Fen Bilgisi Öğrencilerinin Probleme Dayalı Öğrenme Yönteminin Yönelik Tutum Düzeyleri ve Görüşleri
Attitudes and Opinions of Science Students Towards the Problem Based Learning Method

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EXTENDED SUMMARY

Students learn more effectively when the opportunities for teaching are increased, when they participate in the activities directly and when they get successful in solving the problems (Dale & Balloti, 1997). One of the modern learning methods that can be used to make students gain certain skills is the problem based learning method which is based on the constructivist learning theory. Problem based learning method is based on the experience-based learning which has been organized as solving and research of the complex and real life problems (Torp & Sage, 2002). Information gained after the determination of students' attitudes towards and opinions on Problem Based Learning is important in terms that it provides feedbacks for the programme development and it contributes to the analysis of features of students with positive or negative attitude.

The purpose of this research is to determine the science students' level of attitude and opinions towards problem based learning method.

Quantitative and qualitative research methods have been used together in this research. The working group of the research has been selected randomly and the sampling of the research is composed of 41 students in total in the first class of the Department of Science Teaching Graduate Programme in the Education Faculty of Gazi University during the 2011-2012 Spring Semester. Four students who has been chosen voluntarily from the experiment group make the working group for the qualitative part of the research. The subject of Acid Base taking place in the curriculum of the course of General Chemistry II has been carried out for 9 weeks through the activities including the application steps of the problem based learning method as well as through the techniques such as discussion, question-answer, brainstorming etc.

“Attitude Scale Towards Problem Based Learning Method” has been developed by the researcher in order to determine the science students' level of attitude towards problem based teaching method before and after the application. The scale is 3-point Likert type consisting of 31 items. In the study, the reliability of the scale which has been applied to 301 students in total studying in the 1st, 2nd, 3rd and 4th grade of the Department of Science Teaching of Gazi Education Faculty, Gazi University is calculated with Cronbach Alpha coefficient and it has been found as 0.914. The quantitative data of the research have been gathered by applying the “Scale of Attitude Towards Problem Based Learning” as pre-test and posttest. Dependent t-test has been applied to the data gathered and the data have been analysed through the SPSS 11.5 software programme.

The interview technique has been used in the research to reveal the views of the students on the method. The interviews have been made with 7 semi-structured interview questions that have been prepared by the researcher. Qualitative data gathered from the interview have been inscribed online by using the “Word for Windows” software programme. The word files in which documents of the interview have been saved have been loaded in the “NVivo Qualitative Data Analysis Programme” and sub-themes and codes have been developed systematically through the programme. The reliability of the research has been calculated by using the reliability formula suggested by Miles and Huberman (1994) and it has been found as 92.25 %.

It is concluded that there are statistical differences between the Scale of Attitude Towards Problem Based Learning Method scores of students who receive education according to problem based learning method and the method is effective in increasing the attitude level of students. Many studies about this subject in the literature show that students develop positive attitude towards the Problem Based Learning method and the findings are seen to support the results of this research (Marshall; Yamada & Inada, 2008; Kelly&Finlayson, 2009). It is revealed that science students deliver positive opinions on the problem based learning method. When the literature about the subject is investigated, it is stated that Problem Based Learning method provides learning in detail (Lehti &Lehtinen, 2005), helps students develop metacognitive skills (Hsu, 1999), solve problems (Çınar, 2007), think critically, work in teams (Ram, 1999), learn himself/herself (Özyalçın-Oskay, 2007). Students who state that Problem Based Learning method is one of the teaching methods to be used especially in science put emphasis on the significance of learning by associating the subjects with the daily life and they emphasise that Problem Based Learning Approach is effective on gaining skills in reaching the source of knowledge, skills in how they reach this knowledge, how they assess knowledge and how they should use knowledge to solve the problem.

According to the findings of the research, students' attitude and opinions on this approach can be evaluated in detail by making long-term studies in Problem Based Learning method in different stages and courses of higher education. The effect of Problem Based Learning Method on the cognitive, affective and psychomotor skills of students can be searched.