



Analysis of Pre-Service Science Teachers' Perceptions about the Project Concept using Word Association Test and Concept Maps

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The purpose of the study is to investigate pre-service science teachers' perceptions about the project concept by using word association test and concept maps. This study was carried out during 2010-2011 Spring Semester in the Special Teaching Methods course with a sample of 131 pre-service science teachers who are attending a faculty of education in Aegean Region in Turkey. Before covering the project-based learning (PBL) strategy in the mentioned course, the pre-service science teachers were applied a word association test (individually) and expected to prepare concept maps (as a group work) related with the project concept. Then, the instructor of the course covered the PBL strategy and the pre-service science teachers were experienced some PBL applications during four hour classes. At the end, pre-service science teachers were expected to prepare projects about some predetermined science topics within 5 weeks. They presented their science projects after this time interval as a group work. After this presentations were done, pre-service science teachers' perceptions about the project concept was analyzed again. Descriptive analysis was used to evaluate pre-service science teachers' pre and post perceptions. The data related with the word association test was collected through a scoring system prepared by Ormancı and Sasmaz-Oren (2010) based on the relationship between the words and the number of words used. In order to analyze the concept maps, Novak and Gowins' (1984) proposed scoring system counting the number of valid propositions, levels of hierarchy, cross-links, and examples were used. The results of the study showed that pre-service science teachers used more related words and concepts, more cross-links, and constructed propositions in a better way related with the project topic. While they mostly emphasized the "research", "problem", "material", "knowledge", and "experiment" concepts before the implementation has started; they emphasized "process", "design", "product", "constructivism", and "scientific process skills" concepts after the implementation has finished. Based on these results, recommendations are made for training of pre-service science teachers' about project applications.