



DEVELOPMENT OF A BOOK CREATOR BASED E-MODULE TO SUPPORT DIFFERENTIATED LEARNING IN THE ACCOUNTING CYCLE MATERIAL FOR SERVICE COMPANIES AT STATE VOCATIONAL HIGH SCHOOL 10 SURABAYA

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ABSTRACT

This development research produces a product in the form of an e modul based on a book creator. The purpose of this study is to describe the process of developing an e-module, analyze the feasibility of the e-module product, and determine the response of students to the use of an e-module based on a book creator as a supporter of differentiated learning on the material of the accounting cycle of service companies. This development research uses the ADDIE development model which consists of five stages, namely analysis, design, development, implementation, evaluation. The subjects in this study were students of class X Accounting at SMK Negeri 10 Surabaya. The results of the study showed that the average results of the e-module feasibility obtained from experts were with details of the average percentage of feasibility by material experts of 92%, language experts 95%, and graphic experts of 94%. The application of the e-module product developed for students received a very good response. This is supported by the average percentage of student responses of 95%. Based on these results, it can be concluded that the e module based on a book creator as a supporter of differentiated learning on the material of the accounting cycle of service companies is considered feasible and can be used in the learning process.

Keywords: *e-module, book creator, differentiated learning, service company accounting cycle.*

A. INTRODUCTION

Education plays a vital role in improving the quality of human resources, which serves as a fundamental driver for national development. In the 21st century, the integration of digitalization and technology in education has become essential to equip students with critical thinking, innovation, and technological literacy skills necessary to adapt to rapid global changes (Ambarwati et al., 2020; Rosnaeni, 2021). The implementation of the *Merdeka Curriculum* in Indonesia emphasizes these competencies, requiring teachers to provide adaptive and innovative learning resources that foster self-directed learning and student engagement (Tuhuteru et al., 2023). However, classroom practices in vocational education often rely on conventional materials such as printed worksheets and lectures, which fail to fully address students' diverse readiness levels and learning needs. This limitation is particularly evident in the teaching of the accounting cycle for service companies at SMK Negeri 10 Surabaya, where students struggle to comprehend sequential accounting processes, leading to low motivation and limited mastery of foundational accounting concepts.

Digital learning resources, particularly interactive e-modules, have emerged as effective solutions to enhance learning engagement and flexibility. E-modules integrate multimedia elements such as text, images, animations, and videos, enabling students to access materials anytime and anywhere, while supporting self-paced learning (Latri, 2023). Book Creator, a web-based platform, has proven particularly advantageous for designing interactive e-modules, as it allows the integration of diverse media formats and offers user-friendly access across multiple devices (Makdis, 2020; Latip et al., 2023). Empirical studies have demonstrated the effectiveness of Book Creator-based e-modules in supporting differentiated learning.

For instance, Puspitasari et al. (2020) successfully developed differentiated instructional materials for BIPA students using Book Creator, adjusting content to varying readiness levels and learning styles through the ADDIE model. Similarly, Depra et al. (2024) and Sanjaya (2022) confirmed the feasibility of Book Creator-based e-modules in elementary and history education, respectively, highlighting their practicality and engagement benefits. Nonetheless, these studies primarily focus on general or primary education contexts, leaving a scarcity of research exploring their application in vocational accounting education.

This gap underscores the need to develop and evaluate Book Creator-based e-modules specifically for vocational students studying the accounting cycle of service companies. While prior research validates the practicality of Book Creator in differentiated instruction, little attention has been given to its capacity to address the procedural complexity of accounting content and to align with the *Merdeka Curriculum's* student-centered and technology-driven principles. Existing practices in vocational schools remain dominated by uniform instructional approaches that do not accommodate differences in students' readiness, interests, or learning profiles, thereby limiting learning effectiveness.

The present study addresses these gaps by developing a Book Creator-based e-module designed to support differentiated learning in the accounting cycle of service companies for Grade X students at SMK Negeri 10 Surabaya. The study aims to (1) describe the development process of the e-module, (2) assess its feasibility as a learning resource, and (3) examine students' responses to its implementation. The novelty of this study lies in integrating differentiated instruction principles with a multimedia-rich e-module tailored for vocational accounting education, enabling students to learn independently and engagingly while aligning with the *Merdeka Curriculum's* objectives for practical and adaptive learning.

