

## **The Effect of Concept Teaching with Brain-Storming Technique to the Academical Success**

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**Abstract:** “Brain storming” is a kind of technique that makes the problems solved by making the attributers to use their imagine world to create too many ideas. In this study brain storming technique is used as a teaching method. Aim of this study, is revealing the differences stem from “narration method and brain storming technique” and measuring the effect of concept teaching with brain storming to academic achievement in Social Studies lesson. Research is fulfilled with 60 students 33 of them are from “experimental group” and 27 of them are from “control group”. The achievement test improved by researcher is used. According to findings of this when study brain storming technique is used for concept teaching in Social Studies lesson, it increase the achievement of the students more than the ones who learned the concepts with narration method.

**Key words:** Brain-storming • Concept teaching

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### **INTRODUCTION**

“Concepts” are the basic tools and factors of our thinking activities. New programme that is used in Turkey aims to gain students thinking ability and it cares about using concepts for this [1].

Concepts are necessary for [2,3];

- Helping the communication of people,
- Creating basic side of principals.
- Helping to solve the problems,
- Understanding and interpreting the world,
- Making useable units from very comprehensive information.

Concepts help primary school students to consist the basic cognitive structures in their brain and making new information meaningful. Because of this for students to find solutions to the social problems they live they should now the basic concepts [4].

Social Studies lesson aims to give students necessary skills, concepts and values for information producing and using it and making them adapted to the society they live in [5].

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Concept teaching is used in many lessons. In Social Studies lesson concept teaching [6];

- Effects in a positive way academic success of students.
- Facilitates to learn, remember and communication.
- Personalizes the teaching.
- Facilitates to perceive “people and life”.
- Helps to separate “dream and reality”.
- Improves the skills of problem solving and reasoning.

Addition to these importances of concept teaching it attracts attention as the basic of new learnings in primary-secondary school and during all life. Basic information and skills are given students by concept teaching [7].

There are many ways of teaching concepts. In this study “narration method and brain-storming technique” are the ones that are investigated. Narration method is chosen because [8, 9];

- It makes students passive.
- It is teacher-based.
- It is used frequently in our education system.
- It is not effective to create the value and skills new programme requires.
- It is appropriate to concept teaching.
- It makes students memorize rather than constructing information.

“Brain storming” is the concept that its root base in 1930’ and improved by advertiser whose name is Alex Osborn. This concept is improved as a management concept and within following years it has become a teaching method and it was used in developed countries. “Brain storming” is a kind of technique that makes the problems solved by making the attributers use their imagine world to create too many ideas [10].

“Brain storming” has different types according to the applications. The types in education used are; “lassical brain storming, destructive-constructive brain storming, written brain storming and dacum”. In this study classical brain storming is used because its application is easier and it reveals the ideas of the attributers better by speaking more. Classical brain storming [11] is a kind of group work that makes the right part of brain with intuitive, visual and making conceptual passing possible active. It also helps the attributers to tell the ideas and concepts freely.

In this study “brain storming” is chosen because;

- It is one of active learning technique.
- It is student-based.
- It is not used frequently in our education system.
- It is appropriate for values and skills in the programme.
- It is appropriate for concept teaching.
- It helps to construct the information.

Aim of this study, is revealing the differences stem from “narration method and brain storming technique” and measuring the effect of concept teaching with brain storming to academic achievement in Social Studies lesson.

**Problem Statement:** Do the academic achievement points of students take place in experimental group in which teaching is done with “brain storming technique” and the ones in control group in which teaching is done with “narration method” differentiate about Social Sciences lesson?

**Sub-Problems:** Does the achievement points of 6<sup>th</sup> grade school students from experimental and control group about choosen concepts in Social Studies Lesson differentiate according to;

- Experimental and control groups,
- Measurements of pretests and posttests,
- Common effect of group measurements.

**Method:** This study is designed as “pretest - posttest experimental design with control group” model.

**Population and Sample:** Students who participated to this study are choosen from a school takes place in Ankara’s Altındağ district in 2006-2007 academic year.

**Data Collection:** The achievement test prepared about concepts, is applied to two of groups as pretest. According to the pretest results the arithmetic means of the classes calculated as 9.76 and 9.26. Both classes are found similar in terms of pre-informations. Because of no meaningful difference is investigated between pre-test points randomly 6/B has been chosen as “experimental group” and 6/A has been chosen as “control group”. Research is fulfilled with 60 students 33 of them are from “experimental group” and 27 of them are from “control group”.

**Improvement of Data Collection Tool:** The achievement test with 45 questions is improved by taking into account the concepts which is used frequently in Social Studies Lesson. After the application of this test item analysis is applied to the questions and item difficulty indexes are calculated.

5 items with lower item difficulty indexes than 0.19 are deleted and one item is rearranged. As the result an achievement test created with 40 questions. KR20 reliability coefficient of achievement test is 0.98.

