

ABSTRAK

SUKMA LYLIANA: Pengembangan Flipbook Kimia Digital Berbasis Inkuiri Terbimbing Pada Materi Asam Basa Untuk Meningkatkan Hasil Belajar Kognitif. **Program Studi Pendidikan Kimia FKIP Universitas Malikussaleh, 2026.**

Materi asam basa merupakan salah satu materi kimia yang sulit dipahami peserta didik karena memuat konsep abstrak yang tidak dapat diamati secara langsung. Keterbatasan penggunaan media pembelajaran interaktif juga menyebabkan peserta didik kurang memperoleh pengalaman belajar yang eksploratif sehingga dapat berdampak pada hasil belajar kognitif. Oleh karena itu, diperlukan media pembelajaran digital yang interaktif dan dapat memfasilitasi peserta didik dalam memahami konsep melalui proses penyelidikan.

Penelitian ini bertujuan untuk mengetahui kevalidan dan peningkatan hasil belajar kognitif peserta didik melalui penggunaan flipbook kimia digital berbasis inkuiri terbimbing pada materi asam basa di kelas XI SMA Negeri 3 Kejuruan Muda. Penelitian ini menggunakan metode *Research and Development (R&D)* dengan model ADDIE (*Analysis, Design, Development, Implementation, and Evaluation*) yang dilaksanakan sampai tahap *Implementation*. Data dikumpulkan melalui lembar validasi ahli materi dan ahli media, penilaian guru, angket respons peserta didik, serta tes kognitif berupa *pretest* dan *posttest*. Analisis data meliputi validitas, respons peserta didik, N-Gain, uji normalitas, dan *paired t-test*.

Hasil penelitian menunjukkan validasi ahli materi sebesar 86,29%, ahli media sebesar 87,38%, penilaian guru sebesar 98,44%, dan respons peserta didik sebesar 89,23%. Hasil belajar meningkat dari rata-rata *pretest* 26,90 menjadi *posttest* 76,67 dengan N-Gain 67,41% berkategori sedang. Uji *paired t-test* menunjukkan nilai signifikansi $0,000 < 0,05$. Dengan demikian, flipbook kimia digital berbasis inkuiri terbimbing dinyatakan sangat valid dan layak digunakan untuk mendukung peningkatan hasil belajar kognitif peserta didik pada materi asam basa.

Kata Kunci: flipbook digital, inkuiri terbimbing, asam basa, hasil belajar kognitif, ADDIE

ABSTRACT

SUKMA LYLIANA: Development of a Guided Inquiry-Based Digital Chemistry Flipbook on Acid-Base Materials to Improve Students' Cognitive Learning Outcomes. **Chemistry Education Study Program, Faculty of Teacher Training and Education, Universitas Malikussaleh, 2026.**

Acid-base material is one of the chemistry topics that is difficult for students to understand because it involves abstract concepts that cannot be directly observed. The limited use of interactive learning media also results in students having fewer opportunities to engage in exploratory learning, which may affect their cognitive learning outcomes. Therefore, an interactive digital learning medium is needed to facilitate students in understanding concepts through inquiry processes.

This study aimed to determine the validity of and improvement in students' cognitive learning outcomes through the use of a guided inquiry-based digital chemistry flipbook on acid-base material for Grade XI students at SMA Negeri 3 Kejuruan Muda. This study employed the Research and Development (R&D) method using the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model, which was conducted through the Implementation stage. Data were collected using material and media expert validation sheets, teacher assessment, student response questionnaires, and cognitive tests in the form of pretests and posttests.

Data analysis included validity, student responses, N-Gain, normality testing, and paired t-test. The results showed that the validation scores were 86.29% for material experts, 87.38% for media experts, 98.44% for teacher assessment, and 89.23% for student responses. Students' learning outcomes increased from a pretest mean score of 26.90 to a posttest mean score of 76.67, with an N-Gain of 67.41%, categorized as moderate. The paired t-test showed a significance value of $0.000 < 0.05$. Thus, the guided inquiry-based digital chemistry flipbook was highly valid and feasible for supporting the improvement of students' cognitive learning outcomes in acid-base material.

Keywords: digital flipbook, guided inquiry, acid-base, cognitive learning outcomes, ADDIE