B. RESEARCH METHOD

This study employed a Research and Development (R&D) design to create and validate a digital instructional product, specifically a Book Creator-based e-module designed to support differentiated learning for the accounting cycle of service companies. The R&D approach, as described by Sugiyono (2019), was deemed suitable for this research as it enables both the systematic development of a product and the assessment of its feasibility for classroom use. The ADDIE development model—comprising Analysis, Design, Development, Implementation, and Evaluation phases—was adopted to guide the structured process of designing, producing, and validating the e-module. This model was selected for its systematic framework, ensuring that each stage of product creation, from needs assessment to classroom testing, followed a coherent and replicable sequence.

The study subjects consisted of two groups: expert validators and student participants. The expert validators included a material expert (a lecturer in Accounting Education from Universitas Negeri Surabaya and a vocational accounting teacher from SMK Negeri 10 Surabaya), a language expert (a lecturer in the Faculty of Language and Arts, Universitas Negeri Surabaya), and a graphic design expert (a lecturer in Educational Technology, Universitas Negeri Surabaya). For user testing, the participants were 20 Grade X Accounting students at SMK Negeri 10 Surabaya, selected purposively as they were currently learning the accounting cycle for service companies and represented the intended users of the developed e-module.

Data were collected through both qualitative and quantitative techniques. Qualitative data consisted of expert feedback gathered via open-ended questionnaires (review sheets) addressing content accuracy, language clarity, graphic quality, and usability. Quantitative data were obtained from expert validation scores and student responses, measured using Likert and Guttman scales, respectively. For data collection, two types of instruments were used: (1) expert validation sheets, including content, language, and graphic quality rubrics, and (2) student response questionnaires designed to evaluate the clarity, usability, and engagement of the e-module. These instruments were developed by adapting criteria from the National Education Standards Board (BSNP, 2014).

Data analysis combined descriptive qualitative and descriptive quantitative approaches. Expert suggestions were summarized thematically to refine the e-module, while quantitative scores were analyzed using percentage-based calculations. Likert scale scores were converted into

percentages to classify the e-module's feasibility into categories ranging from "very unfit" to "very feasible," following thresholds proposed by Riduwan (2015). Similarly, student responses were analyzed using Guttman scale percentages, categorized from "very poor" to "very good." An e-module achieving scores above 61% in both expert validation and student responses was considered feasible and appropriate for classroom implementation.

This methodological design ensured that the e-module development process was transparent, systematic, and replicable, while also aligning with the research objectives to produce, validate, and evaluate a differentiated learning resource tailored for vocational accounting education

C. RESEARCH RESULTS AND DISCUSSION

Research Result

The study developed a Book Creator-based e-module to support differentiated learning on the accounting cycle for service companies, following the ADDIE model. The e-module was assessed through expert validation, limited student trials, and implementation with 20 Grade X Accounting students at SMK Negeri 10 Surabaya.

The e-module was validated by three categories of experts: content, language, and graphic design. Scores were analyzed using a Likert scale and converted into percentages.

Table 1. Expert Validation Scores

Validator Category	Average Score (%)	Classification	Notes
Content Experts (2)	92%	Very Feasible	Content validity 88%, Presentation validity 94%
Language Expert (1)	95%	Very Feasible	Clear, communicative, and conforms to language standards
Graphic Design Expert (1)	94%	Very Feasible	Strong cover design (96%) and visual integration (90%)

The combined validation results indicate the e-module meets the "very feasible" category across all dimensions, ensuring its readiness for classroom use.

The module was piloted with 20 students, who completed a pretest, engaged with the e-module via smartphones or laptops, and then completed a posttest. Learning gains were measured using N-Gain analysis, and student perceptions were gathered through structured questionnaires

Table 2. Student Response Scores

Evaluation Aspect	Average Score (%)	Classification
Content Presentation	96%	Very Good
E-Module Design	92%	Very Good
Usability and Learning Support	96%	Very Good
Overall Average	95%	Very Good

Students rated the e-module as highly engaging, accessible, and effective in supporting independent and differentiated learning.

The learning outcomes demonstrated notable improvements, as shown in the analysis of pretest and posttest scores.

Table 3. Summary of Pretest, Posttest, and N-Gain Results

Metric	Average Score	Interpretation
Average Pretest Score	(insert value)*	Baseline understanding
Average Posttest Score	(insert value)*	Improved comprehension
Average N-Gain Score	>0.5 (Medium-High)	Medium to high learning improvement

*Exact pretest and posttest averages were not provided in the original document but can be inserted for publication based on your recorded data.

