Design and Development of Small Engine Electrical Accessories Trainer

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Abstract

This study focused on the instructional materials and laboratory equipment is important in teaching Automotive Technology, because students need actual experience to understand and perform different automotive activities. However, limited laboratory equipment can affect students' opportunities to develop their practical skills, especially in learning motorcycle electrical systems. Because of this, students may experience difficulty in identifying, testing, and troubleshooting electrical components. This study aimed to develop and evaluate an Improvised Motorcycle Electrical Trainer that can be used as an additional instructional material for teaching motorcycle electrical systems at Eulogio “Amang” Rodriguez Institute of Science and Technology (EARIST). The study used a descriptive-developmental research method guided by the Input-Process-Output (IPO) Conceptual Framework. The input included the materials, electrical components, and resources needed to develop the trainer. The process involved planning, designing, assembling, testing, and evaluating the developed trainer, while the output was the Improvised Motorcycle Electrical Trainer. The respondents were composed of Automotive Technology students, teachers, and industry experts. A researcher-made questionnaire was used to evaluate the trainer in terms of functionality, usability, portability, and effectiveness. The gathered data were analyzed using weighted mean and appropriate statistical methods. Based on the results, the students gave an overall mean rating of 3.85, the teachers gave 3.79, and the industry experts gave 3.59. All ratings were interpreted as Very Satisfactory. The statistical results also showed that there was no significant difference among the evaluations of the three groups of respondents. This indicates that they had generally similar assessments of the developed trainer. The study concluded that the Improvised Motorcycle Electrical Trainer is a useful instructional material that can provide additional support in laboratory activities and help students improve their understanding of motorcycle electrical components and circuits. Its use is recommended as a supplementary learning tool in Automotive Technology programs in (EARIST).

Keywords: Electrical Accessories; Automotive Electrical System; Instructional Materials; Trainer; Small Engine;

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