UNIVERSITI TEKNOLOGI MARA

DEVELOPMENT OF A HOVERBOARD

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ABSTRACT

Hoverboarding is a mode of personal transportation that allows people to get to their destination quickly without becoming physically tired as they would if they were walking. Walking can be tiresome, especially when the distance travelled is long. Furthermore, because they are fully reliant on humans, the time and energy required are both high. The main objective is to construct and test a hoverboard for students to use on their daily walks to and from class. The motors on the hoverboard in this build are controlled by pedals and are powered by DC batteries. When the pedals are pressed or loaded, the engine beneath the platform turns the tires connected to it. It's also made such that when people ride it, the board would naturally balance thanks to the use of balancing concepts in mechanical methods, prevent any mishaps. When compared to walking, it is expected to save students time and energy.

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INTRODUCTION

1.1 Background of Study

The majority of the students walk to class. Walking is an excellent kind of exercise that no one can deny. Walking, on the other hand, has disadvantages. The first disadvantage is that longer distance walking will be difficult. For a person to walk 500 meters is already a significant distance. Walking uses 100% of a human's energy, hence humans will get tired. The longer the distance, the more energy is required. Walking will take longer as well, because human speed is in a limited range and not comparable to that of advanced vehicles such as motorbikes and cars. Given the underlying difficulties, a walking alternative is urgently required.

Hoverboards are the best way to make the process of getting to class easy for students. A self-balancing hoverboard is basically built with a single frame and two main tires on the side. On the hoverboard, there is also a human foot-sized platform for humans to stand on. Above it, there is a pedal to start the journey when stepped on or control the speed according to the user's wishes. On the right and left, there are tires loaded for the purpose of achieving higher stability. Most importantly, this hoverboard requires the use of a motor. To move the hoverboard, the motor requires a battery as a power source [1].

1.2 Problem Statement

As students are not allowed to bring a car or motorcycle on campus, walking is the only way to get to class. However, due to the relatively long distance from the dormitory, and also the limitations of human speed, a long considerable amount of time is required.

Next, the issue is that walking demands a lot of manpower depending on one's distance, which varies from person to person due to some factors such as weight and stamina. It