

ABSTRAK
PENGEMBANGAN MODUL PRAKTIKUM
BERBASIS INKUIRI TERBIMBING PADA MATERI
LARUTAN PENYANGGA FASE F KURIKULUM MERDEKA

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Peserta didik sulit memahami materi dan konsep larutan penyangga dan banyak peserta didik mendapatkan nilai kurang. Melalui pendekatan inkuiri, peserta didik dapat membuktikan konsep melalui percobaan langsung dan lebih mendalam. Inkuiri terbimbing membantu peserta didik selama proses belajar yang didalamnya menyelidiki suatu topik secara mendalam dan sistematis. Penelitian ini bertujuan untuk (1) mengembangkan modul ajar berbasis inkuiri pada materi larutan penyangga fase F SMA kurikulum merdeka dan (2) mengetahui kelayakan produk modul ajar berbasis inkuiri yang dikembangkan memenuhi syarat yang digunakan secara valid, efektif dan praktis. Penelitian ini merupakan penelitian dan pengembangan (*Research and Development/R&D*) dengan model 4D yang dimodifikasi menjadi 3D. Model 3D memiliki langkah-langkah penelitian dan pengembangan seperti *define*, *design* dan *development*. Subjek penelitian yaitu 15 peserta didik kelas XI Fase F SMA Pangudi Luhur Sedayu. Instrumen pengumpulan data berupa lembar wawancara guru, lembar soal *post-test*, lembar observasi psikomotorik dan afektif, lembar validasi pakar ahli, dan lembar angket peserta didik. Hasil penelitian (1) dihasilkan modul praktikum berbasis inkuiri pada materi larutan penyangga fase F kurikulum merdeka, (2) modul praktikum yang dikembangkan memiliki tingkat kelayakan dengan kriteria sangat valid dengan rata-rata skor 84,583%, sangat praktis berdasarkan angket respons peserta didik dengan skor rata-rata 88,125%, dan sangat efektif dari hasil *post-test* dengan skor rata-rata peserta tuntas 80,11%. Berdasarkan hasil tersebut, modul praktikum berbasis inkuiri terbimbing pada materi larutan penyangga fase F kurikulum merdeka dinyatakan valid, efektif dan praktis.

Kata kunci : angket, inkuiri terbimbing, kurikulum merdeka, larutan penyangga, modul praktikum

ABSTRACT
DEVELOPMENT OF A GUIDED INQUIRY-BASED PRACTICAL MODULE
ON THE MATERIAL OF PHASE F BUFFER SOLUTIONS IN THE
INDEPENDENT CURRICULUM

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Students often struggle to grasp the material and concepts regarding buffer solutions, resulting in many receiving low grades. An inquiry-based approach allows students to verify concepts through direct, in-depth experimentation. Guided inquiry supports students throughout the learning process as they investigate a topic thoroughly and systematically. This study aims to (1) develop an inquiry-based learning module on buffer solutions for Phase F (Senior High School) under the Kurikulum Merdeka Curriculum and (2) determine the feasibility of the developed module, ensuring it meets the criteria for validity, effectiveness, and practicality. This study employs the Research and Development R&D method using a 4D model modified into a 3D model. The 3D model comprises the research and development stages of Define, Design, and Development. The research subjects were 15 Grade XI Phase F students at SMA Pangudi Luhur Sedayu. Data collection instruments included teacher interview sheets, post-test question sheets, psychomotor and affective observation sheets, expert validation sheets, and student questionnaires. The research results indicate that (1) an inquiry-based practicum module on buffer solutions for Phase F of the Kurikulum Merdeka was successfully produced, and (2) the developed module demonstrated a high level of feasibility, meeting criteria for being very valid average score of 84.583%, very practical based on student response questionnaires average score of 88.125%, and very effective based on post-test results average mastery score of 80.11%. Based on these findings, the guided inquiry-based practicum module on buffer solutions for Phase F of the Kurikulum Merdeka is deemed valid, effective, and practical.

Keyword : buffer solution, guided inquiry, merdeka curriculum, practicum module, questionnaire.

