

## Development of digital modules for English subjects for fourth grade elementary school students

Syahnaz Nabila Anjani Pratiwi\*, Nurhikmah Nurhikmah, Citra Rosalyn Anwar

Universitas Negeri Makassar, Indonesia

**Submitted:** 02-10-2024  
**Accepted:** 03-11-2024  
**Published:** 06-11-2024

**Abstract:** The study aims to develop a digital module for English subjects in elementary schools. The development follows the flow of the ADDIE model. The study subjects were 2 validators and 9 students during the small group trial and 31 during the large group trial. Data collection used a needs identification questionnaire, a validation questionnaire for material experts and design experts, a small group trial questionnaire, and a test. Data were calculated by calculating scores and percentages for validity and student responses, while the effectiveness test used the Wilcoxon and n-gain tests. The study results found that identifying student needs was in the required qualifications. The results of the validity level of the digital module from the assessment of the material expert validator were 89% and the media/design expert 94% (very valid). The results at the level of practicality obtained from the analysis of the small group response questionnaire were 97 (very practical). Furthermore, the level of effectiveness of the digital module was 0.8 (high), with significant test results showing a significant difference before and after learning. It was concluded that the product can be used in the classroom learning process to teach students English.

**Keywords:** Development media, digital module, English subject, student interest

**Abstrak:** Penelitian ini bertujuan untuk mengembangkan modul digital mata pelajaran Bahasa Inggris di sekolah dasar. Pengembangan mengikuti alur model ADDIE. Subjek penelitian adalah 2 orang validator dan 9 siswa pada uji coba kelompok kecil dan 31 pada uji coba kelompok besar. Pengumpulan data menggunakan angket identifikasi kebutuhan, angket validasi ahli materi dan ahli desain, angket uji coba kelompok kecil, dan tes. Penghitungan data dilakukan dengan menghitung skor dan persentase validitas dan respon siswa, sedangkan uji keefektifan menggunakan uji Wilcoxon dan n-gain. Hasil penelitian menunjukkan bahwa identifikasi kebutuhan siswa sudah memenuhi kualifikasi yang dipersyaratkan. Hasil tingkat kevalidan modul digital dari penilaian validator ahli materi sebesar 89% dan ahli media/desain sebesar 94% (sangat valid). Hasil pada tingkat kepraktisan yang diperoleh dari analisis angket respon kelompok kecil sebesar 97 (sangat praktis). Selanjutnya, tingkat keefektifan modul digital sebesar 0,8 (tinggi), dengan hasil uji signifikansi yang menunjukkan adanya perbedaan yang signifikan sebelum dan sesudah pembelajaran. Disimpulkan bahwa produk tersebut dapat digunakan dalam proses pembelajaran di kelas untuk mengajarkan bahasa Inggris kepada siswa.

**Kata kunci:** Media pengembangan, modul digital, mata pelajaran bahasa Inggris, minat siswa

This is an open access article under the CC-BY-SA license



\*Corresponding author: [syahnaznap14@gmail.com](mailto:syahnaznap14@gmail.com)

## INTRODUCTION

The change in the education curriculum to the independent curriculum has made the use of technology in learning a global trend. Various efforts have been made to support the implementation of the current independent curriculum, including planning student-centered learning (Kamila et al., 2024). One of the efforts made by teachers is to design learning using effective, interesting and efficient media, the selection of media is directed according to the competencies to be achieved by students (Dita et al., 2024; Haq et al., 2024; Nurhikmah et al., 2022; Pattaufi & Arnidah, 2019). This learning design is expected to be able to meet students' needs, be interesting and fun according to the identification of

students' own needs in fulfilling their learning (Damayanti et al., 2024; Husnaini, 2023; Yani et al., 2024), one of which is the use of digital modules.

Currently, digital modules are widely used because they have many advantages when compared to printed books (Divayana et al., 2019; Rahmawati et al., 2021). In addition, according to Febriati et al. (2019), the use of conventional books as a learning resource is considered to only provide theoretical understanding without providing facilities for practice. Furthermore, according to Utomo et al. (2021), technology plays an important role in presenting a positive impact in the education sector through the application of the paperless concept. This means that the application of this digital module can be an effort in transforming learning because of its more effective and practical nature. With this digital module, it is also an effort not only to reduce paper use but also to provide easy access and flexibility for students and teachers in accessing learning materials (Setyantoko et al., 2023; Yomaki et al., 2023).

The researcher intends to conduct research on the development of this digital module in the area of SD Negeri 35 Kendari. SD Negeri 35 Kendari is located in the center of Kendari City which is supported by good internet network access and the use of mobile phones is also allowed in the school environment in a limited category. Mobile phones are only allowed during learning with teacher supervision. This school has implemented the Merdeka Curriculum since 2022. English subjects from grades 1-4 have used this curriculum. The development of teaching materials in this digital module development plan is for English subjects. This can be used as a potential for the school environment to design learning that is integrated with technology. Good internet facilities open up opportunities to utilize online learning resources and platforms.

