

## **The Effects of Active Learning Model on the Learning, Teaching and Communication Process of Students**

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### **Abstract**

The main purpose of this research was to determine the effects of active learning model on the learning, teaching and communication processes of students. The research was applied in a natural atmosphere employing quantitative and qualitative research approaches. The subjects involved in this research were 34 mathematics, physics and chemistry prospective teachers who were taking the course entitled 'Instructional Planning and Evaluation' as a part of Master of Science program of Yildiz Technical University in Turkey. Interviews, observations and questionnaires were used to collect the data of this study. The data was analyzed by using quantitative and qualitative research approaches. The findings of this research revealed that there was a positive effect on the learning, teaching and communication processes of students in an active learning atmosphere.

### **Key Words**

Active Learning, Teaching and Teacher Education, Higher Education, College Students

### **Introduction**

Active learning generally means a learning situation in which students are in an active position. In this process the first aim is to transform the role of the learner from that of passive observer of the lesson to that of active participation. However, this is not simply a matter of participation in the learning itself, but rather a learning process which encourages the learner to take decisions in various ways concerning how one learns and also how to use mental abilities, and to think and interpret the information which one has learned. Students in the learning process actively direct their learning using high level cognitive and decision making skills and cooperating with other learners. The two fundamentals of active learning are the ensuring that the actions carried out in the classroom correlate with the concepts and student's participation. The role of the teacher is just a facilitator of these processes, and is in a position where she or he must learn together with the students (Johnson & Johnson, 1999; Karakaya, 1997; Keyser, 2000; Lowman, 2000; Pekin, 2000; Açıkgöz, 2000; Yılmaz, 1995).

The setting out clear objectives in active learning means learners developing their problem solving abilities together with using their high level cognitive skills such as analysis, synthesis and evaluation (Allen, 1995; Bonwell ve Eison, 2001; Seeler, 2000). In fact, due to the eclectic sides of active learning different techniques, strategies and materials can be used (Karakaya, 1997; Keyser, 2000; Lowman, 2000; Açıkgöz, 2000; Yılmaz, 1995).

The findings of research related to active learning underlines the importance of active learning as part of the learning process (Bilha, 1989; Gür, 1998; Sökmen, 2000; Tombe, 1989; Yılmaz, 1995). However, there has been little research about active learning especially at the higher educational level in Turkey. That is why the

main purpose of this research was to determine the effects of active learning model on the learning, teaching and communication processes of students.

### **Method and Procedures**

#### **Subjects**

Subjects of this study comprised of 34 mathematics, physics and chemistry prospective teachers who were taking 'Instructional Planning and Evaluation' course during the fall semester of the 2001-2002 academic years, as a part of Master of Science program in Secondary Education at the department of Education of Yildiz Technical University in Istanbul, in Turkey.

#### **Materials and Procedures**

The instructional sessions was organized within an active learning atmosphere and active learning principles were applied together with some activities like panel work, brainstorming, group work and case studies in this research. Namely, in an attempt to test the objectives of the research, the data was collected from questionnaires, interviews, and observations. At the end of the lessons, the questionnaire entitled "How did you feel in these lessons?" was applied, and then three focus group interviews was carried out with students by the researcher. Moreover, two observers observed the lessons to collect data for the research. The data of the observations and interviews were analyzed using thematic techniques. The data of the questionnaires were analyzed using frequencies and percents.

### **Results**

When the findings collected from questionnaires, interviews, and observations were investigated as a whole it might be point out that active learning model has a positive effect on students. According to opinions of the students, the results might be listed as follows:

- ❑ Active learning principles were different and more entertaining for students according to traditional ones.
- ❑ Students obtained the information and knowledge by themselves and oriented responsibility for their learning.
- ❑ Active learning approach facilitated students' understanding and comprehension and helped them to develop productive and creative learning skills.
- ❑ Communication and active participation were effective by making a democratic, enjoyable and colorful atmosphere among students and between students and teacher.

However, some students stated that they acted in a passive manner in the class during the research, which arisen from the conditions and overcrowded of the class.

### **Discussion**

When the findings of the present research is evaluated as a whole, on the basis of the findings collected from questionnaires, interviews, and observations, it might be said that lessons with active learning model has a positive effect on the learning and teaching processes of students. The findings of this research support the result of the other studies and indicate similar findings (Boas, 1989; Demirci, 2000; Dolinsky, 2001; Lena, et.all., 2001; Lunenberg & Volman, 1997; McNeal, 2001; Parvin, 1989; Pekin, 2000; Sauricki, 1989; Sokmen, 1995; Uysal, 1996; Wenzel, 1995; Yılmaz, 1995).

It can be also noted that the atmosphere of active learning has a positive effect on communication and active participation of students. But the physical condition of the class cannot be ignored. The present research shows parallel findings of the other studies (Boas, 1989; DeWayne, 1990; Dolinsky, 2001; Harton, et.all., 2002; Lena et.all., 2001; Lunenberg & Volman, 1997).

The findings of this study offer some implications for the learning, teaching and communication processes of students. These implications would be recognize on in order to increase students' learning and happiness derived from improved atmosphere by applying active learning model. Moreover, the creation of active learning which lend to more enjoyable, attractive, comfortable, participative, and dynamic and easily learning atmosphere might be perceived as a viable alternative to the traditional teaching approach. This inclusion would provide a more specific area for teachers to use as well as enabling a more through consideration of the ways in which students and teachers shape learning atmosphere.

However, the information obtained from this study is mainly of a general nature. More in-depth studies are needed to get a complete picture of the active learning. A wider analysis of this data would include to the sample at both the university and secondary school settings for a more thorough examination in terms of active learning approach. New research would also show how and why active learning has an impact on the learning, teaching and communication processes of students and focus on demonstrable effectiveness as measured by the learning gains of students. A wider analysis of this data could include teachers and students contributions to the sample and a more thorough examination in terms of active learning model.

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