The Effectiveness of a Computer based program of Concept Map Strategy for Developing Second Stage Basic Education Students Grammatical Concepts and Critical Thinking Skills

Prof. Dr. Abdelrahman Kamel Abdelrahman Mahmoud

Fayoum University, Faculty of Education, Dep. Of Curricula & Methodology
(Arabic Major)

PROBLEM OF THE STUDY:

The problem of the study is the presence of some of the weaknesses in the second Stage of pupil's basic education in the collection of grammatical concepts, which affects the critical thinking skills they have. This was confirmed by the results of some previous studies such as: (Magda Saad: 2004) (Lady Rajab: 2004) (Hussein Ibrahim: 2005) (Moataz Zuhaer: 2006) (Samia Mohamed: 2007). The researcher - through his milestone Arabic for pupils in second Stage of basic education - noticed a weakness among students in the use of grammatical rules. He noticed the presence of multiple errors in a large number of syntactic and morphological concepts such as: types of predicate, sound verbs, weak verbs, intransitive verbs, transitive verbs and other grammatical concepts. This makes the researcher use concept maps strategy to reduce errors and develop some of their critical thinking skills.

To solve this problem, the study tried to answer the following main question:

"**What is the effectiveness of a computer based program of concept map strategy for developing second stage basic Education Students grammatical concepts and critical thinking skills?**"

A number of sub- questions could be derived from the previous main question as follows:

1. What are the critical thinking skills suitable for developing in the second stage of basic education**?**

2. What is the out line of the suggested program in teaching Arabic grammar on developing some critical thinking skills in the second stage of basic education**?**

3. What is the effectiveness of the suggested program on developing some critical thinking skills related to the grammatical concepts assessed in the second stage of basic education**?**

AIM OF THE STUDY:

The present study aims at identifying the effect of using a computer program based on concept map in teaching Arabic grammar on developing some critical thinking skills among student in the second stage of basic education.

THE IMPORTANCE OF THE STUDY:

The study helps to develop some critical skills among students in the second stage of basic education.

THE LIMITATIONS OF THE STUDY:

The present study is limited to be following:

1- A sample of first year prep school students at Minia al hait prep school.

2- Some grammatical concepts in Arabic language in the first term of the school year 2012-2013

3- Some critical thinking skills.

THE HYPOTHESES OF THE STUDY:

The current study tested the following hypotheses:

- There is no statistically significant difference between means of scores of the experimental and control groups in the pre administration of the critical thinking test in Arabic grammar.
- There is no statistically significant difference between means of scores of the experimental group in the pre administration of the critical thinking test in Arabic grammar in any skill of its skills
- There is no statistically significant difference between means of scores of the two groups in the post administration of critical thinking test in Arabic grammar in favor of the experimental group.
- There is no statistically significant difference between means of scores of the experimental group in the post administration of critical thinking test in each skill in favor of the experimental group.

PROCEDURES OF THE STUDY:

The study followed the following procedure:

To answer the first question of the study questions the researcher did the following

1 - Reviewing the literature and the related previous studies dealing with critical thinking skills: (Fathy Jarwan: 2002) (Mohammed Jihad: 2005) (Salah Allam: 2006) (Khalid Al-Otuby: 2007) (heand-Al astal: 2008) (Hassan Al batta Abdul ati: 2008).

2 - Preparing a list of critical thinking skills that have been reached through the results of other studies on thinking skills.

3 - Reviewing the list by a group of jury members to ascertain the extent of objectivity.

4 - Modifying the list in the light of the views of the jury members

5 - Explaining and analyzing.

6 - Preparing the final list.

To answer the second question the researcher did the following:

The researcher prepared the proposed program in light of the program design steps mentioned in some specialized books and references in this field, namely:

- Philosophy of the program.

- Objectives of the program.

- Program requirements.

- Preparing the teacher's guide.

- Identifying the foundations of the components of the program.

- Preparing the student booklet.

To answer the third question of the study questions the researcher did the following:

1. Preparing a critical thinking skills test in grammar and reviewing it by a group of jury members to verify its appropriateness.

2. Adjusting the critical thinking skills test scientifically.

3. Applying thinking skills test as a pre-test to control groups, monitoring results, and statistically treating the results.