Based on initial data in the form of an interview with one of the teachers, although the concept of the independent curriculum has been implemented and supported by adequate internet access and technology, the learning that is taking place has not fully utilized interactive multimedia, especially in English learning. The teacher has prepared a teaching module by the guidelines for the independent curriculum where the module contains components of learning objectives, activity steps, and assessments needed in one unit/topic based on the flow of learning objectives or within a predetermined time frame. However, in the learning process, the teaching module has not been fully utilized by students as a reference for learning in class. Furthermore, the teacher stated that there were difficulties in combining various media to meet the various learning styles of students. The minimal variation in the use of these media causes a lack of diversity in learning approaches that do not cover all types of students. Learning is still carried out based on textbooks that tend to be one-way, where the teacher is the provider of information and the student is the recipient of information. The use of textbooks only comes from the ministry. It is not designed based on the needs of students at the school. This can result in a lack of interactivity in the classroom and impact some students' involvement. Initial data on the number of grade IV students is 122 consisting of 4 classes. Class 4A has 31 students, 4B has 31 students, 4C has 30 students, and 4D has 30 students. The ownership of printed English books at SDN 35 Kendari is only 13 so it cannot accommodate all grade IV students.

The development of digital books helps teachers provide a stock of books that suit students' needs. Digital books can be formed into digital modules. Digital modules provide benefits for improving student performance. For example, research Karina et al. (2024) has

developed digital learning resources to help students write an observation report. Dita et al. (2023) has developed a digital module and the results are that the digital module meets valid and practical criteria. The results of their research show that student learning outcomes show differences. Mustofa et al. (2024) in their research have provided digital-based learning resources for students. They found that digital learning resources provide benefits for student success in learning. Students who use learning resources give very good responses.

English learning becomes more interactive if digital learning resources are used. Digital modules, which combine sound, text, and images, are an alternative technology-based learning resource in English subjects that function as teaching materials or media (Dewi et al., 2022). The digital module has excellent quality in terms of material and media and is suitable for use as a digital learning resource for English language learning (Daud et al., 2022). Research by Wulandari et al. (2022) found that using digital modules in flipbooks has helped improve students' speaking skills in English subjects. The same research by makhroji et al. (2023) has found that using digital modules in the form of flipbooks has increased students' speaking skills in the medium category. Using digital modules helps improve students' reading skills (Syaputra et al., 2024) and vocabulary (Tania & Astutik, 2024) in learning English. Thus, it is proven that using digital modules has a good effect on developing students' abilities in learning English. Digital-based learning resources can help students quickly develop skills in teaching English.

Ultimately, the development of this digital module is expected to help increase student engagement in the English learning process in grade 4 of SD Negeri 35 Kendari. This development is carried out through an adaptation process to existing teaching modules in accordance with the concept of an independent curriculum. The use of innovative and effective learning technology can also help improve the quality of education in Indonesia, especially at the elementary school level. Therefore, the development of learning technology must continue to be developed and improved in order to help create a more interactive, efficient, and effective learning process in the future. This research aims to develop a digital English learning module to improve student learning outcomes.

## **METHOD**

The type of research and development that has been carried out in this development is Research and Development (R & D). Research procedures In the ADDIE (Branch, 2009) stage there are 5, namely:

1. Analyze. In the analysis phase, researchers conduct preliminary studies or exploratory studies to examine, investigate, and collect information by means of observation, interviews and focus group discussions (FGD). In the process of analyzing needs, researchers identify problems that exist at SDN 35 Kendari through initial observations by conducting interviews with teachers, providing needs identification questionnaires to students, material analysis, and student characteristic analysis.
2. Design. After conducting a needs analysis and obtaining information that the digital module product is needed as a learning medium, the next phase is planning starting with analyzing learning achievements, compiling learning objectives and learning objective flows, installing applications, designing the contents of each page, designing instruments, and learning outcome evaluation tools, creating prototypes and

storyboards and designing them into the Canva application that has been installed previously. This design is the basis for carrying out the next development process.

3. Development. In this phase, carried out by creating and combining content that has been designed at the design phase. At this phase, there are things that researchers do in conducting development research on the media, namely, writing content on the contents of the learning media in the digital module and then validating the media by media experts and material experts and making revisions according to input from experts. At this stage, 9 students were involved in small group testing.
4. Implementation. The implementation phase is a trial of the product that has been developed. In the trial activity, a practicality assessment was carried out through a student response questionnaire. This implementation was carried out to determine the effectiveness of the digital module in the learning process before and after using the digital module that had been developed.

