Hipotenusa: Journal of Mathematical Society
Volume 7 Issue 2 Year 2025
ISSN: 2716-3156
Website: https://ejournal.uinsalatiga.ac.id/index.php/hipotenusa/index

Development of a Flipbook-Based E-Module on Linear Programming for Mathematics Education Students

Zuida Ratih Hendrastuti [1]*, Yesi Franita [2], Sherla Salsabila Adawiyah [3], Bagas Ardiyanto [4]

[1, 2] Universitas Tidar, Jalan Kapten Suparman 39, Magelang, Indonesia
[3] Universitas Sebelas Maret, Jalan Ir. Sutami No 36, Surakarta, Indonesia
[4] Universitas Widya Dharma, Jalan Ki Hadjar Dewantara, Klaten, Indonesia
*Corresponding author. E-mail: zuidaratihh@untidar.ac.id

DOI: 10.18326/hipotenusa.v7i2.5104

Article submitted: September 15, 2025
Article reviewed: November 2, 2025
Article published: December 30, 2025

Abstract

This study aims to develop a flipbook-based e-module on linear programming material for students that meets the criteria of validity, practicality, and effectiveness, making it suitable for learning. This study uses the Research and Development (R&D) method with the ADDIE development model which includes five stages, namely: Analysis, Design, Development, Implementation; and Evaluation. The research instruments included an expert validation sheet, a student response questionnaire, and a learning outcome test. The e-module's validity was assessed by subject-matter, media, and language experts using a 1–5 Likert scale, yielding an average score of 126 (max 135), indicating very high validity. Practicality was measured through student responses on ease of use, display, and learning benefits, with 52.5% rating it as very practical and 47.5% as practical. The e-module's effectiveness was assessed based on student learning outcomes, with a mean of 90.25 and 97.5% achieving scores above the Minimum Completion Level (≥75). The results indicate that this flipbook-based e-module is valid, practical, and effective for use in linear programming lectures. Consequently, this e-module has the potential to improve the quality of mathematics learning, particularly in understanding linear programming concepts, and to encourage student independence in learning through an interactive, accessible presentation of materials.

Keywords: e-modules, linear programs, flipbook

INTRODUCTION

Technological advancements are accelerating rapidly in the context of globalisation This development makes it easy to access knowledge anytime and anywhere. This affects the concept of the lesson, which is more complex. In essence, learning is based on the

communication process. The communication process should be built in two directions: lecturer to student and student to lecturer. Besides that, learning requires suitable teaching materials to help achieve the criteria for completion. Magdalena et al. (2020) define teaching materials as learning aids comprising content, instructional methods, limitations, and evaluation assessments, all organized to facilitate comprehensive learning outcomes.

Teaching materials often used in the field are books or modules in hardcopy form. Modules have essential components that influence the learning process because they can make it easier for someone to learn independently (Nayazik & Rani, 2023). Modules can be printed or electronic. The print module is a module that is used offline and is in the form of a hardfile. According to Priyanthi et al. (2017), printed modules have several weaknesses: because they are heavy, students rarely carry them, the appearance of printed modules seems ordinary or less attractive. Apart from that, printed modules are also not durable and cannot add audio or video.

Teaching materials with innovative value can be made by lecturers using sophisticated technology such as computers, which can produce products that are easy to use anytime and anywhere and have aesthetic or attractive value. This teaching material is called an electronic module. E-module is digital media that can be accessed via a computer with various combinations of required software. This module contains coherent and interesting material tailored to the user's competencies and needs (Ramadanti et al., 2021). E-modules are capable of displaying text, images, animations, and videos through electronic devices such as computers (Erawati et al., 2022).

According to Tsai et al. (2018), using e-modules can make it easier for educators to monitor lesson materials that are appropriate to the students' ability levels. The learning process is carried out not only in the classroom but also outside the classroom. Students more often use smartphones to carry them anywhere. This is because, in this situation, students are more interested in searching for material via smartphone compared to searching through printed books (Ulya & Sidqi, 2020). Lecturers should be able to take advantage of this opportunity to improve the quality of learning.

