The influence of a robotics program on students' attitudes toward Effective communication

ABSTRACT

This research aimed to explore the influence of a robotic program using the robot kit "RoboBuilder RQ+110" on students' attitudes toward effective communication. The study used a quantitative research design and involved 475 grade 4 (10 years old) students from Malaysia's Selangor and Malacca states. A quasi-experimental research (pre-test & post-test) approach with control and experimental groups was adopted, and the data were analyzed with inferential statistical test and repeated measures analysis of variance (ANOVA) using SPSS 25 software at 0.05 significance level. Questionnaires were administered to collect data from the experimental and control groups. The results showed statistically significant changes ($\alpha \leq .05$) in attitudes toward effective communication for the experimental group that received a robotics program compared with the control group. The study results suggest that innovative technological tools or programs such as robotics programs are recommended as innovative science, technology, engineering, and mathematics (STEM) program rooted in constructivism to improve students' attitudes toward effective communication.