The data source of this study is primary data collected directly from grade IVA students of SDN 35 Kendari (9 students were involved in small group testing, and 31 student in implementation), 1 media and design validator, and 1 material expert validator. The students were selected from SDN 35 Kendari, and were asked to participate in the learning voluntarily. Data have been collected through pre- and post-test given to students.

The research instruments used were questionnaires (Validation by material experts, validation by media and design experts, questionnaires on student needs and student responses), tests (pre-test and post-test). In this study, data analysis techniques used qualitative analysis techniques to manage data from validator reviews and product needs and quantitative to analyze the validity, practicality and effectiveness of the products that have been developed. Effectiveness testing uses the Wilcoxon test. Validity categories are based on Akbar (2013), student responses are based on Nunaki et al. (2019), and n-gain are based on Hake (1998).

## RESULTS AND DISCUSSION

The results of this study describe the process carried out in developing a digital module (e-module) product for English subjects in an effort to answer the problem formulation presented in chapter I, namely the need for a digital module, the design of a digital module, as well as the validity, practicality and effectiveness of the English digital module. Student needs analysis is carried out by providing a student needs identification questionnaire to find out whether the digital module product to be developed is needed in the learning process.

Based on the results of the questionnaire on the identification of student needs for digital module development products with 10 available questions (Table 1), it can be said that overall, the number of results scores for the yes option is 217 (70%), the number of results scores for the sometimes option is 46 (15%). The number of results scores for the no option is 47 (15%). Based on the analysis of student needs that has been carried out, it can be said that both lecturers and students consider it essential to develop digital module products. It is a reference and teaching material that supports the English learning process in the classroom that follows the available teaching modules, especially those that are by

learning objectives. Needs analysis is the basis for developing digital modules (Yosintha et al., 2024), for english teaching (Fitriani & Gunawan, 2024).

Table 1. Description of student needs identification for digital modules

No	Question	Yes	Sometimes	No
1	Have you ever had difficulty studying English material?	20	9	2
2	During English subject learning activities, do teachers use printed books?	25	1	5
3	Do printed English textbooks make you happy to study?	9	16	6
4	Are the pictures in the English printed book clear and easy for you to understand?	9	13	9
5	Have teachers ever used teaching materials other than printed books in English subjects?	9	0	22
6	Would using teaching materials other than printed books make you happier and more enthusiastic about learning?	28	3	0
7	Have you ever heard of digital modules?	24	4	3
8	The digital module will be equipped with learning materials, images, audio and video. Would you be happy and excited if the digital module was used in English subjects?	31	0	0
9	Will learning videos make it easier for you to understand the material, especially when practicing?	31	0	0
10	Do you agree that digital modules should be used in English learning?	31	0	0
Total		217	46	47
Percentage		70%	15%	15%

### Creating prototype design

At this stage, the digital module is designed using the Canva application. The design is based on the prototype and storyboard that were created previously. This process utilizes the creative abilities and design tools available in Canva to create layouts, graphics, and other visual elements from the previous prototype and storyboard concepts. By referring to the prototype and storyboard as a guideline, the digital module design becomes the basis for further implementation. The final result is based on the expectations and goals set.



Fig. 1. Front cover view of digital module

 This figure consists of two pages of general information and core competencies. 
   
 Page 1 (left) contains:
 

- Informasi Umum**: Sekolah : SD Negeri 35 Kendari; Mata Pelajaran : Bahasa Inggris; Tahun Pelajaran : 2023/2024; Kelas/Fase : IV/B; Materi : Be on Time; Alokasi Waktu : 2 x 35 Menit.
- Kompetensi Awal**: Siswa mampu mengidentifikasi waktu; Siswa dapat berbicara tentang waktu.
- Sarana dan Prasarana**: Lembar Kerja Peserta Didik; Laptop/Power Point; Speaker.
- Profil Pelajar Pancasila**: Mandiri; Kreatif; Beriman, bertakwa kepada Tuhan Yang Maha Esa.

 Page 2 (right) contains:
 

- Kompetensi Inti**: Tujuan Pembelajaran: Siswa mampu mengidentifikasi waktu dengan menggunakan jam analog; Siswa mampu berdialog tentang penggunaan waktu.
- Pemahaman Bermakna**: Peserta didik akan belajar mengenal waktu.
- Pertanyaan Pemantik**: Halo, Students. What time is it?

Fig. 2. General information and core competencies view

 The image shows a grid of learning materials. The top row includes:
 

- English Test**: A reading comprehension passage with multiple-choice questions.
- Look and Say**: An activity with images of vehicles (bicycle, bus, truck, motorcycle) and a list of words to identify.
- Pilih gambar**: A matching exercise where students connect words to the correct image.
- Look and Write**: An activity where students write the names of the vehicles shown in the images.