Making e-modules can use software or applications. One of the software in question is Kvisoft Flipbook Maker, which can convert teaching materials or modules into an interactive digital format as a flipbook. This software facilitates the teaching and learning process by supporting not only text but also the integration of animation, video, and audio, thereby enhancing engagement and reducing the monotony of traditional learning methods. E-modules developed using Kvisoft Flipbook Maker are accessible offline and are cost-effective due to their availability as digital files (Susanti, 2015). The use of this software-based flipbook can also increase students' learning motivation and contribute to improving achievement or learning outcomes (Fadillah et al., 2021). Agreeing with this, Wibowo & Pratiwi (2018) said that using flipbooks had an excellent response from students learning mathematics.

The higher education curriculum is a collection of plans and provisions that include objectives, content, modules, and methods to guide learning activities to achieve higher education goals (Kusumawardani et al., 2024, p. 20). The learning outcomes of study program

graduates have been adjusted to the national standards for higher education in 2024, namely a generation with superior human resources, a productive and intellectually sound generation, a mature democracy, good governance, and social justice. This aims to support the vision of Golden Indonesia 2025 (Kusumawardani et al., 2024, p. 3). Linear Programming is a required course for students enrolled in the Mathematics Education Study Program at Tidar University. It is taken in the sixth semester and has two credits. In this course, students are expected to understand the concept of linear programming in depth because this material will be used in their teaching at school. Some topics studied include the history of Linear Programming, problem modeling, various solution methods, sensitivity analysis, and various transformation models.

Findings from interviews with several students indicated that they were able to follow lectures and comprehend the lecturer's explanations during class sessions. However, when faced with questions that are not routine, they have difficulty finding the answers, especially when the questions are in the form of story questions. Most of them are confused when making a mathematical model. This may be due to the limited visual-based teaching materials/modules. There are no lecturers who facilitate learning using software-based modules, and this course module is still restricted. The same thing was also expressed by Widyanesti P et al. (2020) that problems that often arise in Linear Program material include students' difficulties in modeling mathematical problems, determining feasible areas based on several linear program constraints, and determining lines of inquiry. Meanwhile, in the learning process, some students wait for explanations from the lecturer, do not bring reference books recommended since the initial meeting, are reluctant to do practice questions in front of the class, and only do practice questions after receiving instructions from the lecturer. Based on these problems and the importance of e-modules in increasing student understanding, researchers are interested in developing a flipbook-based Linear Program e-module for Tidar University Mathematics Education Study Program students.

METHODS

Types of research

This research and development (R&D) study seeks to produce a high-quality product that is valid, practical, and effective. The resulting product is a flipbook-based e-module for Linear Programming. The research and development process employed the ADDIE model, comprising five primary stages: Analysis, Design, Development, Implementation, and Evaluation. Dousay & Branch (2023, p. 5) stated that in learning development, the main thing is the ADDIE process, which includes analysis of student needs, a package with designs used for effective, efficient, and consistent learning, development and arrangement of learning materials, implementation and implementation of evaluations in formative and summative forms.

Research Subjects

The study was conducted within the Mathematics Education Study Program at Tidar University. Participants consisted of 40 students enrolled in class 01 during the 2022/2023 academic year.

Development Procedure

The following describes the five stages of ADDIE Rayanto & Sugiyanti (2020, pp. 34–38), which have been modified in this research. At the analysis stage, the researcher conducted a needs analysis and an analysis of student characteristics. The needs analysis aims to identify the problems associated with the linear program lecture process. To be right on target, it is necessary to develop flipbook-based e-modules and meet the needs of the field. On the other hand, the analysis of student characteristics aims to identify the attributes of students in the Mathematics Education Study Program at Tidar University, which are based on the level of education according to student development theory.

The subsequent phase is the design stage. During this phase, the e-module was developed through a series of sequential steps. The first stage is compiling an e-module requirements map; the second is determining the e-module framework that will be created by compiling an outline of the e-module and the systematic preparation of the material; the third is designing a flipbook-based Linear Program e-module; the fourth is collecting various references.

