

## ABSTRACT

**KARISMAYANI:** Development of Android-based Augmented Reality Integrated Learning Media on Molecular Chemistry Materials to Improve Students' Understanding of Concepts. **Chemistry Education Study Program, FKIP Malikussaleh University, 2025.**

This study aims to determine the quality of Augmented Reality integrated learning media on molecular chemicals and to find out the difference in students' understanding of concepts before and after using learning media.

This research falls under a type of research and development, known as Research and Development (R&D). The model applied in this study is ADDIE (Analysis, Design, Development, Implementation, and Evaluation), which consists of five stages of development. The first stage in the ADDIE model is Analysis, at this stage an analysis of problems in research schools is carried out and also an analysis of the needs used in media development and considering appropriate materials. The next stage is the Design stage, where the materials necessary for media development are gathered, followed by the initial design. The initial design of the learning media is then validated at the Development stage by expert validators. In this study, the media was validated by two validators consisting of two lecturers from Malikussaleh University. In addition, at this stage, the feasibility of the media was also validated by two chemistry teachers from SMA Negeri 1 Lhokseumawe. The media is then revised based on suggestions and improvements from expert validators. The next stage is Implementation, where tests are carried out on students to evaluate their response to the learning media. At this stage, students are given a question sheet to understand the concept of molecular shape using the One-Group Pretest-Posttest Design method, namely by doing questions before and after treatment. The last stage in this study is Evaluation, where improvements are made to the media that has been developed with the aim of improving the quality and ease of use of the product.

The results of the study showed that the validation by experts obtained a score of 4.39 in the "Very Good" category, while the students' response to the developed learning media was also in the "Very Good" category with a score of 4.77. Based on these results, the developed learning media is declared suitable for use by students as an alternative in the learning process. In addition, this study also showed an increase in students' understanding of concepts which was originally in the "Low" category with a score of 56.82, increased to the "Medium" category with a score of 76.29. The N-gain results also showed that 6 students experienced an improvement in the "High" category, 44 students experienced an improvement in the "Medium" category and 16 students in the "Low" category after the use of Augmented Reality Integrated Learning Media.

**Keywords:** ADDIE, Augmented Reality, Concept Understanding