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INTRODUCTION OF ELECTRIC MOTORCYCLE WORKING SYSTEMS AND SAFETY ASPECTS IN STATE HIGH SCHOOL 7 DENPASAR

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ABSTRACT

Many companies in Indonesia are striving to develop electric vehicles. Safety aspects in electric vehicles are of paramount importance. Several challenges need to be addressed before the public transitions from conventional fuel-powered vehicles to electric ones. The promotion of electric vehicles, especially in terms of safety and the operation of electric motorcycles, is essential to enhance public awareness of these vehicles. Providing education to the public about the operation of electric motorcycles and their safety aspects is crucial. Community outreach activities have been carried out at SMAN 7 Denpasar using an outreach method for participants, who are students from the school. Participants will be given materials on the operation of electric motorcycles and their safety aspects, with the hope of increasing their knowledge regarding electric motorcycle operation, safety aspects, fostering an appreciation for electric motorcycle technology development, and reducing accidents caused by user negligence.

Keywords: counseling; electric motorcycle; safety; operation system

INTRODUCTION

Current developments in technology and mobility have encouraged humans to innovate and create means of transportation that are energy efficient, environmentally friendly and can reduce dependence on the use of fuel oil which will eventually run out. Electric motorbikes are electric-powered vehicles that are increasingly popular in this modern era. The working system of electric motorbikes is different from conventional motorbikes which use internal combustion engines. As the name suggests, electric motorbikes use an electric motor as the main driver, which converts electrical energy into mechanical energy which is used to move the motorbike wheels. To convert this electrical energy into motion energy, an electric motor is needed which is called an electric dynamo. This electric dynamo is the engine core or main driver in an electric motorbike.

The working system of an electric motorbike involves several components including the electric motor, battery and controller. The battery stores electrical energy that is used to drive the electric motor, and the controller regulates the flow of electricity from the battery to the electric motor. Besides that, the safety aspect is very important when driving. Safety comes from the basic word safe, which means a state of being safe and protected or protected physically, socially, financially and from various other consequences from damage, errors, accidents or various other undesirable events. Safety applies to many fields, including worker safety, transportation safety, road safety, and others. Road safety is an inseparable part of the transportation concept which emphasizes the principles of transportation that is safe, comfortable, fast, clean from pollution. As many as 1.24 million victims die every year throughout the world and 20-50 million people are injured as a result of traffic accidents (Global Status Report on Road Safety, 2013).

WHO data states that traffic accidents are the main cause of child death in the world with an average death rate of 1000 children and teenagers every day in the age range 10-24 years. Traffic accidents in Indonesia in the last three years have become the third biggest killer after

coronary heart disease and tuberculosis based on an assessment by WHO (Indonesian State Intelligence Agency, 2014). The number of traffic accidents in Indonesia increases every year. The large number of traffic accidents in Indonesia is in line with the increasing number of motorized vehicles.

The increase in the number of motorbike type vehicles has the highest rate among other types of motorized vehicles (Directorate General of Land Transportation, 2013). Human error is often the dominant cause of traffic accidents in various parts of the world, including in Indonesia. Various statistics show that the majority of accidents occur due to human error. Disobedience to traffic rules, absent-mindedness while driving, the influence of alcohol or illegal drugs, and violation of speed limits are some of the common forms of human error that cause accidents. The aim of road safety is to reduce the number of traffic accidents in Indonesia. This is because with the low number of traffic accidents, the welfare and safety for those on the road is to create traffic order so that everyone who carries out activities or activities on the road can walk safely (Soejachmoen, 2004). Providing education and socializing the working system of electric motorbikes and safety aspects is one of the preventive measures or prevention of accidents due to human error.

METHOD

The method applied in this Community Service Activity is the counseling method, with the main aim of increasing public understanding and awareness. Another goal of this counseling is to change behavior through an educational approach that uses instructional strategies. This activity is carried out in a structured, organized and directed manner with the active participation of the local community. This aims to ensure that individuals who receive counseling can understand, feel interested, and willingly follow what is taught. They are expected to be able to apply these new concepts in their lives correctly and according to their own wishes. Therefore, this extension requires comprehensive, focused and long-term oriented planning

RESULTS AND DISCUSSION

The target of PkM activities is the application of science and technology to students where the participants are students studying at SMAN 7 Denpasar, which is located at Jalan Cambodia no. 9, Dangin Puri Kangin, North Denpasar sub-district, Denpasar City, Bali Province. The aim and target of this counseling at SMAN 7 Denpasar is to provide education to students about the working system of electric motorbikes and safety aspects.

Implementation of activities

Preparation Stage

The initial step in implementing this PkM activity is to make a pre-visit to the activity location and continue with making an activity proposal. After the school approved the activity, the PkM team made preparations for implementation.

Implementation Stage

Preparation for PkM counseling at the location

Before carrying out PkM activities, the PkM and lecturers provide guidance to the cadets. After giving direction from the lecturer, Cadet/I carried out activities to prepare the place and equipment in the PkM area. The activities carried out were installing banners, installing banners, arranging chairs, and preparing equipment for presentations.

Figure 1. Preparation for implementing activities

Implementation of PkM Extension.

After completing the preparation of equipment, the activity continued with presenting the material which took place in the Hall of SMA Negeri 7 Denpasar. The activity began with a joint prayer and opening from the P3M and the Principal of SMA Negeri 7 Denpasar, followed by a welcome from the Principal of SMA Negeri 7 Denpasar and the handing over of a plaque from the Bali Police to SMA Negeri 7 Denpasar as well as a presentation of material which began with an introduction to the Bali Police Campus, and continued with a presentation of material on the working system of electric motorbikes and safety aspects. At the end of the presentation of the material, a question and answer quiz was held for the participants and those who answered the questions correctly would receive a prize in the form of a goodie bag. After completing this activity, the participants and the PkM committee carried out a group photo activity.

Figure 2. Opening of PkM activities

Figure 3. Providing material and discussion

Figure 4. Giving goodie bags to participants

Figure 5. Photo with the PkM Team and Participants

CONCLUSION

Conclusion: The PkM activities carried out by Lecturers and Cadets of the Diploma III Automotive Technology Study Program at the Bali Land Transportation Polytechnic located at SMAN 7 Denpasar with the theme Introduction to Electric Motorcycle Working Systems and Safety Aspects went smoothly and successfully. During the PkM activities, the participants were very enthusiastic about participating in the entire series of activities. The hope of the participants is that this activity can continue to be carried out regularly every year. Hopefully this activity will have a positive impact on all participants and apply the knowledge they have gained directly.

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