Next, the development stage is a form of realization of the previous stage, namely design, resulting in an electronic prototype of learning modules and test instruments. Before being implemented in the field, electronic learning modules and test instruments must first be validated by a validator or team of experts; there were two validators for this research. After being validated by the validator, the researcher revised the e-module and test instrument from the validator's input to make it suitable for implementation in the field. Apart from revising, researchers also analyzed the validation results from the validators. This is done so the e-module and test instruments can know their validity criteria.

The implementation stage involved deploying the validated and revised e-module in the Mathematics Education Study Program at Tidar University for students enrolled during the 2022/2023 academic year. The purpose of this implementation was to collect data to evaluate the practicality and effectiveness of the e-module in supporting learning within Linear Program courses.

The fifth stage is the evaluation stage. In this final process, the e-module implemented in the classroom is evaluated to assess validity, practicality, and effectiveness. Practicality is measured through student assessments of the developed Linear Program e-module. Effectiveness is determined by the percentage of students achieving a Minimum Completeness Criteria score of at least 80 percent.

Data Collection Instruments and Techniques

There were 3 data collection instruments used, namely validity, practicality, and effectiveness assessment instruments. Validity assessment instruments consist of two types: validity assessment instruments for e-modules and validity assessment instruments

for tests. The validity assessment instrument for the e-module is in the form of a validation questionnaire, which contains the suitability of the Linear Program course content/material, the suitability of presentation using a flipbook, and the suitability of language. Meanwhile, the practicality assessment instrument used is a student assessment questionnaire consisting of a learning process with a scale of 5 types, namely delightful, enjoyable, quite enjoyable, less enjoyable, and very unpleasant; module assessment on a 5 scale, namely apparent, clear, quite clear, not clear, and very unclear; assessing the appearance of the module on a five scale, namely very attractive, attractive, reasonably attractive, less attractive, very less attractive; as well as understanding concepts with a rating scale consisting of 5 types, namely beneficial, helpful, quite helpful, not very helpful, and not very helpful (Riduwan, 2018, p. 13). Apart from that, this assessment instrument also contains comments and suggestions that students can fill in. The effectiveness assessment instrument is a posttest in the form of an essay with five questions, max 4 and min 0 score.

Data collection for this research utilized validation sheets, questionnaires, and test instruments. The resulting data were analyzed to evaluate the quality of the flipbook-based e-module, specifically examining its validity, practicality, and effectiveness.

Data Analysis Techniques

Validity Data

Validation data were collected using questionnaires that assessed the appropriateness of the Linear Program course content, the effectiveness of the flipbook-based e-model presentation, and the clarity of language. In addition to e-modules, test instruments undergo validation. A statement is deemed valid if the validator's assessment meets the minimum criteria for use with revisions and achieves an average score that satisfies the minimum requirements for both modules and test instruments (Sugiyono, 2018, p. 155).

In this study, the validity of the instrument was determined based on the results of the validators' assessment of each statement item using a Likert scale. To determine the level of validity, the maximum and minimum scores are calculated using the formula: maximum score (number of items x highest score) and minimum score (number of items x lowest score). Furthermore, the determination of the validity level category is carried out using the interval division method, using the formula maximum score – minimum score divided number of category (Riduwan, 2018). The following are details of the validity criteria.

Table 1. E-Module Validity Criteria

Validity	Score Intervals	Criteria
E-modules	$X > 113,4$	Very good
	$91,8 < X \leq 113,4$	Good
	$70,2 < X \leq 91,8$	Pretty good
	$48,6 < X \leq 70,2$	Not good
	$X \leq 48,6$	Very Not Good

Table 2. Test Instrument Validity Criteria

Validity	Score Intervals	Criteria
Test	$X > 28,8$	Very good
	$21,6 < X \leq 28,8$	Good
	$14,4 < X \leq 21,6$	Pretty good
	$7,2 < X \leq 14,4$	Not good
	$X \leq 7,2$	Very Not Good

Practicality Data

The practical analysis determines whether the e-module we create meets practical aspects. The student assessment questionnaire for the e-module we developed uses a scale of five. This assessment is carried out at the end of the learning activities in the Linear Program course (after taking the test). Next, each student's score is averaged and converted into a statement to determine a practical assessment, with details:

