ABSTRAK

Randika Janama Ginting, NIM 4182131010 (2022). Pengembangan Modul Berbasis *Problem Based Learning* (PBL) dengan Pendekatan Saintifik Pada Pokok Bahasan Asam-Basa Untuk Siswa Kelas XI SMA.

Penelitian ini bertujuan untuk (1) mengetahui tingkat validasi modul pembelajaran pada pokok bahasan asam-basa yang dikembangkan berbasis *Problem Based Learning* (PBL) dengan pendekatan saintifik, (2) mengetahui hasil belajar siswa terhadap modul pembelajaran berbasis *Problem Based Learning* (PBL) dengan pendekatan saintifik pada pokok bahasan asam-basa, dan (3) mengetahui respon siswa terhadap modul pembelajaran berbasis *Problem Based Learning* (PBL) dengan pendekatan saintifik pada pokok bahasan asam-basa. Penelitian ini menggunakan metode (R&D) dengan model ADDIE pada setiap tahapannya (analisis, desain, pengembangan, implementasi, dan evaluasi). Produk yang dikembangkan telah divalidasi oleh 3 validator ahli yang terdiri dari 2 dosen kimia dan 1 guru kimia. Rata-rata hasil analisis modul berbasis *Problem Based Learning* (PBL) dengan pendekatan saintifik yang dilakukan oleh dosen dan guru kimia yang telah dikembangkan sebesar $\pm$ 3,26 dengan maksimal penilaian tertinggi sebesar 4. Ini adalah kriteria sangat layak dan dapat digunakan sebagai bahan ajar. Berdasarkan penilaian persentase respon siswa terhadap modul yang telah dikembangkan sebesar 71,31 (cukup tinggi). Menggunakan modul berbasis *Problem Based Learning* (PBL) dengan pendekatan saintifik pada pokok bahasan asam-basa, hasil belajar siswa meningkat menjadi 75,43% dengan skor maksimal 100 dan minimum $\pm$ 75 serta rata-rata dari *posttest* sebesar $\pm$ 86 > Nilai KKM sebesar $\pm$ 75. Berdasarkan pengujian hipotesis menggunakan uji hipotesis yang dilakukan menghasilkan $t_{hitung} > t_{tabel}$ yaitu 12,36 > 1,69. Penelitian ini menyimpulkan bahwa modul berbasis Problem Based Learning (PBL) dengan pendekatan saintifik pada pokok bahasan asam basa mampu meningkatkan hasil belajar siswa dan mampu meningkatkan respon siswa dalam mengikuti pembelajaran.

Kata Kunci: Modul, *Problem Based Learning*, Asam-Basa, Pendekatan Saintifik, model ADDIE

ABSTRACT

Randika Janama Ginting, NIM 4182131010 (2022). Development of *Problem Based Learning* (PBL) Modules with a Scientific Approach on Acid-Base Subjects for Class XI High School Students.

This study aims to (1) determine the level of validation of learning modules on acid-base topics developed based on Problem Based Learning (PBL) with a scientific approach, (2) determine student learning outcomes on Problem Based Learning (PBL) based learning modules with a scientific approach. scientific research on acid-base topics, and (3) knowing student responses to Problem Based Learning (PBL)-based learning modules with a scientific approach on acid-base topics. This study uses the method (R&D) with the ADDIE model at each stage (analysis, design, development, implementation, and evaluation). The product developed has been validated by 3 expert validators consisting of 2 chemistry lecturers and 1 chemistry teacher. The average result of module analysis based on Problem Based Learning (PBL) with a scientific approach carried out by chemistry lecturers and teachers that has been developed is $\pm$ 3.26 with the highest maximum rating of 4. This is a very feasible criterion and can be used as teaching material. Based on the assessment of the percentage of student responses to the module that has been developed, it is 71.31 (high enough). Using a Problem Based Learning (PBL) based module with a scientific approach on the subject of acid-base, student learning outcomes increased to 75.43% with a maximum score of 100 and a minimum of $\pm$ 75 and the average posttest was $\pm$ 86 > KKM score of $\pm$ 75. Based on hypothesis testing using hypothesis testing, the result is tcount > ttable, which is 12.36 > 1.69. This study concludes that the Problem Based Learning (PBL) based module with a scientific approach on the subject of acid and base is able to improve student learning outcomes and is able to improve student responses in participating in learning.

Kata Kunci: Modules, *Problem Based Learning*, Acid-Base, Scientific approach, ADDIE Models