

## **ABSTRAK**

**Armita Sari Harahap, NIM. 4203331016 (2024). Pengembangan E-Modul Berbasis Higher Order Thinking Skills (HOTS) Pada Materi Larutan Penyangga Di MAN 1 Medan.**

Kurangnya kemampuan berpikir tingkat tinggi peserta didik terhadap materi-materi yang diajarkan terutama pada materi larutan penyangga dikarenakan materi larutan penyangga merupakan salah satu materi yang sulit dipahami oleh peserta didik, beberapa guru yang mengajar masih terkesan monoton sehingga mangakibatkan minat belajar peserta didik berkurang, dan peserta didik mengalami kebosanan jika pembelajaran menggunakan media yang kurang memadai. Untuk mengetahui kevalidan, kepraktisan, keefektifan dari penggunaan media pembelajaran E-Modul berbasis Higher Order Thinking Skills (HOTS). Jenis penelitian yang digunakan dalam penelitian ini adalah Research & Development (R&D) atau penelitian pengembangan. Penelitian pengembangan yang mengacu pada model 4-D (four-D). Langkah-langkah model pengembangan 4-D (four-D) terdiri dari 4 tahapan pengembangan tetapi peneliti hanya memakai 3 tahapan yaitu define, design, dan develop. Subjek dalam penelitian ini adalah 1 ahli media, 2 ahli materi, 1guru uji kepraktisan, dan uji coba ke 30 peserta didik. Hasil validasi ahli media sebesar 93 % dan hasil validasi ahli materi sebesar 83,33% dengan kategori “Sangat Valid”. Hasil uji kepraktisan oleh guru memperoleh persentase sebesar 82% dengan kategori “Sangat Praktis”. Uji coba dengan 30 orang peserta didik memperoleh hasil persentase sebesar 86,33% dengan kategori “Sangat Efektif”. Dapat disimpulkan bahwa pengembangan E-Modul berbasis Higher Order Thinking Skills (HOTS) pada materi larutan penyangga dinyatakan sangat valid, praktis dan efektif untuk digunakan sebagai media pembelajaran.

kata kunci : Penelitian pengembangan, E-Modul, Hots, Larutan Penyangga

## **ABSTRACT**

**Armita Sari Harahap, NIM. 4203331016 (2024). Development of E-Module Based on Higher Order Thinking Skills (HOTS) on Buffer Solution Material at MAN 1 Medan.**

The lack of students' high-level thinking abilities regarding the materials taught, especially the buffer solution material, is because the buffer solution material is one of the materials that is difficult for students to understand, some teachers who teach still seem monotonous, resulting in reduced interest in learning for students, and the students Students experience boredom if learning uses inadequate media. To determine the validity, practicality and effectiveness of using E-Module learning media based on Higher Order Thinking Skills (HOTS). The type of research used in this research is Research & Development (R&D) or development research. Development research that refers to the 4-D (four-D) model. The steps of the 4-D (four-D) development model consist of 4 development stages but researchers only use 3 stages, namely define, design, and develop. The subjects in this research were 1 media expert, 2 material experts, 1 practical test teacher, and 30 students tested. The media expert validation results were 93% and the material expert validation results were 83.33% in the "Very Valid" category. The results of the practicality test by the teacher obtained a percentage of 82% in the "Very Practical" category. The trial with 30 students obtained a percentage result of 86.33% in the "Very Effective" category. It can be concluded that the development of an E-Module based on Higher Order Thinking Skills (HOTS) on buffer solution material is declared to be very valid, practical and effective for use as a learning medium.

kata kunci : Development Research, E-Modul, Hots, Buffer solution