175

Research Methodology and Procedures:

First : Research Methodology :

two researchers should adopt descriptive and experimental approaches.

Second: Building the training program:

In order the Collaborative learning of the teachers of science for the second grade, the researcher reviewed the set of resources and studies that included building the training program and according to the above, the two researchers built their own training program according to the following steps:

1- Planning Phase
2- Design Stage

3- Execution.

4- Evaluation phase.

Third: Experimental Design:

The researchers selected the experimental design with partial control with two random groups of experimental and control and as shown in Figure (1)

Groups	**Equivalence of two groups**	**Pre-test**	**Variable Independent**	**Variable Dependent**	**Post-test**
Experimental group	Educational Qualification Years of service The training courses they participated in Gender	Strategize	The training program based on Collaborative learning strategies	Strategize	Strategic Thinking Scale for Teachers Deep understanding of students
Control group			They did not undergo any training program		

Fourth: The research community and its sample :

Research Community:

The current research community was represented by all teachers of science for the middle stage (biology, chemistry, physics and science) for the second grade, the average Directorate, and their number was (935) teachers and schools, according to the statistics of the Planning Department of the Directorate .

2- The research sample

(40) teachers and schools were selected from the teachers of science for the second intermediate grade of the Directorate of Education of Dhi Qar and in a random manner, the number was divided into two groups

Control : The two researchers carried out some necessary procedures in order to achieve accuracy in the results of the experiment, which are as follows :

The research groups were rewarded in a set of variables (educational qualification , training courses they underwent , number of years of service , gender) .

Fifth: Research Tool:

For the purpose of achieving the research objectives, the researcher has built a research tool, which is the measure of strategic thinking.

- **Strategic Thinking Scale:**

The researchers had to build the scale of strategic thinking, and in order to build this scale , they followed a set of specific steps to build psychological measures, which begin by identifying the theoretical starting points on which the researchers based on building the scale of strategic thinking.

- **The validity of the scale:** Validity has been extracted for the scale of strategic thinking , which is as follows :

. **Face validity:** To verify the face validity, the researcher presented the scale to a group of experts and arbitrators specialized in the field of education and teaching methods to find out their views on the validity of using this scale. The agreement rate (80%) was adopted as a criterion for the validity of the scale and its suitability for measuring the measured quality, and used the Kay square, the percentage and the degree of significance (0.05). The most items of the scale obtained the approval of experts and specialists on the validity of these items with an amendment to some items without deleting any item , and the approval was obtained by (90%), so the items of the scale remained 40 items .

- **Applying the strategic thinking scale to the exploratory sample**

The first explatory sample: To ensure the clarity of the scale items and determine the appropriate time in answering all the scale items, the researcher applied the scale to a explatory sample of middle school teachers , and their number was (15) teachers. Through the supervision of the two researchers on the application, she noticed the scale items / researcher calculated the response time, which represented (40) minutes by collecting the times taken by the sample members after recording the answer time for each individual on their answer sheet.

strategic thinking of teachers and after correcting the teachers' answers, the sincerity of the construction was extracted from the strength of discrimination and the reliability coefficient. The following is an explanation of the statistical analysis procedures for the scale items :

- Building validity of the strategic thinking scale, although she verified the validity of the scale outwardly, and for this the researcher used the scores of the exploratory sample used in the statistical analysis of the scale to find what follows

- **score item to overall score** : To determine correlation of item with the overall score grades teachers statistical analysitems, which is the same sample on which the strength of the distinction of the items of the scale was calculated item overall score the , and all the items statisticallysignificant Ebel believes that the item is acceptable if its correlation coefficient is (0.19) and above (Majid, Yassin, 2012: 33), and thus all the items of the scale (40) were retained.

- area holistic thinking pattern " (0.35- 0.79)" , area the abstract thinking pattern (0.43-0.85), the area of the diagnostic thinking pattern (0.51-0.75), and the area of the schematic thinking pattern (0.41-0.74), are statisticallysignificant. the strategic thinking of the research sample.

- as the correlation coefficients were for the first field (0.93), and for the second field (0.95), and the third field was (0.91), while the fourth field (0.91) .

- **Scale Reliability:**

In order to ensure the reliability of the scale, the researchers used the method of application and re-application of the scale to the second explatory sample. The reliability was extracted according to the Cronbach Alpha method. This method is characterized by the possibility of trusting its results. This method depends on

calculating the correlations between the scores of all items of the scale, as each of its items is a measure by itself and gives the upper limit reached by the reliability coefficient (Imam et al., 2016 :63). The reliability coefficient in this way (0.95) is a good reliability coefficient, as the best acceptable value for it ranges from (0.70) and (0.80). The higher the level of confidence in the validity of the existing answers increases (Al-Bayati , 2011 : 50)

- **The final version of the strategic thinking scale:** After completing the procedures related to validity and reliability and using the appropriate statistical means, the strategic thinking scale is ready to be applied in its final form, and it consists of (40) items and (5) alternatives to answer .