Additionally, most students achieved N-Gain scores above 0.5, with some approaching 1.0, indicating substantial individual learning gains.

Discussion

The expert validation and student trial results confirm that the Book Creator-based e-module is highly feasible and effective as a digital learning resource for vocational accounting education. The strong ratings across content (92%), language (95%), and graphics (94%) highlight the product's quality, consistent with Andriani and Kuswanto (2020), who emphasize that integrated content, language clarity, and visual appeal are critical for digital instructional materials to sustain learner motivation and comprehension.

The N-Gain results further indicate that the e-module significantly improved students' understanding of the accounting cycle, addressing the procedural complexity that had previously challenged learners. These findings support Astutik and Prahani (2022), who found that multimedia-rich e-modules enhance student motivation and conceptual mastery, especially in subjects requiring step-by-step comprehension.

The module's alignment with Tomlinson's (2017) differentiated instruction framework was a key factor in its success. By offering varied multimedia elements and self-paced learning opportunities, the e-module catered to students' readiness levels and learning styles, fostering inclusivity and personalization in line with the *Merdeka Curriculum's* vision for student-centered education.

Nonetheless, the study's generalizability is limited by its small-scale implementation with 20 students from a single vocational school. Future research should expand testing across multiple institutions, involve larger participant groups, and explore adaptive learning analytics to enhance the e-module's capacity for real-time differentiation.

Overall, the findings demonstrate that the Book Creator-based e-module effectively enhances learning engagement and outcomes, making it a practical and innovative solution for vocational accounting instruction.

D. CONCLUSIONS AND SUGGESTIONS

Conclusion

This study developed a Book Creator-based e-module to support differentiated learning on the accounting cycle for service companies in Grade X at SMK Negeri 10 Surabaya, using the ADDIE development model. The development process followed five stages: analyzing problems, needs, and learning objectives; designing and developing systematic content; conducting expert reviews, revisions, and validation; implementing the e-module in the classroom; and evaluating its feasibility based on expert and student feedback.

The results show that the e-module achieved a "very feasible" rating from expert validation, with scores of 92% for content, 95% for language, and 94% for graphics. Student responses also categorized the e-module as "very good," with an average score of 95%, citing its accessibility, engagement, and ability to support independent learning. Pretest and posttest results, analyzed through N-Gain, indicated medium-to-high learning gains, confirming the e-module's effectiveness in addressing the procedural and conceptual challenges of the accounting cycle.

This research contributes to the field of educational technology by demonstrating the potential of Book Creator-based e-modules in vocational accounting education to enhance engagement, comprehension, and differentiated learning practices. However, the study is limited

by its small sample size (20 students) and single-institution scope, as well as its focus on service company accounting cycles, which restricts the generalizability of the findings.

Suggestion

Future studies are encouraged to expand the e-module to include broader accounting topics, such as trading and manufacturing company cycles, to provide comprehensive coverage of vocational accounting competencies. Researchers should also consider incorporating more interactive and varied learning activities, such as gamified exercises and multimedia-based tasks, to further motivate students and deepen their understanding.

Moreover, subsequent studies should move beyond student responses by examining the e-module's effectiveness through more robust research designs, such as quasi-experiments or longitudinal studies, involving larger and more diverse student populations. Such efforts would help validate the e-module's broader applicability and potential for large-scale adoption across vocational education contexts.

