

## ABSTRAK

### **Pernando Sitepu, NIM 4173331039 (2021) Pengembangan Modul Elektronik Berbasis *Problem Based Learning* (PBL) Pada Materi Larutan Elektrolit Dan Nonelektrolit**

Penelitian ini menggunakan metode penelitian *Research and Development* (R&D) yaitu mengembangkan bahan ajar kimia berbasis masalah pada materi larutan elektrolit dan non elektrolit. Bertujuan untuk mengetahui standar kelayakan bahan ajar kimia sesuai dengan kriteria kelayakan isi, bahasa, penyajian, dan kegrafikan serta melihat respon siswa terhadap bahan ajar yang dikembangkan. Tahapan yang dilalui dalam penelitian dimulai dari analisis silabus dengan kurikulum 13 revisi, analisis buku, perancangan dan pengembangan bahan ajar, validasi bahan ajar ahli, dan respon siswa terhadap bahan ajar hasil pengembangan sehingga tersusun bahan ajar berbasis masalah pada materi larutan elektrolit dan non elektrolit yang layak dan sesuai dengan kriteria BSNP. Berdasarkan hasil validasi terhadap bahan ajar dengan menggunakan angket BSNP yang telah dimodifikasi, dalam angket ini aspek yang dinilai meliputi aspek kelayakan isi, aspek kelayakan bahasa, aspek kelayakan penyajian, dan aspek kelayakan kegrafikan. Berdasarkan hasil standarisasi modul berbasis masalah pada materi larutan elektrolit dan nonelektrolit oleh dosen kimia Unimed dan Guru Kimia, secara keseluruhan rata-rata kelayakan isi memperoleh hasil 3,48 dengan kriteria valid dan tidak perlu revisi, untuk kelayakan bahasa memperoleh hasil 3,59 dengan kriteria valid dan tidak perlu revisi, untuk kelayakan penyajian memperoleh

hasil 3,73 dengan kriteria valid dan tidak perlu revisi, dan untuk kelayakan kegrafikan memperoleh hasil 3,60 dengan kriteria valid dan tidak perlu revisi. Hal ini berarti hasil rata-rata sebesar 3,60, Modul berbasis Masalah pada materi larutan elektrolit dan nonelektrolit valid dan tidak perlu direvisi. Setelah bahan ajar valid maka disarankan untuk melakukan penilaian kepada siswa dengan tujuan untuk melihat persentasi tingkat kepuasan siswa terhadap bahan ajar berbasis masalah yang dikembangkan berdasarkan aspek tampilan, aspek materi, dan aspek manfaat. Diperoleh hasil dari 30 orang responden yaitu aspek tampilan sebesar 92,67 %, aspek materi sebesar 90,5 %, dan aspek manfaat sebesar 88,17 %. Sehingga rata-rata persentasi tingkat kepuasan siswa terhadap bahan ajar berbasis masalah yang sudah dikembangkan sebesar 90,44%. Hal ini membuktikan bahwa siswa menyukai bahan ajar berbasis masalah tersebut sehingga bahan ajar dapat digunakan dalam pembelajaran kimia serta sebagai referensi bacaan bagi siswa.

**Kata Kunci :** Modul Elektronik *Berbasis Problem Based Learning* (PBL) dan Larutan Elektrolit dan Nonelektrolit

## ABSTRAK

### **Pernando Sitepu, NIM 4173331039 (2021) Development Of An Based Electronic Module For *Problem Based Learning* (PBL) On Elekcrolyte and Nonelectrolyte Solutions**

This study uses Research and Development (R&D) research methods, namely developing problem-based chemistry teaching materials on electrolyte and non-electrolyte solutions. Aims to determine the feasibility standard of chemistry teaching materials in accordance with the eligibility criteria for content, language, presentation, and graphics and see student responses to the developed teaching materials. The stages that were passed in the research started from syllabus analysis with 13 revised curriculum, book analysis, design and development of teaching materials, validation of expert teaching materials, and student responses to teaching materials resulting from the development so that problem-based teaching materials were composed of electrolyte and non-electrolyte solution materials that appropriate and in accordance with BSNP criteria. Based on the validation results of teaching materials using a modified BSNP questionnaire, in this questionnaire the aspects assessed include aspects of content feasibility, language feasibility aspects, presentation feasibility aspects, and graphic feasibility aspects. Based on the results of standardization of problem-based modules on electrolyte and nonelectrolyte solution materials by Unimed chemistry lecturers and

Chemistry Teachers, overall the average content feasibility obtained a result of 3.48 with valid criteria and no need for revision, for language eligibility the results obtained 3.59 with criteria valid and does not need revision, for the feasibility of the presentation, the result is 3.73 with valid criteria and does not need revision, and for the feasibility of the graphic, the result is 3.60 with valid criteria and does not need revision. This means that the average result is 3.60. Problem-based Modules on electrolyte and nonelectrolyte solutions are valid and do not need to be revised. After the teaching materials are valid, it is recommended to conduct an assessment of students with the aim of seeing the percentage of students' satisfaction level with problem-based teaching materials developed based on aspects of appearance, material aspects, and benefits aspects. The results obtained from 30 respondents, namely the display aspect of 92.67%, the material aspect of 90.5%, and the benefit aspect of 88.17%. So that the average percentage level of student satisfaction with problem-based teaching materials that have been developed is 90.44%. This proves that students like problem-based teaching materials so that teaching materials can be used in chemistry learning as well as reading references for students.

**Keywords :** Electronic Module Based Problem Based Learning (PBL) Module and Electrolyte and Nonelectrolyte Solutions