

ABSTRACT

Paulus Nainggolan, IDN 4163312021 (2022), Development of Learning Videos to Improve Students' Ability to Understand Mathematical Concepts on Polynomial Material.

Behind the success of successful online teaching and learning, there must be careful preparation in creating or building the system. Some complaints that are around us are that some students have difficulty in online-based mathematics learning. Some of them have difficulty signaling due to cloudy or rainy weather, not having money to buy internet quota, boredom during the teaching, and learning process, and difficulty understanding the material in online learning. Although there are examples that have been explained by the teacher, they still do not understand what their teacher teaches them. The teacher had already made learning materials using instructional video media, but it was still not enough for students to understand the polynomial material taught by the teacher, and according to the teacher the main problem was that the students' ability to memorize formulas was still lacking. The objectives of this research to see validity, effectiveness and practicality of the video development using PowerPoint and Filmora application. This research is development research that applies the Dick & Carey development model. This research focuses on developing learning videos using PowerPoint as a learning media, and Filmora as a learning video editing medium. The subjects of this study were students of class XI – IPA 1 SMA with a total of 18 people at the Don Bosco Budi Murni 2 Private High School Medan. The results of media validation according to experts are in the "very valid" category with an average score of 4.16. In this case the learning media developed is valid and the components are internally consistent. The results of the validation of the material are in the very valid category with an average score of 4.5. Based on the results of field test data analysis, it is known that the average score obtained from the practicality questionnaire sheet for learning media by the teacher is 85%, meanwhile, based on the students' practicality questionnaire, it was found that the average score obtained was 86%, From the results of the student response questionnaire analysis showed that students gave a positive response to the media, namely 88.5%, thus the media was in the "very effective" category. From these data, it can be seen that there is a high increase in students' conceptual understanding and a positive response of students reaching 80.72%. Therefore, the developed augmented reality-based interactive learning media can be said to be effective. So that the resulting video learning media is valid, practical, and effective on polynomial materials.

Keywords: Learning Media, Video, Dick, Carey, & Carey