

## ABSTRAK

**MULIAWATI.** Pengembangan Buku Saku Bergambar Sebagai Sumber Belajar Mandiri Pada Materi Sistem Indra Di Kelas XI IPA SMA. Tesis. Medan: Program Pascasarjana Univeristas Negeri Medan, 2021.

Penelitian ini bertujuan untuk mengetahui: (1) hasil analisis kebutuhan siswa dan guru Biologi sehubungan dengan pengembangan buku saku bergambar sistem indra; (2) kelayakan isi dan penyajian; (3) kelayakan Bahasa; (4) kelayakan desain *layout*; (5) respon guru Biologi; (6) respon siswa; (7) efektivitas dari Buku Saku Bergambar Sistem Indra; (8) perbedaan hasil belajar kognitif siswa; dan (9) perbedaan kemandirian belajar Biologi siswa yang diajar dengan menggunakan Buku Saku Bergambar Sistem Indra dan tanpa menggunakan Buku Saku Bergambar Sistem Indra. Jenis penelitian ini adalah penelitian pengembangan (R and D) dengan model pengembangan Thiagarajan (4-D) yang terdiri dari empat tahap yaitu: *define* (pendefinisian), *design* (perancangan), *development* (pengembangan), dan *dissemination* (penyebaran). Uji efektivitas Buku Saku Bergambar Sistem Indra dilakukan di kelas XI IPA SMA Negeri 1 Percut Sei Tuan. Instrumen dalam penelitian ini ada lima yaitu instrumen penilaian validator ahli, instrumen penilaian (respon) guru Biologi, instrumen uji respon siswa, tes hasil belajar kognitif Biologi siswa materi sistem indra, dan angket kemandirian belajar Biologi siswa. Hasil penelitian ini diperoleh bahwa: (1) hasil analisis kebutuhan siswa dan guru Biologi menunjukkan bahwa sangat diperlukannya buku saku bergambar sistem indra untuk mendukung buku teks pelajaran Biologi yang ada; (2) kelayakan isi dan penyajian Buku Saku Bergambar Sistem Indra menurut ahli materi diperoleh rata-rata nilai secara beturut-turut yaitu 93,8 dan 98 dengan kategori sangat layak; (3) kelayakan Buku Saku Bergambar Sistem Indra menurut ahli Bahasa diperoleh rata-rata nilai 90,77 dengan kategori sangat layak; (4) kelayakan Buku Saku Bergambar Sistem Indra menurut ahli desain *layout* diperoleh rata-rata nilai 83,48 dengan kategori sangat layak; (5) respon guru Biologi terhadap Buku Saku Bergambar Sistem Indra adalah sangat layak dengan rata-rata nilai 99,58; (6) respon siswa terhadap Buku Saku Bergambar Sistem Indra adalah sangat layak dengan rata-rata nilai yaitu 97,78 (uji perorangan), 98 (uji kelompok kecil), dan 99,72 (uji lapangan terbatas); (7) efektivitas Buku Saku Bergambar Sistem Indra dilihat dari hasil belajar kognitif siswa pada pelajaran Biologi materi sistem indra, uji t (*t-test*), nilai *N-gain*, dan kemandirian belajar Biologi siswa, dengan hasil belajar kognitif siswa pada mata pelajaran Biologi materi sistem indra; (8) terdapat perbedaan signifikan antara hasil belajar kognitif siswa yang diajar dengan menggunakan buku saku bergambar dan tanpa menggunakan buku saku bergambar pada mata pelajaran Biologi materi sistem indra ( $t_{hitung} = 5,211$ ;  $P \leq 0,000$ ), diman rata-rata nilai *post-test* kelas eksperimen yaitu  $82,06 \pm 7,07$  ( $\bar{X} \pm SD$ ) dan rata-rata nilai *post-test* kelas kontrol yaitu  $72,65 \pm 7,16$  ( $\bar{X} \pm SD$ ); dan (9) terdapat perbedaan signifikan antara kemandirian belajar Biologi siswa yang diajar dengan menggunakan buku saku bergambar sistem indra dan tanpa menggunakan buku saku bergambar sistem indra ( $t_{hitung} = 6,055$ ;  $P \leq 0,000$ ), dimana rata-rata nilai kemandirian belajar Biologi siswa kelas eksperimen yaitu  $85,47 \pm 9,26$  ( $\bar{X} \pm SD$ ) dan rata-rata nilai kemandirian belajar Biologi siswa kelas kontrol yaitu  $70,17 \pm 10,60$  ( $\bar{X} \pm SD$ ).