 The bottom row includes:
 

- Keracuan**: A text passage about food poisoning with a list of symptoms and causes.
- Game**: A simple board game or activity involving children.
- Regimen Test**: A reading passage about a regimen with comprehension questions.
- Regimen Test**: Another reading passage with comprehension questions.
- Regimen Test**: A reading passage with comprehension questions.
- Regimen Penulisan**: A writing task where students write a paragraph based on a given topic.

Fig. 3. Learning materials view

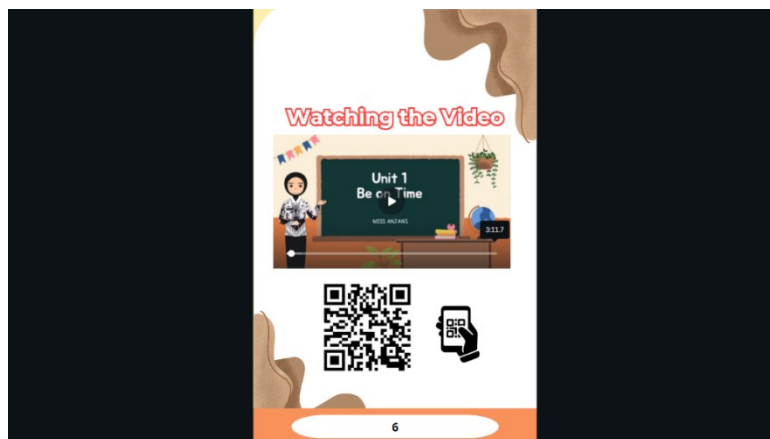


Fig. 4. View of learning video in digital book



Fig. 5. Final view of digital book

Researchers carried out the development stage in this study to obtain valid product results. Before conducting the validity level test of the digital module, learning materials were first developed to create a digital module product. The validity analysis of this digital module evaluates the extent to which the material presented is relevant to the curriculum or learning objectives applied, including understanding whether the information presented is based on the level of knowledge and needs of students. The material compiled in the development of this digital module was reviewed and assessed by a material expert, a lecturer in elementary school teacher education who was competent in English. Table 2 is the result of the assessment given by the expert.

Based on the assessment of the material expert validator on the learning aspect (Table 2), an average value of 84 was obtained, indicating that this aspect is in the valid category. On the aspects of content, completeness, accuracy and meaningfulness, an average value of 93 was obtained, meaning that the aspect of language use in the digital module is in the very valid category. Then, the average value of the two points above shows 89, meaning that the material aspect of the digital module is declared valid. It is concluded that the development of the digital module is in the very valid category. Books that have been developed and meet the validity criteria of experts can be continued for trials (Horota et al., 2023; Sirait et al., 2024)

Table 2. Validation results by material experts

No	Criteria	%
<b>Learning Aspects</b>		
1	Suitability of materials to learning objectives	80
2	Suitability of materials to student characteristics	100
3	Clarity of language used in digital module	80
4	Accuracy in explaining theoretical material	80
5	Accuracy in explaining practical material	80
Average (II)		84
<b>Content aspects, completeness, accuracy, meaningfulness</b>		
6	The sequence (organizational structure) of the contents/description of the material	100
7	Coverage (Breadth and depth of material description)	80
8	Factualization of material content	100
9	The attractiveness of the content in motivating users	100
10	Appropriateness of the language used (reviewed from the use of Indonesian language rules)	80
11	Suitability of assignments and exercises to the material	100
12	Suitability of video presentation to material	80
13	The digital module used can facilitate the achievement of learning objectives.	100
14	The digital module used is able to facilitate the achievement of learning objectives.	100
Average (I)		93
Average (I and II)		89

The assessment of the media and product design of the digital module was carried out by a lecturer who is the Head of the Educational Technology Study Program at Universitas Negeri Makassar and is competent in the field of learning media. The validity test of media and design experts aims to ensure that the visual aspects, presentation, user interaction, elements such as layout, navigation are in accordance with design standards and user needs, thereby increasing the attractiveness and effectiveness of the digital module product.

Based on the assessment of the media expert and design expert validators (Table 3), it shows that in the media aspect, an average of 93 is obtained, indicating a very valid category. An average of 93 is obtained in the design aspect, indicating a very valid category. In the usage aspect, an average of 93 is obtained, indicating a very valid category. An average of 96 is obtained in the utilization aspect, indicating a very valid category. It can be concluded that in all four aspects, an overall average of 94 is obtained, indicating a very valid category. This shows that the digital module developed by the researcher is worthy of being tested in the study. Digital-based learning resources must be validated by media experts, and they must meet validity criteria before being tested (Malik et al., 2024; Susanto et al., 2024). After measuring the level of validity, the next step is to analyze the level of practicality of the digital module.



