

**PENGEMBANGAN *AUGMENTED REALITY* DALAM PEMBELAJARAN
MODEL INKUIRI TERBIMBING UNTUK PENGENALAN PLANET TATA
SURYA DI SEKOLAH DASAR INKLUSI**

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ABSTRAK

Materi tata surya bersifat abstrak sulit dipahami oleh peserta didik di sekolah dasar inklusi melalui media pembelajaran konvensional. Penelitian ini bertujuan untuk mengembangkan media *Augmented Reality* (AR) yang difungsikan sebagai sarana pengenalan planet dalam sistem tata surya, sekaligus mengkaji tingkat efektivitas serta respon pengguna terhadap media tersebut dalam pembelajaran model inkuiri terbimbing. Penelitian ini menggunakan pendekatan *Research and Development* (R&D) dengan mengadaptasi model *Multimedia Development Life Cycle* (MDLC) yang terdiri atas enam tahapan pengembangan, meliputi *concept, design, material collecting, assembly, testing, dan distribution*. Luaran dari proses pengembangan tersebut berupa sebuah aplikasi AR yang mampu memvisualisasikan objek planet dalam bentuk tiga dimensi dengan *real-time* melalui teknik pemindaian *marker*, serta dilengkapi fitur video bahasa isyarat guna mengakomodasi kebutuhan belajar peserta didik tunarungu. Hasil pengujian pada SD Negeri 2 Bengkala memperlihatkan tingkat validitas ahli isi dan media mencapai 1,00 (Sangat Tinggi). Melalui skema eksperimen *one group pretest posttest*, intervensi media terbukti mendongkrak rerata nilai siswa dari 57,6 menjadi 86,4, yang setara dengan capaian N-Gain sebesar 0,71 (Tinggi) serta indeks *effect size* sebesar 3,17 (Sangat Tinggi). Pengujian *User Experience Questionnaire* (UEQ) pada 25 siswa menghasilkan kualifikasi *excellent* untuk seluruh dimensi evaluasi. Dengan demikian, media AR yang dikembangkan terbukti valid, efektif, dan akomodatif untuk diimplementasikan dalam ekosistem pendidikan dasar inklusi.

Kata Kunci: *Augmented reality*, inkuiri terbimbing, planet tata surya, sekolah inklusi

**DEVELOPMENT OF AUGMENTED REALITY IN GUIDED INQUIRY
LEARNING MODEL FOR THE INTRODUCTION OF SOLAR SYSTEM
PLANETS IN AN INCLUSIVE ELEMENTARY SCHOOL**

By

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ABSTRACT

Solar system material is abstract in nature, making it difficult for students in inclusive elementary schools to understand through conventional learning media. This study aimed to develop an Augmented Reality (AR) learning medium as a tool for introducing the planets in the solar system, while also examining its effectiveness and users' responses when implemented within a guided inquiry learning model. This research employed a Research and Development (R&D) approach by adapting the Multimedia Development Life Cycle (MDLC) model, which consists of six stages: concept, design, material collecting, assembly, testing, and distribution. The development process resulted in an AR application capable of visualizing three-dimensional planetary objects in real time through marker-based scanning technology and equipped with sign language video features to accommodate the learning needs of students with hearing impairments. The evaluation conducted at SD Negeri 2 Bengkulu demonstrated that both content and media expert validation achieved a validity index of 1.00 (Very High). Based on a one-group pretest-posttest experimental design, the implementation of the developed media significantly improved students' mean scores from 57.6 to 86.4, with an N-Gain score of 0.71 (High) and an effect size of 3.17 (Very High). Furthermore, the User Experience Questionnaire (UEQ) administered to 25 students yielded an Excellent rating across all evaluation dimensions. Therefore, the developed AR learning media is proven to be valid, effective, and accommodative for implementation in inclusive elementary education.

Keywords: Augmented reality, guided inquiry, solar system planets, inclusive school