- Applying the strategic thinking scale: The strategic thinking scale was applied to the experimental and control research groups in the preparation and training hall of the Directorate of Education of Dhi Qar on Thursday, 13/10/2022

Sixth : Application of the experiment

The researcher applied her training program prepared according to the strategies of Collaborative learning for science teachers in the preparation and training hall of the Directorate of Education of Dhi Qar from Sunday (27/9/2022) until Thursday (13/10/2022), two training sessions per day .

Presentation and interpretation of results

This chapter includes a presentation of the results of the research and their interpretation in addition to the most important conclusions and recommendations reached by the researcher and a presentation of the proposals that she proposed .

First: Presentation of the results :

The researchers' findings were presented in the light of the two research objectives set, which are as follows :

- The first objective was achieved (building a training program according to the strategies of Collaborative learning for middle school teachers) by building the program according to the strategies of Collaborative learning. The researcher relied in building the program on certain steps (planning – design – implementation - evaluation)

- Ensure the achievement of the second goal, which is (to know the effect of the training program based on Collaborative learning strategies in the strategic thinking of middle school teachers) and this is done by verifying the zero hypothesis. Table (1) shows this .

Table (1) Mann and Tiny test results for the two research groups in the Strategic Thinking Scale

No.	Group	Number	FS-3 Average level	Total ranks	Value Man-2Whitney U	Standard Score	Tabular Value	Sig
1	Experimental group	20	29.38	587.5	22.500	4.802	1.96	Significant
2	Control group	20	11.63	232,5				

It is noted from the table above that the value of the average ranks of the experimental group in the strategic thinking scale (29.38), ranks of (11.63) , the score (z) (4.802) at the level of significance (0.05), which is greater than the table value, which amounted to (1.96), This indicates that there is a statistically significant difference in favor of the experimental group and thus rejects the first zero hypothesis .

In order to find the size of the effect of the independent variable in the strategic thinking of the teachers of the two research groups, the researchers adopted the size of the effect to test the skills in the Mc Guillian method

Table (2) The value of the effect size

Method	Tribal average	Dimensional mean (Maths.)	Maximum score	effect Ratio	Result
Experimental	88.2	158.8	200	0.63	Function

1- strategic thinking:

It is clear from the results related to the zero hypothesis that the science according to the Collaborative learning strategies are superior to the science teachers strategic scale, two researchers attribute this result for several reasons, namely :

1- built scientific foundations such as reviewing a set of studies in the construction for the purpose of benefiting from them in determining the steps of the course of the training program and thus ,is consists of four steps (planning , design, implementation , evaluation) .
2- built Collaborative learning, which are modern strategies and according to a modern educational vision, which led to the teachers of the experimental group acquiring different skills and information, developing themselves and keeping pace with the continuous development of life.

This is the first result that dealt with building a training program according to the Collaborative learning strategies of the category of teachers, to the best of the researcher's knowledge, and it is consistent with the results reached by both studies (Al-Atabi , 2018) and (Jaber , 2018) that dealt with building a training program on the category of teachers in other variables.

Conclusions

1- The training of middle school teachers in accordance with modern educational trends has become an urgent necessity at the present time, given the educational process requires the application of modern educational programs in addition to increasing their effectiveness in teaching and providing them with the desired professional patterns that lead them to create a classroom environment conducive to learning .
2- Training middle school teachers in a training program according to modern strategies such as Collaborative learning strategies contributes significantly to the development of various types of thinking, especially strategic thinking, given the training program's effective educational environment that encourages them to think .

Recommendations

1- The Department of Preparation and Training in Dhi Qar Governorate adopts the training program prepared by the researcher in accordance with the Collaborative learning strategies.
2- Directing the Ministry of Education to pay attention to the vocational training of teachers in accordance with recent trends.
3- Attention to the training needs of teachers, which can be determined by directing a questionnaire by officials in the preparation and training department.

Fifth: Proposals :

1- Conducting a study aimed at training science teachers at the primary level in accordance with Collaborative learning strategies and explaining its effect on their teaching performance.
2- Conducting a study aimed at demonstrating the effect of an educational design according to Collaborative learning strategies in developing deep understanding among middle school students.

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