Table 3. Practical Criteria for Student Assessment

The Assessed	**Score Intervals**	**Criteria**
Student Assessment Instrument	$X > 71,4$	Very good
	$58,8 < X \leq 71,4$	Good
	$46,2 < X \leq 58,8$	Pretty good
	$33,6 < X \leq 46,2$	Not good
	$X \leq 33,6$	Very Not Good

The development of e-modules for Linear Program courses was considered practical when at least 75% of students achieved a minimum of good criteria (Sugiyono, 2018, p. 155).

Effectiveness Data

The effectiveness level is determined based on students' posttest results regarding learning outcomes in the Linear Program course. The posttest consists of 5 essay questions with a score max 4 and min 0. The scores are then tabulated using the formula number of items divided by the highest score and then converted to 100. In this study, the module created by the researcher was declared effective if the student could achieve the Minimum Completeness Criteria score percentage, where in this course was 75, which is more than or equal to 80% (Morrison et al., 2021, p. 286).

RESULTS & DISCUSSION

The present research and development (R&D) study employs the ADDIE development model, which consists of Analysis, Design, Development, Implementation, and Evaluation. The primary output is a flipbook-based electronic module (e-module) on Linear Program material, designed for easy access via students' smartphones. The following section presents the results of the research and development process.

Analysis

In the Analysis process, researchers carry out an analysis of student needs and characteristics. The analysis is intended to identify problems related to the Linear Program lecture process. It is necessary to develop flipbook-based e-modules and meet needs in the field so that they are right on target and provide benefits. This analysis seeks to identify the characteristics of students in the Mathematics Education Study Program at Tidar University, based on educational level as defined by student development theory.

The condition obtained is that there are no modules for linear programming courses which are suitable for use in current online lectures, so students need electronic modules (e-modules) which can help students understand the concept of linear programming so that they have no difficulty in solving problems in linear programming problems related to students' daily lives. In linear programming courses so far, lecturers only provide printouts in the form of short material at each meeting. They have not facilitated students to construct their knowledge because the printouts are focused on providing information directly, so students' problem-solving abilities are also lacking.

The characteristics of Untidar Mathematics Education Study Program students for the 2022/2023 academic year, are varied from those with high, medium and low academic abilities. This condition is influenced by social, economic and regional factors for each student. This research has observed the learning process in classes 01, 02, and 03, each containing 40 students. Each class has a different ability level, and there are deficiencies in the active aspect.

Based on these conditions, a solution is needed in the form of e-module teaching media that can meet students' learning needs according to their ability level and various characteristics or learning profiles. The division of material in the Linear Program e-module created is the simplex method, sensitivity analysis, and transportation models.

Design

At this stage, an e-module design is developed for use in the research class. The design process includes: 1) identifying the subject matter to be presented, 2) determining the intended learning outcomes, and 3) preparing an outline of the e-module content using a flipbook format; 4) Preparing reference sources; 5) Writing and preparation format. Apart from designing the e-module, the researcher also designed the test instrument that will be used at the end of the lesson.

Development

The e-module that has been designed is then developed. Corrections and suggestions from validators have been received to improve the Linear Program e-module. Overall, the validation results from the two validators show that the e-module developed is suitable or valid for use with several revisions. The validation process aims to evaluate the quality of lecture e-modules using assessments provided by validators. Table 4 presents the results of the overall validity analysis.

Table 4. Results of Validity Analysis of E-modules and Test Instruments

Validated	Validator I	Validator II	Average	Category
E-modules	125	127	126 (Max 135)	Very Good
Test	29	27,5	28,25 (Max 36)	Good

The findings demonstrate that the developed e-module is classified as outstanding. This suggests that the quality of the flipbook-based e-module is valid and appropriate for implementation. Some input from the validators to improve the quality of the e-module includes adjusting the format to suit the latest version, improving instructions for working on questions, and correcting several typing errors, including typos. Subsequently, the e-module was revised in accordance with the provided suggestions. After the revision was completed, the Linear Program e-module, which was the object of research, was implemented in the class. The following displays a flipbook-based e-module for the Linear Programming course.

