



LEARNING PHYSICAL FIELDS THROUGH PRACTICE WITH ROBOT SENSORS IN A HIGH SCHOOL ELECTRONICS COURSE

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ABSTRACT—This paper considers an electronic development workshop course taught as part of the “Electronics and Computers” subject in Israeli high schools (grade 11). Our idea implemented in the course is to study electronic systems in the context of their application to operating a mobile robot. The students equip a mobile robot platform with sensor systems, and perform assignments of automatic detection of electrical, magnetic, sound, and other fields. Assessment results indicated that experiments with different physical environments throughout the course contributed to the students’ better understanding of physical field concepts.

Key Words: *electronics, education, workshop, robot, physical field, conceptual understanding*