Table 3. Validation results by design and media experts

No	Criteria	%
<b>Media Aspects</b>		
1	Suitability of digital module usage with student characteristics	100
2	Self paced learning materials (This digital module can be used independently anytime and anywhere)	100
3	Self instruction (This digital module allows students to easily understand the mastery of the material and can be used independently without teacher supervision)	100
4	Self-contained (This digital module is a complete package that is equipped with study instructions, materials, workshops, bibliography)	100
5	Chunking modular (digital module contents are specific and complete)	80
6	Learning activity (digital module content is divided into learning activities)	80
Average (I)		93
<b>Design Aspects</b>		
7	Attractive digital module cover appearance compatibility	100
8	Clarity of space arrangement/layout	80
9	Clarity of color contrast between text and background	100
10	Clarity of program identity	80
11	Clarity of use	100
12	Clarity of image display	100
13	Suitability of images and lesson materials	100
14	Suitability of images and subject matter	80
15	Clarity of video display	100
Average (II)		93
<b>Usage Aspects</b>		
16	Easy to Use (Ease of accessing digital module)	100
17	Accuracy of button functions and navigation	80
18	Functions as a supporter of the learning process	100
Average (III)		93
<b>Utilization Aspect</b>		
19	Compliance of program components	100
20	Having visual appeal in the form of colors, images, illustrations, font size	100
21	Digital module can overcome time constraints	100
22	The digital module used is interesting	100
23	Digital module can minimize misperceptions in students	80
Average (IV)		96
Average (I + II + III + IV)		94

The level of practicality is carried out through product trials using student response questionnaires. The student response questionnaire was given to get feedback from students. This stage involved 9 students. The selection of these 9 students was based on the level of student understanding, which consisted of high, medium, and low levels. Three

students each for each level of understanding. The researcher distributed the development product as an offline application and a website version that students can access.

Table 4. Small group trial responses

No	Rated Aspects	Score
<b>Digital Module Display</b>		
1	The digital English module has an attractive appearance	100
2	The images on the digital module are easy to understand.	100
3	Images on digital modules attract attention	100
4	The language used in the digital modules is easy to understand.	92
5	Text in digital modules is clearly readable	92
6	The images presented in the digital module are clear and not blurry.	97
7	The instructions for using the digital module are clear.	100
8	The delivery of material in the learning video is clear	100
9	The presentation of material in learning videos attracts interest in learning	100
10	The color combination used is appropriate	100
Average (I)		98
<b>Interest and Use of Digital Modules</b>		
11	I can use digital modules anywhere (at school or outside school)	92
12	My understanding of the use of time in English using digital modules has increased.	94
13	The concepts presented in the digital module are easy for me to understand.	94
14	Learning using this digital module makes me enthusiastic about learning	97
15	There were no problems when I used the digital module.	97
16	The questions in the digital module stimulate (provoke) my thinking power.	94
17	The questions in the digital module are easy for me to understand.	97
18	The use of learning videos in digital modules makes it easier for me to understand the material	100
Average (II)		96
Average (I + II)		97

Small group trials were conducted to obtain responses and performance of the digital English module when operated by students. Based on the assessment results through a questionnaire (Table 4), it can be seen that the percentage results of the small group trials had an average score of 97. These results indicate that the level of practicality is in the very practical category, and the use of the English digital module can support the learning process. The subsequent measurement is to analyze the level of effectiveness of the digital module by conducting a large group trial. After conducting a small group trial, a large group

trial was conducted. Testing was conducted to see student learning outcomes before and after using the digital module.

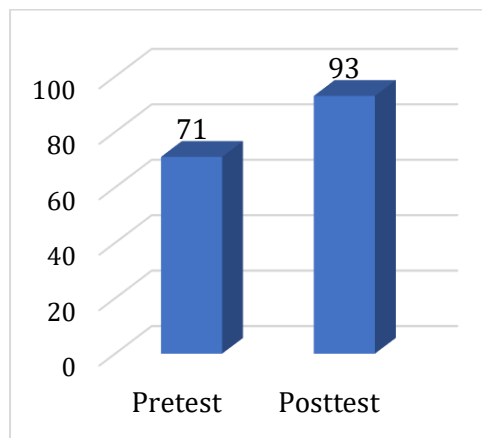


Fig. 6. Prior (pretest) and final (posttest) understanding of students

Figure 6 shows the pretest and posttest data of students after they learned to use digital modules in English learning. The findings show that there is an increase in student learning outcomes.