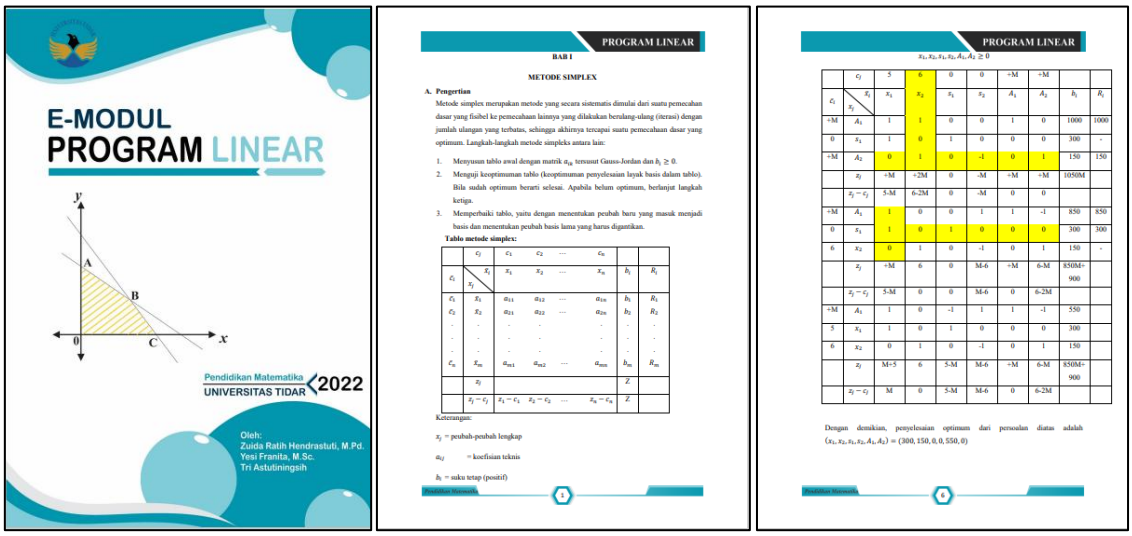

Figure 1. Linear Program Flipbook-Based E-module

Implementation

The implementation phase should have been carried out in all classes, including classes 01, 02, and 03, semester 6 of the 2021/2022 academic year; however, due to obstacles and unfavourable conditions, the implementation of this e-module was carried out in class 01, semester 7 of the 2022/2023 academic year, with a total of 40 students having received the Linear Program material. The application is carried out in online learning activities and uses a post-test as the final data collection. At this stage, the data consists of student evaluations of the Linear Program e-module and the results of student learning assessments following the implementation of the e-module.

The practicality of the mathematics e-module was evaluated through student assessments. Forty students participated in this evaluation. The purpose of this assessment was to determine whether the Linear Program e-module is suitable for implementation in lectures. According to the results, 21 students (52.5%) rated the e-module as very good,

while 19 students (47.5%) rated it as good. An e-module is considered practical if at least 75% of students provide a rating of good or higher. Therefore, the developed e-module meets the criteria for practical use by students.

Evaluation

The criteria for effective e-modules were established based on student learning test results in linear programming lectures. The effectiveness of the Linear Program e-module developed by the researchers was evaluated using these test results. The average class score was 90.25, and 97.5% of students achieved or exceeded the minimum mastery criterion (KKM) of 75. Complete details are presented in Table 5.

Table 5. Results of Student Assessment of E-Modules

Score	Number of Students	Percentage
100	6	15%
95	11	27,5%
90	10	25%
85	8	20%
80	3	7,5%
75	1	2,5%
70	1	2,5%

The module is said to be effectively used if the percentage of students who achieve the Minimum Completeness Criteria (KKM) score, where the KKM in this course is 75, which is more than or equal to 80% (Morrison et al., 2021), so based on this, the e-module that this researcher has created can be said to be effectively used in Linear Program lectures. The data indicate that the flipbook-based e-module for the Linear Program course is an appropriate teaching material for learning activities among lecturers and students in the sixth semester of the Tidar University Mathematics Education Study Program. Furthermore, this e-module is suitable for use in both public and private universities.

