BAB V
CONCLUSION AND RECOMMENDATION

5.1 Conclusion

This study discusses the process of developing learning media with the help of Augmented Reality technology based on flashcards using the ADDIE model approach, which includes five stages: analysis, design, development, implementation, and evaluation. Each stage has a specific role, starting from analysing student needs, curriculum, learning components, learning limitations, and the type of media to be used. The design stage involves creating flowcharts and storyboards for the media, with the aim of facilitating the process of creating learning media. At this stage, input is also sought from experts related to learning media that are in line with the established indicator achievements. Next, in the development stage, the design created in the design stage is realized into actual learning media. During the implementation phase, learning activities are conducted in the classroom using the developed and revised educational media, taking into account expert suggestions, and feedback and evaluations are sought from students and teachers. In the final evaluation phase, the goal is to refine the media to make it more optimal for future use.

Augmented Reality learning media based on flashcards focuses on the topic of “earth layers” for junior high school students. This media is intended for 8th grade junior high school students in Bandung.

Before implementing this media in schools, it was first assessed for its suitability as a learning medium by lecturers and teachers who are experts in media and subject matter. Based on the subject matter experts' assessment of 5 people using Aiken's V formula, a V value of 0.88 was obtained, indicating that the media can be used to facilitate students' learning process regarding the concept of the Earth's layers. For the media experts' assessment by five individuals, a value of 0.85 was obtained, indicating that the educational media created is suitable for use.

The AR-based flashcard learning media also received positive responses from teachers regarding the media and material in this learning media. With an

average score of 4.5 for material assessment and 4.4 for media assessment out of a maximum score of 5. The researchers also collected criticism and suggestions provided by material experts regarding the media or material in this learning media. A summary of the teachers' suggestions indicates that this medium has the potential to become an attractive and interactive learning medium with the use of AR as an aid. On the other hand, there are also several suggestions that require improvements to this learning medium, such as reducing the content so that it is easier to access, adding exercises for students, and including 3D animations about the Earth and its layers.

In addition, flashcard-based AR learning media also received positive responses from students in facilitating concept mastery in learning about the layers of the earth, with an average score of 4.7 out of a maximum score of 5, for the combination of learning media and material facilitation.

5.2 Recommendation

There are several recommendations for further research related to the development of flashcard-based Augmented Reality as a learning medium that facilitates junior high school students' mastery of concepts in earth layer material, including:

1. Reduce the size of animation files (including 3D models, videos, and interactive elements). This is to minimize bugs and long loading times when accessing learning media.
2. Include more practice questions, with the aim of measuring students' understanding of the concepts related to the material presented in the media.