Table 5. Data normality test

Data	Normality		N-Gain	Category
	Sig.	Decision		
Pretest	0.200	Normal	0.8	High
Posttest	0.000	Not Normal		

Table 5 indicates that the pretest data is normal but the posttest is not normal. This finding indicates that the test is significant using the Wilcoxon Test. In addition, Table 5 presents the n-gain value. The n-gain value reaches 0.8 which indicates that the increase in student learning outcomes is high. The findings of this research indicate that the use of digital modules can improve student learning outcomes and achieve high improvements.

Table 6. Wilcoxon test

	Negative Ranks	Positive Ranks	Ties	Z	Sig
Pre-post	0	31	0	-4.863	0

Table 6 shows that the increase in student learning outcomes is significant. Table 6 shows that no students experienced a decline in learning outcomes or showed no improvement (ties). All students involved in teaching using digital modules showed an increase indicated by the number in the positive ranks column, which is 31.

The development of digital module products for English subjects for grade 4 elementary school students begins with analyzing student needs to support whether the product to be developed can be used according to the learning character and needs of students in that class. This research was conducted in a public elementary school in the

center of Kendari City. This research was conducted by implementing digital module development products, which were carried out through the stages of needs analysis, measuring the validity, practicality, and effectiveness of the digital module developed by the researcher. This research can also adapt existing teaching modules that have not been fully used because the primary reference used as teaching materials is printed books issued by the Ministry.

This study has succeeded in developing a digital module that has been tested valid, based on the results of the validation test by expert validators, which show that this digital module meets the requirements in terms of material, media, and learning design aspects. Student learning outcomes showed a significant increase. No students experienced a decline in learning outcomes. According to Rahmawati et al. (2021), by using digital modules, students can be motivated to read them. By motivating students to read, they can understand the contents of the reading well. It makes the achievements of students in this study reach a high category. According to Faudi et al. (2023), using digital-based learning resources in teaching English helps students improve their reading skills. By improving their reading skills, their reading results are of good quality. This is what causes students to be able to understand the contents of the material in the digital modules that we have developed.

The digital modules we have developed are designed to attract students' attention. Digital learning resources improve elementary students' interest in learning English because students are more comfortable learning with presenting material in the form of colored text, images, audio, and video (Adzkiya & Suryaman, 2021). In our research, the module display is made attractive (see Figure 1-5), the use of various colors, and even the addition of videos that aim to provide a variety of reading and viewing for students. These findings are supported by student responses that the delivery of material in the learning video is precise, which received a score of 100. Students consider that they can access the digital module at any time, the language is easy to understand, attracts attention, the images are easy to understand, and the color combination is very good.

The development product of the English digital module that has been used has been proven to improve student learning outcomes with product characteristics, namely: 1) The English digital module can be accessed on IOS/Android-based smartphones, computers/laptops offline, and also websites online; 2) The digital module has audio, video, images, and text to support the student learning process; and 3) As seen from student learning outcomes, the English digital module has been proven to increase effectiveness. The digital module product has weaknesses: student worksheets cannot be filled in directly on the digital module product.

## **CONCLUSION**

Based on the results and discussion of research on developing digital modules for English subjects to improve student learning outcomes, it can be concluded that the developed product is feasible to use. This feasibility is based on the results of validation, practicality, and effectiveness tests. The digital module that has been developed attracts students' attention to read, and they can use it anywhere and easily understand its contents.