The flipbook-based e-module in the Linear Program course makes it easier for students to learn independently. This helps students understand the material in lectures and outside lectures. The topics in the e-module are organized systematically, facilitating a clearer understanding of the relationships among the presented materials. The e-module also instructs students to discover concepts and solve problems independently. This finding aligns with Sriyanti et al. (2020), who report that appropriately designed e-modules facilitate independent student learning.

In addition to supporting independent learning, flipbook-based e-modules for the Linear Programming course are also designed with an attractive design to increase student motivation. Visually engaging design encourages students to experience the new atmosphere presented in the e-module. Furthermore, a gorgeous design in an e-module can help clarify parts of the material that are considered difficult. This finding aligns with the perspective of Situmorang et al. (2020), who argue that developing e-modules with Kvisoft Flipbook Maker can enhance learning motivation and support student achievement.

The material compiled in this flipbook-based e-module is on linear programming. This material is complex because it requires strong problem-solving skills. Visualisation in this material is also critical, considering that linear programming material is related to problem-solving techniques for a problem model. Therefore, the role of technology is constructive in effective learning strategies. The e-module created on this Linear Program material has a positive impact because it serves as a learning material integrated with technology. Learning can provide real-life experiences because the e-module is linked to problems in everyday life. Therefore, students can focus more on deepening the concepts presented. This aligns with Nurhayati & Dadi (2020) opinion that applying technology to linear programming material has a positive and relevant impact, as it requires reasoning and creative thinking in problem-solving.

CONCLUSION

The research findings indicate that 1) the flipbook-based Linear Program e-module demonstrates validity, practicality, and effectiveness; 2) Regarding validity, assessments by two validators resulted in an average score of 126, placing the e-module in the outstanding category. This indicates that the developed module meets established validity criteria. 3) In terms of practicality, student assessments showed that 52.5% rated the e-module as outstanding and 47.5% rated it as good. Thus, this e-module is declared practical to use; 4) From the aspect of effectiveness, student learning outcomes show a classical average of 90.25, with 97.5% of students getting a score equal to or higher than the KKM (≥ 75), so that the e-module can be said to be effective. These results indicate that the e-module developed is suitable for use as a learning resource that meets the standards of validity, practicality and effectiveness. Therefore, the e-module demonstrates effectiveness in supporting instruction in Linear Programming lectures. As a suggestion, further research could use an experimental design with a larger sample size to obtain more accurate results.

REFERENCES

Dousay, T. A., & Branch, R. M. (2023). *Survey of Instructional Design Models: Sixth Edition*. Brill.

Erawati, N. K., Purwati, N. K. R., & Saraswati, I. D. A. P. D. (2022). Pengembangan e-modul logika matematika dengan heyzine untuk menunjang pembelajaran di SMK. *Jurnal Pendidikan Matematika (JPM)*, *8*(2), 71–80. https://doi.org/10.33474/jpm.v8i2.16245

Fadillah, A., Nopitasari, D., & Bilda, W. (2021). E-book learning media development based on kvisoft flipbook maker. *Kreano: Jurnal Matematika Kreatif-Inovatif*, *12*(2), 312–322.

Kusumawardani, S. S., Wulandari, D., Arifin, S., Cahyono, E., Wastutiningsih, S. P., Hertono, G. F., Slamet, A. S., Wasityastuti, W., Santoso, B. J., Yuniarti, A., Junaidi, A., Soetanto, H., Utama, I. M. S., Syam, N. M., Putra, P. H., Rahmawati, A., Fajri, F., Anggraeni, D., Zuliansyah, A., Yulianto, Y., & Julyan, B. S. (2024). *Panduan*

penyusunan kurikulum pendidikan tinggi. Direktorat Jenderal Pendidikan Tinggi, Riset, dan Teknologi.

