Developing Interactive E-Module Based on Heyzine Flipbook for The Seventh-Grade Student

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Abstract

The use of ICT in education has been widely implemented in this 5.0 era. An interactive e-module is one of the ICT-based learning media. A learning media that allows students to learn anywhere and anytime. This study aims to develop and get to know the feasibility of an interactive e-module on "Chapter 0" of English for Nusantara by using Heyzine Flipbook for the seventh-grade students. The method used Research and Development (R&D) with Borg and Gall model adapted by Sugiyono. In the implementation, this research was only conducted in eight stages, namely potential and problem, data collection, product design, design validation, design revision, product trial, application trial, and mass production. For the result, the interactive e-module got "Highly Feasible" category with feasibility percentage 94,66% by material expert and 88% by media expert. Additionally, it got 90.54% (highly positive) from the English teachers and the small group at the product trial stage and 88.62% (highly positive) from the large group at the application trial stage. Based on the findings, the interactive e-module based on Heyzine Flipbook on "Chapter 0" of English for Nusantara for seventh grade can be one of the alternative learning media to help the seventh-grade students learn basic English materials.

Keywords: *Interactive e-module; Heyzine; Flipbook; Research and Development.*

INTRODUCTION

Recently there has been curriculum changing from the 2013 Curriculum to the Merdeka Curriculum. In the elementary school level, now the English lesson is considered local content, whereas previously it was mandatory content (Vivekanantharasa et al., 2022). Consequently, many elementary schools have eliminated the English lesson. This has become a challenge for English teachers at the junior high school level. Therefore, English academics and practitioners should be more motivated to upgrade their knowledge and innovate to deal with problems that arise.

In this 5.0 era, where humans and technology live side by side the use of information and communication technology (ICT) in learning can be an effective solutio. The use of ICT in education was able to transform the teaching and learning process (Ishaq et al., 2020). Additionally, ICT has made it possible for individuals to access and learn about a variety of resources outside of the classroom (Ghavifekr et al., 2014). One of the benefits of adopting ICT is being able to support the process of creating a dynamic teaching and learning environment (Gjelaj et al., 2020).

An electronic module is one of the ICT products designed to stimulate interest in learning and can help students visualize abstract concepts. It can be easily accessed by students using computers and other devices anytime and anywhere, giving them the opportunity to receive immediate feedback and fully comprehend the material (Saraswati et al., 2019). The e-module is a structured collection of learning materials presented electronically to enhance the learning experience and facilitate achieving competencies at various complexity levels (Wisco et al., 2011). According to Prastowo, an interactive e-module is a module that integrates multiple interactive elements such as text, graphics, audio, video, or animations (Prastowo, 2019). So, the e-module interactive can be defined as dynamic teaching material that integrates various interactive elements, such as text, graphics, audio, video, and animations, that enable the users to actively engage with the module's content.

To design an interactive e-module, platform, namely Heyzine flipbook, is possible. Heyzine flipbook is a flipbook maker that can include files in the form of PDFs, images, videos, and animations so that the flipbooks are more interactive (Humairah, 2022). Besides that, this platform is free, and the features are quite complete.

An interview was conducted with the English teachers SMPN 2 Warunggunung. The researcher obtained the information that many seventh-grade students struggle with their basic English skills because of the lack of English lessons during their elementary school education. The teacher finds it challenging to address this issue, especially given the time constraints that would arise from needing to cover all the elementary school English materials. In addition, the use of learning media and ICT is still limited in teaching and learning activities.

Therefore, the researcher was interested in developing an interactive e-module based on Heyzine Flipbook as a companion medium for student learning that can be accessed anytime and anywhere. The interactive e-module, which contains basic English material as introductory material for the seventh-grade student, is an adaptation and modification of material in students' English textbook namely "Chapter 0" of *English for Nusantara untuk SMP/MTs Kelas VII*.

