3D Vegetable Recognition Learning Application for Children at TK Baiturrohman Using Augmented Reality

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ABSTRACT

According to Mrs. Siti Asiyah, S.Ag., the use of conventional learning media such as printed books and 2D images at TK Baiturrohman is considered suboptimal for early childhood education, resulting in decreased learning interest and limited understanding of the types and benefits of vegetables. The low interest of children in consuming vegetables is also a concern that needs to be addressed early through appropriate educational approaches. This research aims to develop an interactive learning media in the form of a 3D vegetable introduction application based on Augmented Reality (AR) using the Marker-Based Tracking method. The application is specifically designed for young children to provide engaging and interactive learning experiences. The development process follows the Multimedia Development Life Cycle (MDLC) model, which consists of six stages: concept, design, material collection, creation, testing, and distribution. The application presents 15 types of vegetables as 3D objects created in Blender and integrated into Unity using the Vuforia SDK, complete with voice narration and information on the names and benefits of the vegetables. It also includes a feature to display the growth phases of vegetables, which can be accessed manually via buttons. Based on testing using the User Acceptance Test (UAT) method, the application received a score of 88.07%, classified as excellent. The results indicate that this application is effective and feasible as a learning medium to enhance early childhood understanding of vegetables.

Keywords*: Augmented Reality, Early Childhood Education, 3D Vegetables, MDLC, Interactive Media*