

SP - (15954) - INVESTIGATING STUDENTS' SCIENTIFIC AND ENGINEERING PRACTICES IN EARLY STEM LESSONS

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Short Abstract

The purpose of this study was to investigate 4th grade students' scientific and engineering practices through Early STEM lessons and it provides an insight on how these practices were addressed during the implementation process at early grade. From this perspective, a program called as "Early STEM" based on the framework of Integrated Teaching Project was developed for K-4 students. In the light of four themes based on STEM disciplines (science, technology, engineering and mathematics), the program that spreads over eight months period was implemented within the plans prepared according to 5E Instructional Model. Sample of the study consisted of total 13 4th grade students who attended all early STEM lessons. Evidence of scientific and engineering practices was sought from field notes and transcripts from classroom observations for 8 weeks and face-to-face interviews with the students. Scientific and engineering practices were the themes of the study and under these themes codes were determined and 28 codes were derived in total. Results represent that scientific and engineering practices support a better understanding of how scientific knowledge and engineering design processes are experienced in the light of early STEM lessons. Also, students experienced multiple investigations, constructing explanations, manipulating materials and modelling a solution for problems and they prepare themselves for their future lives in a more understandable and effective manner by engaging this type of activities from early ages.