Magdalena, I., Sundari, T., Nurkamilah, S., Nasrullah, & Amalia, D. A. (2020). Analisis bahan ajar. *Nusantara: Jurnal Pendidikan Dan Ilmu Sosial*, *2*(2), 311–326. https://doi.org/10.36088/nusantara.v2i2.828

Morrison, G. R., Ross, S. J., Morrison, J. R., & Kalman, H. K. (2021). *Designing effective instruction eighth edition*. John Wiley & Sons Inc.

Nayazik, R., & Rani, H. A. D. (2023). Development of mathematics teaching materials on tri-n-based variable linear equations and inequalities. *Journal of Medives: Journal of Mathematics Education IKIP Veteran Semarang*, *7*(1), 175–183. http://dx.doi.org/10.31331/medivesveteran.v7i1.2589

Nurhayati, & Dadi, O. (2020). Development of module linear program based problem solving assisted Qsb application. *Daya Matematis: Jurnal Inovasi Pendidikan Matematika*, *8*(2), 143–148. http://dx.doi.org/10.26858/jdm.v8i2.14029

Priwantoro, S. W., Arif, B., & Fahmi, S. (2020). Penerapan pembelajaran dengan e-modul berbasis kvisoft flipbook maker untuk mata kuliah program linear. *At-Taqaddum*, *12*(1), 1–12. https://doi.org/10.21580/at.v12i1.4515

Priyanthi, K. A., Agustini, K., & Santyadiputra, G. S. (2017). Pengembangan e-modul berbantuan simulasi berorientasi pemecahan masalah pada mata pelajaran komunikasi data (studi kasus : siswa kelas XI TKJ SMK Negeri 3 Singaraja). *Karmapati*, *6*(1), 40–49. https://doi.org/10.23887/karmapati.v6i1.9267

Ramadanti, F., Mutaqin, A., & Hendrayana, A. (2021). Pengembangan e-modul matematika berbasis PBL (problem based learning) pada materi penyajian data untuk siswa SMP. *Jurnal Cendekia : Jurnal Pendidikan Matematika*, *5*(3), 2733–2745. https://doi.org/10.31004/cendekia.v5i3.759

Rayanto, Y. H., & Sugiyanti. (2020). *Penelitian pengembangan model ADDIE dan R2D2: Teori dan praktek*. Lembaga Akademik dan Research Institute.

Riduwan. (2018). *Skala pengukuran variabel-variabel penelitian*. Alfabeta.

Situmorang, M., Yustina, & Syafii, W. (2020). E-module development using kvisoft flipbook maker through the problem based learning model to increase learning motivation. *Journal of Educational Sciences*, *4*(4), 834–848. http://dx.doi.org/10.31258/jes.4.4.p.834-848

Sriyanti, I., Almafie, M. R., Marlina, L., & Jauhari, J. (2020). The effect of using flipbook-based e-modules on student learning outcomes. *Kasuari: Physics Education Journal*, *3*(2), 69–75. https://doi.org/10.37891/kpej.v3i2.156

Sugiyono. (2018). *Metode penelitian kuantitatif* (Alfabeta (ed.)).

Susanti, F. (2015). Pengembangan e-modul dengan aplikasi kvisoft flipbook maker pada pokok bahasan fluida statis untuk peserta didik SMA/MA kelas X. *Repository UIN Sunan Kalijaga Yogyakarta*.

Tsai, T. P., Lin, J., & Lin, L. C. (2018). A flip blended learning approach for ePUB3 eBook-based course design and implementation. *Eurasia Journal of Mathematics,*

Science and Technology Education, *14*(1), 123–144. https://doi.org/10.12973/ejmste/79629

Ulya, I., & Sidqi, M. F. (2020). Pengembangan e-modul writing for professional context berstandar CEFR berdasarkan karakteristik pekalongan kota kreatif dunia. *Jurnal Litbang Kota Pekalongan*, *18*(2), 151–160. https://doi.org/10.54911/litbang.v19i0.129

Wibowo, E., & Pratiwi, D. D. (2018). Pengembangan bahan ajar menggunakan aplikasi kvisoft flipbook maker materi himpunan. *Desimal : Jurnal Matematika*, *1*(2), 147–156. https://doi.org/10.24042/djm.v1i2.2279