4. Teaching the suggested program for the study sample.

5. Applying the critical thinking skills test as a post-test to the study sample to collect post- data.

6. Deriving the results to analyze them statistically and draw conclusions.

7. Depending on the study results, the conclusions, suggestions and recommendations were provided

RESULTS OF THE STUDY:

In the light of the study procedures, the following results could be presented:

1- Identifying of critical thinking skills appropriate for first graders secondary: comparison, categorization, explanation, deduction, evaluation discussion, and conclusion. (Table number 1)

Table 1.

s.n	skills	The degree of acceptance					Ch2	Significance	Relative weight
		Strongly agree	agree	Dis Agree strongly	Dis agree	Do Not know			
1	comparison	21	10	3	1	1	40.66	**	0.935
2	categorization	18	11	3	2	2	28.16	**	0.917
3	explanation	15	12	4	3	2	19.27	**	0.898
4	deduction	15	14	3	2	2	24.83	**	0.917
5	evaluation	14	13	4	5	0	20.38	**	0.916
6	conclusion	20	9	3	2	2	33.16	**	0.917
7	Analysis	10	5	13	5	3	8.28	-	0.658
8	Identify the assumptions	4	11	12	4	5	8.72	-	0.659

The previous table shows that the critical thinking skills appropriate for first graders secondary: comparison, categorization, explanation, deduction, evaluation discussion, and conclusion.

2- There is no statistically significant difference between means of scores of the experimental and control groups in the pre administration of the critical thinking test in Arabic grammar. (Table number 2).

Table 2.

group	number	SMA	Standard deviation	Calculated "T'	T. tabular		Statistical significance
					0.05	0.01	
experimental	35	7.8	2.79	0.145	2.00	2.66	Non significant
Control	30	7.7	2.65				

The previous table shows that the calculated value of T is less than the value of T tabular and therefore not statistically significant, indicating the equality of the two groups in the pre-testing of critical thinking skills in grammar.

3- There is a statistically significant difference between means of scores of the experimental group in the post administration of the critical thinking test in Arabic grammar In favor of the experimental group at the level of (0.05 and 0.01) table number (3).

Table 3.

group	number	SMA	Standard deviation	Calculated "T'	T. tabular		Statistical significance
					0.05	0.01	
experimental	35	25.37	8.65	3.390	2.00	2.66	significant
Control	30	18.40	7.49				

The previous table shows that calculated value of "T" is higher than the value of T. spreadsheet which shows the superiority of the experimental group to the control group in the post to test the skills of critical thinking as a whole.

4- There is a statistically significant difference between means of scores of the two groups in the post administration of critical thinking test on each skill at the level of (0.05 and 0.01) in favor of the experimental group.

THE RECOMMENDATIONS OF THE STUDY:

Depending on the study results, the following recommendations could be introduced:

• Training teachers to use modern teaching methods in general and concept map in particular in teaching Arabic grammar. This makes students acquire information by themselves. They can acquire some critical thinking skills instead of focusing on traditional method that concentrates on memorization.
• Reviewing Arabic grammar curricula with their content and organization and presenting them in attractive and interesting ways that foster the critical abilities of the students, encourage research and experimentation and avoid concentrating on memorization.
• Reviewing current assessment methods by including questions that measure the creative aspects to help students think critically.
• Using Modern technological devices in teaching the Arabic grammar.

SUGGESTIONS FOR FURTHER STUDY:

In the light of the study results, the researcher suggests studying:

• the effect of using concept map in teaching Arabic grammar on the development of other learning aspects (e.g. different thinking ways, learning retention).
• the effectiveness of an electronic blog in dealing with the faulty visions of the grammatical structures of second stage of basic education stage.
• the use of integrative teaching methods and their effect on developing achievement and creative thinking of first year preparatory students (e.g. concept maps , learning cycle , mind maps , reciprocal teaching strategy).
• the construction of some critical thinking skills appropriate for mental growth of student of various stage
• the effectiveness of concept map strategy in the development of some abstract thinking in Arabic grammar
• the effectiveness of concept map strategy in the development of some critical thinking in literature.

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