MODIFIED AUTOMOTIVE-ELECTRICAL TESTER: A TECHNICAL FEASIBILITY STUDY

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ABSTRACT

The modified automotive-electrical tester was constructed to help alleviate one of the serious problems confronting vocational instructors which was the shortage of necessary tools and equipment. Specifically, the study sought to develop out of cheap surplus and locally available materials a modified automotive-electrical tester that could be used for instruction in automotive technology classes.

The constructed apparatus is divided into two groups, namely: (1) the tester bench assembly and (2) the electrical tester accessories. The electrical tester accessories have two circuits which are the battery charging circuit and the continuity testing circuit. The battery charging circuit has two sources which could use either one of the two but not at the same time to charge the battery. The continuity testing circuit which are the test lamp and the mini-tester, test the open and short circuits of the different parts of the alternator and generator such as rotor, diodes, stator, field coils and armature.

The modified automotive-electrical tester was constructed in seven days at the cost of ₱4,329.55. It is very much cheaper than the cost of its commercial counterpart which is ₱180,000.00.

This apparatus is a modification of the alternator tester bench being used by the National Manpower and Youth Council and the Pantranco North Express, Inc. Their units were bought from foreign countries at a very expensive cost.

The results obtained from the six different demonstrations conducted show the effectiveness and reliability of this improvised apparatus.

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INTRODUCTION

This chapter consists of the origin and justification of the study, objective of the study, and its scope and delimitation.

A. Origin and Justification of the Study

Themain aim of technician education is to help provide the necessary manpower needs to make a nation productive. Provision of manpower needs contribute to economic progress and stability. The rapid changes in industrial operations due to inventions and discoveries in science and technology necessitate the introduction and development of new skills and technical information. The realization of this goal calls for the updating of the faculty and the provision for the needed facilities. As Anor (1981) stated in his study, many educators agree that the assimilation of concepts and principles can be facilitated and be made effective through experiments. This underscores the need for relevant and adequate equipment in the school. Indeed, one of the serious problems in all vocational/technical schools throughout the country today is the inadequacy of equipment to enhance effective and efficient instruction.