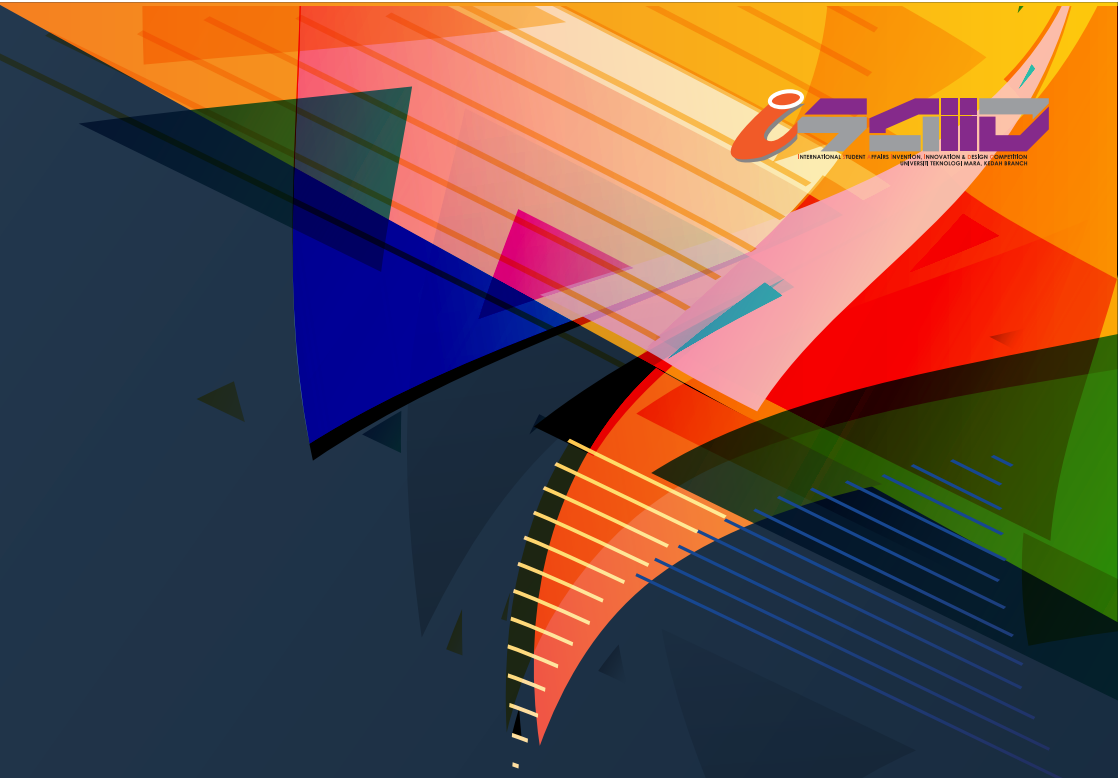

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EDUCATIONAL ANDROID SIMULATOR OF RES-CIRCUIT QUIZ BOARD

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Innovative learning has now adopted as one of the teaching methodologies to improve learning. The presence of an innovative learning approach will definitely deepen the students' knowledge while bridging the gap between theoretical knowledge and practical application. Therefore, to serve the purpose, an educational Android simulator of Res-Circuit Quiz Board has been developed to examine the student's knowledge related on series and parallel resistor connection for the Electrical Circuit course. The simulator comprises of Android application together with Res-Circuit Quiz Board are interconnected via Bluetooth connection. The primary objectives of the work are to display a set of questions by using an application, to design a low-cost, portable and compact educational kit for primary and secondary students and to verify the functionality and effectivity of Res-Circuit Quiz Board. It is noticeable that the current teaching method for this course has a lack of equipment or the teaching material to attract students' attention in the taught course, in addition to the expensive cost of purchasing the appropriate equipment. Therefore, a novel product has been developed to innovate the teaching especially to simulate the fundamental concept of series and parallel concept in electrical circuitry. Moreover, another novelty of the prototype is to provide the innovative teaching methods and produce the portable and low-cost product of teaching. The usefulness and significant in terms of flexibility, portable and low-cost prototype towards students especially for in-class usage has high potential to be commercialized among students in secondary school or even university and college students. The future works have been planned to replicate and implement the works towards other electrical course and will further expandable to other educational institutions.

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