

## ABSTRACT

**Ismiyati. 2018. "The Development of Physics Learning Module Based on Problem Based Learning to Improve Metacognitive Skills on Class X High School Students". Thesis. Graduate Program of Universitas Negeri Padang.**

This research was based on the facts in the field, the learning process in the classroom was not in accordance with the expectations of the 2013 curriculum. The application of approaches and methods / models of learning and learning resources is still not optimal. The unavailability of learning resources that can stimulate students' metacognitive skills. Students haven't been accustomed to associating subject matter with the surrounding phenomena/events, linking conceptual knowledge with procedural experience in solving problems, thus impacting on the low activity and learning outcomes of students. Therefore, it is necessary to develop teaching materials that are able to be independent and activate students in learning, namely a module based on problem based learning. This study aims to produce a physics module based on problem based learning to improve the metacognitive skills of students of class X SMA with valid, practical and effective criteria.

This type of research is development research using the Plomp development model consisting of preliminary research phases, development or prototyping phase, and assessment phase. The trial was conducted in class X IPA3 of SMAN 1 2 X 11 Enam Lingsung. Data collection instruments used in this study are validity sheets, practicality sheets, and metacognitive skill tests. Data analysis techniques use descriptive percentages, and test hypotheses about two different test averages.

The results of the research at the preliminary research phase stage are the results of curriculum analysis, the results of analysis of students, and the results of material analysis. The results of the development or prototyping phase stage is that the learning module meets valid criteria (content validity 0.89, construct validity 0.84, and language validity 0.84), then practically according to one-to-one evaluation (69.44), small group (74.82), and is very practical according to the teacher's response (81.77) and the students' responses (81.38) in the field test. Furthermore, the result of the assessment phase is that the learning module has a significant influence to improving the metacognitive skills of students obtained ( $t_{\text{count}} = 5.6345 > t_{\text{table}} = 1.6698$ ) with an average increase of 17.08. Based on the results of the research, it can be concluded that the development of physics modules based on problem based learning to improve metacognitive skills meet the criteria of valid, practical, and effective.

**Kata Kunci** : Learning module physics, *problem based learning* model, Metacognitive skills.

## ABSTRAK

**Ismiyati. 2018. “Pengembangan Modul Fisika Berbasis *Problem Based Learning* Untuk Meningkatkan Kemampuan Metakognitif Peserta Didik Kelas X SMA”. Tesis. Program Pascasarjana Universitas Negeri Padang.**

Penelitian ini didasarkan pada fakta di lapangan yakni, proses pembelajaran di kelas belum sesuai dengan harapan kurikulum 2013. Penerapan pendekatan dan metode/model pembelajaran serta sumber belajar masih belum optimal. Belum tersedianya sumber belajar yang dapat menstimulus kemampuan metakognitif peserta didik. Peserta didik belum dibiasakan mengaitkan materi pelajaran dengan fenomena/kejadian di sekitarnya, menghubungkan pengetahuan konseptual dengan pengalaman prosedural dalam menyelesaikan permasalahan, sehingga berdampak pada rendahnya aktivitas dan hasil belajar peserta didik. Oleh karena itu, perlu dikembangkan bahan ajar yang mampu memandirikan dan mengaktifkan peserta didik dalam belajar yaitu modul berbasis *problem based learning*. Penelitian ini bertujuan untuk menghasilkan modul Fisika berbasis *problem based learning* untuk meningkatkan kemampuan metakognitif peserta didik kelas X SMA dengan kriteria valid, praktis, dan efektif.

Jenis penelitian ini adalah penelitian pengembangan dengan menggunakan model pengembangan Plomp yang terdiri atas *preliminary research phase*, *development or prototyping phase*, dan *assesment phase*. Uji coba dilakukan di kelas X IPA<sub>3</sub> SMAN 1 2X11 Enam Lingsung. Instrumen pengumpulan data yang digunakan dalam penelitian ini adalah lembar validitas, lembar praktikalitas, dan tes kemampuan metakognitif. Teknik analisis data menggunakan deskriptif persentase, dan uji hipotesis tentang uji beda dua rata-rata.

Hasil penelitian pada tahap *preliminary research phase* yaitu hasil analisis kurikulum, hasil analisis peserta didik, dan hasil analisis materi. Hasil tahap *development or prototyping phase* yaitu modul pembelajaran memenuhi kriteria valid (validasi isi 0,89, validasi konstruk 0,84, dan validasi bahasa 0,84), kemudian praktis menurut *one-to-one evaluation* (69,44), *small group* (74,82), dan sangat praktis menurut respon pendidik (81,77) serta respon peserta didik (81,38) pada uji lapangan. Lebih lanjut, hasil tahap penilaian (*assesment phase*) adalah modul pembelajaran memberikan pengaruh yang signifikan terhadap peningkatan kemampuan metakognitif peserta didik didapatkan ( $t_{hitung} = 5,6345 > t_{tabel} = 1,6698$ ) dengan peningkatan rata-rata adalah 17,08. Berdasarkan hasil penelitian dapat disimpulkan pengembangan modul Fisika berbasis *problem based learning* untuk meningkatkan kemampuan metakognitif memenuhi kriteria valid, praktis, dan efektif.

**Kata Kunci** : modul pembelajaran Fisika, model *problem based learning*, kemampuan metakognitif