

**MAKING LEARNING MEDIA APPLICATIONS FOR TRANSPORTATION TOOLS FOR CHILDREN WITH MODERATE DISABILITIES BASED ON AUGMENTED REALITY USING MARKER-BASED TRACKING METHOD.**

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**ABSTRACT**

*In general, the education of children with intellectual disabilities regarding transportation has predominantly relied on traditional two-dimensional media, which lacks innovation. Such conventional learning materials typically consist of static images and descriptive text, resulting in a monotonous learning experience. Consequently, this study aims to introduce an innovative learning tool in the form of an Augmented Reality (AR)--based application utilizing the Marker-Based Tracking method to present various modes of transportation visually. The application has been developed using Unity 3D software, Vuforia SDK, and Blender to create three-dimensional objects. It features seven 3D models representing different modes of transportation: cars, trains, ships, airplanes, motorcycles, bicycles, and buses, each accompanied by audio descriptions. The implementation of AR technology enables users to view these 3D models by scanning designated markers with an Android device, enhancing the learning experience's immersive quality. The application underwent black box testing, which confirmed that its functionalities—including AR features, transportation information, user instructions, and application details—operated effectively, achieving a 100% success rate. Testing was conducted across various types and models of Android smartphones without any issues. Furthermore, an evaluation of teacher responses gathered through a survey of 24 educators working with children with moderate intellectual disabilities yielded positive feedback. The teachers acknowledged that this application is an effective learning resource for transportation tools, with the AR technology being highly innovative. This favorable response indicates that the AR-based application has successfully introduced a novel approach to educational media for children with moderate intellectual disabilities.*

**Keywords:** *Application, Augmented Reality, Marker Based Tracking, moderately mentally retarded*