*Kata Kunci:* Buku Saku Bergambar, Sistem Indra, Sumber Belajar Mandiri

## ABSTRACT

**MULIAWATI.** The Development of a Picture Pocket Book as a Source of Independent Learning in Indra's System Material in Class XI IPA SMA. Thesis. Medan: Postgraduate Program of the State University of Medan, 2021.

This research aims to determine: (1) the results of the analysis of the needs of students and Biology teachers in connection with the development of a pocket book with the sensory system; (2) content and presentation appropriateness; (3) language eligibility; (4) the feasibility of layout design; (5) Biology teacher response; (6) student responses; (7) the effectiveness of the Indra System Picture Pocket Book; (8) differences in student cognitive learning outcomes; and (9) differences in the learning independence of students taught using the Indra System Picture Pocket Book and without the Indra System Picture Pocket Book. This type of research is development research (R and D) with the Thiagarajan (4-D) development model which consists of four stages, namely: define, design, development, and dissemination. The effectiveness test of the Indra System Picture Pocket Book was conducted in class XI IPA of SMA Negeri 1 Percut Sei Tuan. There are five instruments in this study, namely the expert validator assessment instrument, the Biology teacher assessment (response) instrument, the student response test instrument, the student's Biology cognitive learning outcome test of the Indra system material, and the student's Biology learning independence questionnaire. The results of this research indicate that: (1) the results of the analysis of the needs of students and Biology teachers indicate that a pocket book with a sensory system picture is needed to support existing Biology textbooks; (2) the appropriateness of the content and presentation of the Indra System Picture Pocket Book according to the material expert, the mean values were respectively 93,8 and 98 in the very feasible category; (3) the feasibility of the Indra System Picture Pocket Book according to the linguist obtained an average value of 90,77 in the very feasible category; (4) the feasibility of the Indra System Picture Pocket Book according to the layout design expert obtained an average value of 83,48 in the very feasible category; (5) the response of the Biology teacher to the Picture Pocket Book of the Indra System was very feasible with an average value of 99,58; (6) student responses to the Indra System Picture Pocket Book were very feasible with an average value of 97.78 (individual test), 98 (small group test), and 99.72 (limited field test); (7) the effectiveness of the Indra System Picture Pocket Book is seen from the cognitive learning outcomes of students in the Biology subject of sensory system material, t test, N-gain value, and student learning independence of Biology, with student cognitive learning outcomes in Biology subjects. sense system matter; (8) there is a significant difference between the cognitive learning outcomes of students who are taught using pictorial pocket books and without using pictorial pocket books in the Biology subject of sensory system material ( $t_{count} = 5,211$ ;  $P \leq 0,000$ ), where the average grade post-test scores the experiment was  $82,06 \pm 7,07$  ( $\bar{X} \pm SD$ ) and the mean post-test score for the control class was  $72,65 \pm 7,16$  ( $\bar{X} \pm SD$ ); and (9) there is a significant difference between the independent learning Biology of students who are taught by using a pocket book with a sensory system and without using a pocket book with a sensory system ( $t_{count} = 6,055$ ;  $P \leq 0,000$ ), where the average value of students' Biology learning independence The experimental class is  $85,47 \pm 9,26$  ( $\bar{X} \pm SD$ ) and the average value of the independent learning Biology of the control class students is  $70,17 \pm 10,60$  ( $\bar{X} \pm SD$ ).

*Keywords:* Picture Pocket Book, Indra System, Independent Learning Resources