## REFERENCES

- Adzkiya, D. S., & Suryaman, M. (2021). Penggunaan Media Pembelajaran Google Site dalam Pembelajaran Bahasa Inggris Kelas V SD. *Educate : Jurnal Teknologi Pendidikan*, 6(2), 20–31. <https://doi.org/10.32832/educate.v6i2.4891>
- Akbar, S. (2013). *Instrumen perangkat pembelajaran*. PT Remaja Rosdakarya
- Branch, R. M. (2009). *Instructional Design: The ADDIE Approach*. Springer US. <https://doi.org/10.1007/978-0-387-09506-6>
- Damayanti, A. M. S., Nurmayanti, N., & Syamsunir, S. (2024). Development of science flipbook to increase student learning activities. *Journal of Research in Instructional*, 4(2), 333–344. <https://doi.org/10.30862/jri.v4i2.424>
- Daud, A., Supriusman, S., Rozalinda, R., Harfal, Z., Suryani, A., Nabilla, O., & Thahirah, Z. (2022). The Development of Interactive E-Module Using Flipbookmaker for English Structure Learning at an Indonesian University. *Ta'dib*, 25(2), 160–176. <https://doi.org/10.31958/jt.v25i2.7501>
- Dewi, Y. N., Zaim, M., & Rozimela, Y. (2022). Interactive Learning Using E-Learning Module in Learning English for Senior High School: A Review of Related Articles. *JELITA: Journal of Education, Language Innovation, and Applied Linguistics*, 1(2), 125–134. <https://doi.org/10.37058/jelita.v1i2.5306>
- Dita, K. I., Nunaki, J. H., Nasir, N. I. R. F., Winarno, N., Damopolii, I., & Latjompoh, M. (2024). Flipbook digital sistem peredaran darah manusia: Dampaknya terhadap hasil belajar siswa. *Biogenesis*, 20(2), 55–70. <http://dx.doi.org/10.31258/biogenesis.20.2.55-70>
- Dita, K. I., Tuririday, H. T., Damopolii, I., & Latjompoh, M. (2023). Designing the human circulatory system e-module to increase student achievement. *Inornatus: Biology Education Journal*, 3(2), 75–84. <https://doi.org/10.30862/inornatus.v3i2.422>
- Divayana, D. G. H., Suyasa, P. W. A., Ariawan, I. P. W., Mahendra, I. W. E., & Sugiharni, G. A. D. (2019). The Design of Digital Book Content for Assessment and Evaluation Courses by Adopting Superitem Concept Based on Kvisoft Flipbook Maker in era of Industry 4.0. *Journal of Physics: Conference Series*, 1165, 012020. <https://doi.org/10.1088/1742-6596/1165/1/012020>
- Faudi, F., Husain, B., & Musthafa, B. (2023). Practice and barriers of technology integrated pedagogy in teaching EFL young learners: A critical analysis. *Journal of Research in Instructional*, 3(2), 185–195. <https://doi.org/10.30862/jri.v3i2.251>
- Febriati, F., Anwar, C., & Saba, A. (2019). Digital Books For Educational Communication. *Proceedings of the 1st International Conference of Science and Technology in Elementary Education, ICSTEE 2019*, Makassar, South Sulawesi, Indonesia. <http://dx.doi.org/10.4108/eai.14-9-2019.2290043>
- Fitriani, Y., & Gunawan, M. H. (2024). Cultural synergy: Integrating Lamin Dayak Kenyah in English language learning – A need analysis study. *Journal of Research in Instructional*, 4(2), 439–452. <https://doi.org/10.30862/jri.v4i2.463>
- Hake, R. R. (1998). Interactive-engagement versus traditional methods: A six-thousand-student survey of mechanics test data for introductory physics courses. *American Journal of Physics*, 66(1), 64–74. <https://doi.org/10.1119/1.18809>
- Haq, A. Z., Akmansyah, M., Erlina, E., & Koderi, K. (2024). Technology integration in arabic

- language learning: A literature review on the effectiveness of e-learning and mobile applications. *Journal of Research in Instructional*, 4(2), 481–494. <https://doi.org/10.30862/jri.v4i2.473>
- Horota, S., Damopolii, I., Kilmaskossu, J. P., & Nusantari, E. (2023). Development of an ethnobiology supplement book based on the study of medicinal plants in Wonawa District, Kepulauan Yapen Serui Regency. *Inornatus: Biology Education Journal*, 3(1), 40–49. <https://doi.org/10.30862/inornatus.v3i1.421>
- Husnaini, H., Nurhikmah, H., Muin, A., & Hakim, A. (2023). development of teaching materials based on augmented reality (AR) in science subjects at MIN 1 Kolaka Utara Students. *AULADUNA: Jurnal Pendidikan Dasar Islam*, 10(2), 224–232. <https://doi.org/10.24252/auladuna.v10i2a8.2023>
- Kamila, Q. A. N., Asbari, M., & Darmayanti, E. (2024). Merdeka Belajar: Memahami Konsep Pembelajaran Masa Kini. *Journal of Information Systems and Management (JISMA)*, 3(2), 104–110. <https://doi.org/10.4444/jisma.v3i2.909>
- Karina, A., Sinaga, M., & Charlina, C. (2024). Developing teaching materials for writing observation report texts using Powtoon for grade X high school students. *Journal of Research in Instructional*, 4(2), 345–358. <https://doi.org/10.30862/jri.v4i2.425>
- Makhroji, M., Rahmiati, R., Chairuddin, C., & Isda, I. D. (2023). Development of E-Module Based on Flip Book Media to Improve Students' Speaking Skills. *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran Dan Pembelajaran*, 9(4), 1270–1279. <https://doi.org/10.33394/jk.v9i4.8999>
- Malik, M. B., Iskandar, R., & Naryanto, R. F. (2024). Development of android-based mobile learning media to increase learning results in vocational high schools. *Journal of Research in Instructional*, 4(2), 425–438. <https://doi.org/10.30862/jri.v4i2.462>
- Mustofa, A., Hayuana, W., Damopolii, I., Ibrohim, I., & Susilo, H. (2024). The discovery learning and Google sites: Its application in learning the process of urine formation for high school students. *Inornatus: Biology Education Journal*, 4(2), 132–150. <https://doi.org/10.30862/inornatus.v4i2.711>
- Nunaki, J. H., Patiung, Y., Kandowangko, N. Y., Nusantari, E., & Damopolii, I. (2019). The Validity and Students Response toward Coordination System Teaching Material Oriented Guided Inquiry. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 9(1), 59–70. <https://doi.org/10.30998/formatif.v9i1.2884>
- Nurhikmah, H., Hakim, A., Ramli, A. M., & Bena, B. A. N. (2022). Pelatihan Gamifikasi dalam Video Pembelajaran untuk PAUD. *INOVASI: Jurnal Hasil Pengabdian Masyarakat*, 2(2), 159–163. <https://doi.org/10.35580/inovasi.v2i2.40893>
- Pattaufi, P., & Arnidah, A. (2019). Pengaruh Pemanfaatan Bahan Ajar Berbasis Audio-Visual (Video) pada Mata Pelajaran Sejarah Kelas X di SMA Negeri 11 Pangkep. *Prosiding Seminar Nasional LP2M UNM 2019*, 482–484 <https://ojs.unm.ac.id/semnaslemlit/article/view/11468/6716>
- Rahmawati, O. I., Nurdianingsih, F., & Fitriyaningsih, A. (2021). Motivating Students to Read Uses Online Digital Module. *Prosiding Nasional Pendidikan: LPPM IKIP PGRI Bojonegoro*, 2(1), 236–240. <https://prosiding.ikipgribojonegoro.ac.id/index.php/Prosiding/article/view/1167>
- Setyantoko, E., Nunaki, J. H., Jeni, J., & Damopolii, I. (2023). Development of human digestive

