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THE EFFECT OF ACTIVITIES IN ROBOTIC APPLICATIONS ON STUDENTS' PERCEPTION ON THE NATURE OF SCIENCE AND STUDENTS' METAPHORS RELATED TO THE CONCEPT OF ROBOT

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ABSTRACT

The purpose of this study is to examine students' perceptions of the nature of science and metaphors related to the concept of robot, to determine the differentiation in these perceptions and metaphors resulting from LEGO NXT robot applications, and to share some good examples of education-oriented activities with robots. In this study, a hybrid research method, which is a blend of a qualitative descriptive survey model, pre-test, post-test semi-experimental patterns without controlled group, is utilized. The working groups consist of 48 students, who are volunteers to take part in the research, from 3 different high schools. The data are collected using a "metaphor form" consisting of open-ended questions, utilizing the Scale for Understating Nature of Science. The findings based on our analyses are as follows: The students' perception on the nature of science is generally at medium level and there are no students with low level of perception. Activities with robots contribute considerably to the level of students' perception on the nature of science. A comparison of the results obtained from pre-test and post-test illustrates that prior to the activities, some students suppose that robots are like humans with an ability to think but after the activities none of them consider the robots to have the ability to think.

Key Words: Robots, nature of science metaphor, misconception.

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