

**The Effectiveness Of Using Some Thinking Maps In Teaching Science
In Achievement and Acquisition Problem solving Skills For Pupils Of
Basic Education**

**Submitted by
Sanaa Abd El Azeem Elsayed Abd El Rahman**

Supervised by

Prof.Dr.Elsayed Ali Shoad

**Professor Of Curricula and
Methods Of science Teaching
Faculty Of Education
Zagazig University**

**Prof.Dr.Fawzy Ahmed
Elhabashy**

**Professor Of Curricula and Methods
Of science Teaching
Faculty Of Education
Zagazig University**

2009 – 2010

Introduction:

The third millennium is distinguished by wonderful scientific and technological developments in different life aspects . These developments impose many challenges . So to over come them successfully we need to develop each brain to solve many problems which surrounded us. So we may do this through using new tools of teaching working by the way that human brain working one of these tools is called Thinking Maps . So in this research we use Thinking Maps to achievement and acquisition problem solving skills .

The statement of research problem :

The research problem may be identified by the following question :

What is the effectiveness of using some thinking maps in teaching science in achievement and acquisition of problem solving skills for pupils of second preparatory school ?

The main question consists of these three question :

- 1- What is the effectiveness of using some thinking maps in teaching science in achievement for pupils of second preparatory school ?**
- 2- What is the effectiveness of using some thinking maps in teaching science in acquisition of problem solving skills for pupils of second preparatory school ?**
- 3- Is a significant relationship between achievement and acquisition problem solving skills for pupils of second preparatory school ?**

The research limitation :

The research presented to the following points:

- 1. One unite of science from the first book term of second preparatory school pupils in the year (2007/2008)**
- 2. Five problem solving skills : define problem , collecting data about problem , giving hypotheses , testing hypotheses , conducting results .**
- 3. Some thinking maps : circle map , bubble map , double bubble map , tree map , flow map , brace map .**
- 4. Sample of pupils of second preparatory schools .**

-1-

Sample of research :

The population for the research consisted of the pupils in the second year of preparatory school . the sample consisted of 150 subjects (age range 13 – 14 years) randomly drawn from three preparatory schools in El Kanayat city (72 male , 78 female) . It comprised 75 subjects in experimental and control groups .

Tools of research :

- 1. achievement test**

2. **problem solving skills test**

hypotheses of research :

1. **There is a significant difference at level 0.05 between mean of the experimental and the control groups in the post achievement test favor to experimental group .**
2. **There is a significant difference at level 0.05 between mean of experimental group in the pre / post achievement test favor to post test .**
3. **There is a significant difference at level 0.05 between mean of the experimental and the control groups in the post problem solving skills test favor to experimental group .**
4. **There is a significant difference at level 0.05 between mean of the experimental group in the pre / post problem solving skills test favor to post test .**
5. **There is a significant correlation between achievement and acquisition of problem solving skills .**

Aims of research :

This research aimed to the following :

1. **Determine the effectiveness of using some thinking maps in teaching science in achievement for pupils of second preparatory school (sample of research) .**
2. **Determine the effectiveness of using some thinking maps in teaching science in acquisition of problem solving skills for pupils of second preparatory school (sample of research) .**
3. **Determine the relationship between achievement and acquisition of problem solving skills for pupils of second preparatory school (sample of research) .**

The importance of research :

1. **int -2- teacher guide for science teachers of preparatory stage**
2. **introduce a pupil guide that may be enable pupils of second preparatory schools to use and build thinking maps**
3. **introduce a test of problem solving skills that may be guide other researchers in curricula and methods of teaching science**

The results of research :

After testing hypotheses of this research by a statistical ways (SPSS ver10) , the researcher found the following results :

1. There is a significant difference at level 0.01 between mean of the experimental and the control groups in the post achievement test favor to experimental group .
2. There is a significant difference at level 0.01 between mean of the experimental group in the pre / post achievement test favor to r post test .
3. There is a significant difference at level 0.01 between mean of the experimental and the control groups in the post problem solving skills test favor to experimental group .
4. There is a significant difference at level 0.01 between mean of the experimental group in the pre / post problem solving skills test for post test .
5. There is a significant relationship between achievement and acquisition of problem solving skills .

Recommendation of research :

In the light of the previous results , the researcher offers the following recommendation :

1. Attention should be paid to met problem solving skills in learning science .
2. Attention should be paid to use new tools in teaching based on results of researches of human brain like thinking maps .
3. Give pupils more of time and encouraging them to use thinking in different situation in their day .

Suggestions of research :

In the light of the previous results , the researcher offers the following recommendation :

1. studying the effects of thinking maps in developing science processes , creative thinking and other thinking skills .
2. studies should be conducted in applying the same research in different school subjects and different school grades .
3. studying the effects of other modern strategies and methods of science teaching to acquire problem solving skills .
4. making studies which compare between the effects of using thinking maps and other visual tools for example : mind maps , fish maps , spider maps , advaced orgnizers in achievement an acquisition problem solving skills .

conclusion :

pupils of experiment group gain a high scores but pupils of control group gain a low scores in pre achievement test and problem solving skills test because of thinking maps which experiment group use , thinking maps are powerful visual tools and have a significant statistical effect on a chievement and acquisition problem solving skills , thinking maps help pupils of second preparatory schools to organize , compare and generate ideas and taught them what information important and less important . thinking maps give my pupils the way of logical thinking that require to solve complex problems.

The statistical results which appear in this research tell us that sex variable didn't has a significant statistical effect and this may be happen because of mental abilites of preparatory pupils in female and male are the same .