- system e-module to improve students' learning outcomes during pandemic. *AIP Conference Proceedings*, 2540, 020002. <https://doi.org/10.1063/5.0105782>
- Sirait, S. H. K., Sremere, F. M., Nunaki, J. H., & Tuwo, M. (2024). Development of plant diversity flipbooks integrated local wisdom. *Inornatus: Biology Education Journal*, 4(1), 27–35. <https://doi.org/10.30862/inornatus.v4i1.576>
- Susanto, H., Setiawan, D., Firdaus, Z., Kusmayadi, C. T., & Fitriyati, U. (2024). Visual, audio, and kinesthetic students' learning independence: Improvement through the development of augmented reality media. *Journal of Research in Instructional*, 4(2), 465–480. <https://doi.org/10.30862/jri.v4i2.420>
- Syaputra, D. N. P., Ardayati, A., & Hamdan, H. (2024). A Thesis Developing Interactive E-Flipbook Module in Teaching Reading Text to the Tenth Grade Students at SMAN 4 Lubuklinggau. *Sintaksis: Publikasi Para Ahli Bahasa Dan Sastra Inggris*, 2(4), 307–318. <https://doi.org/10.61132/sintaksis.v2i4.943>
- Tania, N., & Astutik, Y. P. (2024). Development of flipbook-based e-modules on vocabulary subjects of class VIII AT MTsN Berau. *PEEL (Paser English Education and Linguistic)*, 4(2), 20–31. <https://doi.org/10.56489/peel.v4i2.144>
- Utomo, A. P. Y. U., Isnarto, I., Arief, A., Haryadi, H., Pramono, D., & Saputro, I. H. (2021). Optimalisasi model pelatihan terpadu dalam penyusunan ebook pembelajaran sebagai implementasi paperless bagi guru di SMPN 41 Semarang. *Jurnal Implementasi*, 1(1), 10–15. <https://jurnalilmiah.org/journal/index.php/ji/article/view/7>
- Wulandari, S., Kusumaningrum, S. R., & Dewi, R. S. I. (2022). Using flipbook to enhance the students performance in speaking. *SENTRI: Jurnal Riset Ilmiah*, 1(4), 1151–1157. <https://doi.org/10.55681/sentri.v1i4.365>
- Yomaki, E. K., Nunaki, J. H., Jeni, J., Mergwar, S. D. I., & Damopolii, I. (2023). Flipbook based on problem-based learning: Its development to bolster student critical thinking skills. *AIP Conference Proceedings*, 2614(1), 020022. <https://doi.org/10.1063/5.0126212>
- Yani, A. A., Gani, H. A., Muin, A., Lu'mu, L., Arnidah, A., & Nurhikmah, N. (2024). Virtual-based digital library website: A development for the educational technology master's study program at Universitas Negeri Makassar. *Journal of Research in Instructional*, 4(2), 394–410. <https://doi.org/10.30862/jri.v4i2.440>
- Yosintha, R., Rekha, A., Nugrahaeni, D. A., & Maulani, F. (2024). Developing A Flipbook for Introduction to English Grammar Course with Project-Based Learning Approach. *Langkawi: Journal of The Association for Arabic and English*, 66–82. <https://doi.org/10.31332/lkw.v0i0.7880>