

**ROBO EXP: ROBOTICS TRAINING WORKSHOP IN ELEVATING THE 21ST CENTURY
SKILLS OF JUNIOR HIGH SCHOOL STUDENTS OF DISTRICT IX**

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Abstract

Filipino students' risk being left behind if Robotics is not integrated into the curriculum, as it is already part of education systems in many other countries. At present, only a limited number of public-school students have access to Robotics education due to its exclusion from the curriculum and the lack of available robot kits. This study seeks to expand access to Robotics education and develop learners' 21st-century skills, thereby enhancing their global competitiveness. The researcher hopes that the findings will provide both evidence and inspiration for strengthening Robotics education in the Philippines. The study employed a quantitative descriptive research design with purposive sampling, involving 50 junior high school students from District IX. Participants completed pre- and post-surveys to assess their knowledge of robotics and their 21st-century skills. Data were analyzed using frequency, weighted mean, and ranking, while a t-test was applied to determine significant differences in skill levels. A significant difference was found in the robotics skills of junior high school students in District IX, particularly in construction and design, as well as coding and programming. Similarly, significant improvements were observed in their 21st-century skills—including information, media, and technology skills; learning and innovation skills; communication skills; and life and career skills—when comparing results before and after the implementation of the Robotics Training Workshop. The results demonstrated that the Robotics Training Workshop effectively enhanced both the robotics and 21st-century skills of the students. Its positive impact was further evidenced by the students' active participation and success in robotics competitions.

Keywords: robotics skills, 21st century skills, training workshop