**Steps of Experimental Operations:** In this research during the experimental operation following steps are followed;

- Experimental group and control group chosen randomly.
- While choosing the experimental and control groups number of students in each classes taken into consideration. But achievement points of previous years and personel differences aren’t taken into consideration.
- In 10 September 2007 to decide whether two groups are equal in terms of pre-informations pre-test is applied to both groups.
- In 17 September 2007 to the experimental group students information given about the “brain-storming” technique.
- Control group’ lesson was processed as teacher planned, appropriate to “narrative method”.
- Experimental group’ lessons are planned appropriate to “brain-storming technique ” and 4 sessions are processed according to this plan.
- Experimental group that consists of 33 students is separated to groups each of them with 5 people and 6 groups generated. One leader for each group are choosen to manage the discussion and they also worked as reporter.
- In 1-26 October 2 hours for each week totally 4 sessions “brain storming technique” is applied to experimental group.
- To the generated 6 groups 10 concepts for each session and totally 40 concepts are taught.
- While the technique is applied name of the concept is given to students and they are wanted to derive the words that remind them the concept said.

Table 1: T-Test Results for the Intergroup Differences About Pretest Points

Groups	N	$\bar{x}$	S	t	P
Experimental	33	9.76	3.33	.653	.516
Control	27	9.26	2.38		

Table 2: Pretest and Posttest Mean and Standart Deviation Values that Students Gained from Achievement Test About Social Studies Lesson

Groups	Pretest			Posttest		
	N	$\bar{x}$	S	N	$\bar{x}$	S
Experimental	33	9.76	3.33	33	36.52	3.41
Control	27	9.26	2.38	27	21.22	3.92

- The examples symbolize the concept are given by students and researchers and the features describe the concept are described.
- By giving too many examples giving meaning to concepts of students became easier.
- After 5 days the application of the technique, 5<sup>th</sup> session is fulfilled and feedbacks from students taken.
- After the sessions fulfilled with brainstorming ideas analyzed and with the contribution of researcher descriptions of concepts are revealed.
- Course process of control group is followed by talking with the teacher of the lesson.
- A week after the application of the brain storming technique at 7<sup>th</sup> of November posttest to experimental and control groups is applied.

**Analyze of The Data:** In this research “percentages, frequencies and arithmetic means” are calculated and for repeated measurements for one factor ANOVA with two factors is used.

#### Findings and Interpretations

**Sub-Problem:** At the analyze of the first sub-problem of the research whether the pretest achievement points of experimental and control group students about Social Studies lesson differentiate or not is tested.

According to table 1. no differences found about the results of pretest arithmetic means between groups. So groups’ pre-information are equal before new concepts are taught.

**Sub-Problem:** At this phase the study whether achievement points of experimental and control group students change or not about Social Studies lesson is investigated according to;

- Measurements of pretest and posttest results,
- Common effect of group measurement factors.

Analyze results are given below;

According to table 2 arithmetic means of both groups are increased but more increasing has happened at the experimental group in which brain storming technique is used.

#### According to the results of ANOVA:

- A meaningful difference is investigated between the achievement points gathered from 6<sup>th</sup> class Social Studies lesson concept of experimental and control groups before and after experiments, both for pretest and posttest [F(1-58)= 207.858; p < 0.05]. This finding shows that achievement points of experimental and control group differentiate without measurement separation is done both before experiment and after experiment.

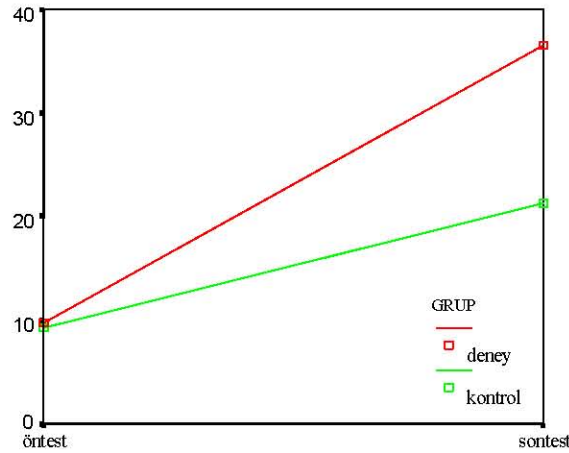


Fig. 1: The Mean Differences of Two Groups After Applying Brain Storming

- A meaningful difference is investigated between mean of achievement points for pretest and posttest about concepts taught at 6<sup>th</sup> grade about Social Studies lesson [F(1-58)= 854.606; p< 0.05]. This finding can be interpreted as achievement of students without group separation about the concepts taught in Social Studies lesson change according to teaching methods.
- According to analyze results repeating measurement factor' common effect on 6<sup>th</sup> grade concept test about Social Studies for both experimental and control groups is found meaningful [F(1-58)= 124.764; p< 0.05]. This finding show that using "brain storming technique or narration method" effect the achievement of students with different ways. This difference seen about the achievement of students can be interpreted as its source is brain storming technique.

When figure 1. is investigated this can be seen; the experimental group' arithmetic mean which brain storming technique is applied to has increased more than the group narration method used to according to points before the experiment.

**Results and Suggestions:** According to findings of this when study brain storming technique is used for concept teaching in Social Studies lesson, it increase the achievement of the students more than the ones who learned the concepts with narration method. This technique is effective to make the students more successful.

According to result these can be suggested;

- Teachers must be educated more to use brain storming more effective.
- While this technique is used teachers must create a relax classroom atmosphere to make the student explain what they want.
- Brain storming must be used more in the fields that require creativity.
- Classroom must be prepared appropriate to apply this technique (Students might sit as "O").

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