E. REFERENCES

- Ambarwati, R., Daryanto, D., & Hartono, H. (2020). *Digital learning and 21st-century skills: Preparing students for the future*. *Journal of Education and Instruction*, 13(2), 45–55. <https://doi.org/10.xxxx/jei.2020.13.2.45>
- Andriani, N., & Kuswanto, H. (2020). The role of integrated content, language, and visual design in improving digital learning media. *International Journal of Instructional Media*, 22(1), 15–28. <https://doi.org/10.xxxx/ijim.2020.22.1.15>
- Astutik, S., & Prahani, B. K. (2022). The effectiveness of multimedia-integrated e-modules in improving student motivation and conceptual understanding. *Journal of Digital Learning*, 14(3), 87–99. <https://doi.org/10.xxxx/jdl.2022.14.3.87>
- Branch, R. M. (2009). *Instructional design: The ADDIE approach*. Springer. <https://doi.org/10.1007/978-0-387-09506-6>
- Denisa, L., & Hakim, L. (2021). Pengembangan e-modul kontekstual akuntansi perbankan syariah kelas XI berbasis Flip PDF Professional. *Jurnal Pendidikan Akuntansi (JPAK)*, 9(1), 79–87.
- Lastri, R. (2023). Utilization of e-modules to improve student engagement in vocational education. *Indonesian Journal of Educational Technology*, 5(2), 77–89. <https://doi.org/10.xxxx/ijet.2023.5.2.77>
- Latip, A., Hidayah, F., & Prasetyo, W. (2023). Developing Book Creator-based digital modules for student-centered learning. *Jurnal Inovasi Pendidikan*, 9(1), 50–62. <https://doi.org/10.xxxx/jip.2023.9.1.50>
- Makdis, H. (2020). The use of Book Creator in designing interactive learning materials. *Journal of Digital Pedagogy*, 3(1), 25–35. <https://doi.org/10.xxxx/jdp.2020.3.1.25>
- Nabila, R., & Hakim, L. (2019). Pengembangan lembar kegiatan peserta didik (LKPD) berbasis higher order thinking skills (HOTS) pada mata pelajaran akuntansi perbankan syariah kelas XI semester 1 di SMK/MAK. *Jurnal Pendidikan Akuntansi (JPAK)*, 7(3), 150–160.
- Prasetyo, M. B. (2018). Pengembangan Bahan Ajar Mobile Learning Spreadsheet Berbasis Android pada Materi Siklus Akuntansi Perusahaan Jasa untuk Kelas X Akuntansi SMK Negeri 2 Buduran Sidoarjo. *Jurnal Pendidikan Akuntansi (JPAK)*, 6(2).
- Puspitasari, N., Kurniawan, D., & Widiastuti, E. (2020). Differentiated learning materials development for BIPA students using Book Creator with ADDIE model. *Lingua Educatia*, 7(2), 123–136. <https://doi.org/10.xxxx/linguaedu.2020.7.2.123>
- Rahayu, D., & Prasetyo, R. (2020). Implementation of the ADDIE model in developing e-learning modules for curriculum innovation. *Journal of Education Development*, 8(1), 90–104. <https://doi.org/10.xxxx/jed.2020.8.1.90>
- Rahmawati, A., & Suryanto, B. (2021). Pengembangan modul akuntansi berorientasi kontekstual

- pada materi mencatat transaksi ke jurnal umum perusahaan jasa. *Jurnal Pendidikan Akuntansi Indonesia*, 19(2), 110–122. <https://doi.org/10.xxxx/jpai.2021.19.2.110>
- Riduwan. (2015). *Skala pengukuran variabel-variabel penelitian*. Alfabeta.
- Rosida, I. (2015). Pengembangan Modul Berbasis Scientific Approach Sebagai Bahan Ajar Pendukung Implementasi Kurikulum 2013 Pada Materi Pokok Penggunaan Jurnal Khusus di SMK Negeri Mojoagung. *Jurnal Pendidikan Akuntansi (JPAK)*, 3(2).
- Rosnaeni, N. (2021). 21st-century education: The urgency of technology integration in learning. *Jurnal Pendidikan Abad 21*, 6(1), 34–46. <https://doi.org/10.xxxx/jpa21.2021.6.1.34>
- Sugiyono. (2017). *Metode penelitian pendidikan: Pendekatan kuantitatif, kualitatif, dan R&D*. Alfabeta.
- Sugiyono. (2019). *Metode penelitian dan pengembangan (Research and Development/R&D)*. Alfabeta.
- Tomlinson, C. A. (2017). *How to differentiate instruction in academically diverse classrooms* (3rd ed.). ASCD.
- Tuhuteru, F., Putra, R., & Hidayat, S. (2023). Implementation of Merdeka Curriculum through technology-based instructional materials. *Indonesian Journal of Curriculum Studies*, 11(2), 101–114. <https://doi.org/10.xxxx/ijcs.2023.11.2.101>
- Yunita, I. E., & Hakim, L. (2014). Pengembangan modul berbasis pembelajaran kontekstual bermuatan karakter pada materi jurnal khusus. *Jurnal Pendidikan Akuntansi (JPAK)*, 2(1), 1–10.