"Chapter 0" is designed to support students' learning processes, especially those who have no experience learning English in elementary school. The material presented in this chapter includes: Alphabets, Numbers, Days of The Week, Month of The Year, Family Members, Telling Time, WH-Questions, School Subject, Colors, and Simple Instructions (Damayanti et al., 2023). The e-module will contain audios, videos, pictures,

and online quizzes. The development conducted refers to criteria of a good interactive e-module according to Riyana (2007), namely: self-instructional, self-contained, stand-alone, adaptive, user-friendly, visualization with multimedia, engaging display and high-quality resolution, and learning engagement and reinforcement.

Several studies have been carried out to explore the development of interactive e-modules in various subjects and educational levels. The first study, conducted by (Saraswati et al., 2019) aimed to create an interactive e-module on thermochemistry for senior high school grade XI/MA level. They used Kvisoft Flipbook Maker as a tool for developing a chemistry magazine-based teaching material. In the second study, (Daud et al., 2022) focused on developing an interactive e-module for the English Structure course to enhance digital learning in the English Study Program at Universitas Riau, Indonesia. The third study, conducted by (Novia et al., 2021), examined the impact of using an e-module based on mobile learning as an interactive teaching media for English. The study aimed to assess the improvement in students' motivation and English language proficiency. Generally, the results of the studies state that e-modules, especially the interactive e-module create a positive impact on the learning environment, which is indicated by the appropriateness of the media and student responses which the majority rate as good and are proven to improve performance in teaching and learning.

There have been many studies discussing the development of the e-module as an interactive teaching and learning media. However, the previous studies had different focus subjects and education levels, and they also used different flipbook makers from this research and development. The development of an interactive e-module using Heyzine Flipbook for English teaching and learning remains relatively unexplored. Therefore, to fill this gap this study aims to: 1) develop an interactive e-module on "Chapter 0" of English for Nusantara by using Heyzine Flipbook for the seventh-grade students of SMPN 2 Warunggunung; 2) validate the feasibility of the interactive e-module on "Chapter 0" of English for Nusantara for the seventh-grade students of SMPN 2 Warunggunung. The development is expected to provide an alternative solution for students to learn basic English material flexibly and independently.

METHODS

The method of this study was Research and Development (R&D), a method which is utilized to produce or develop a specific product and test the validity and effectiveness of that product (Sumarni, 2019). The R&D was conducted using Borg and Gall model adapted by Sugiyono. This model consists of 10 stages: potential and problem, data collection, product design, design validation, design revision, product trial, product revision, application trial, final product revision, and mass production (Sugiyono, 2013). In the implementation, this research was only conducted in eight stages because the

product revision and final product revision stages were not needed because no suggestions were found for revising again after the trial.
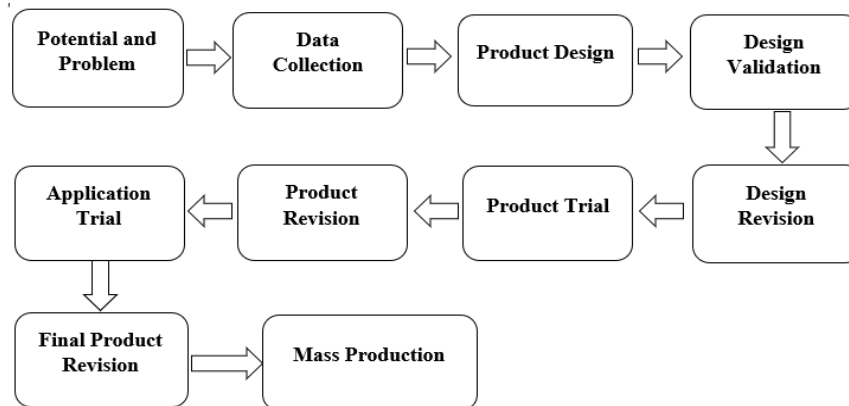

Figure 1. R&D with Borg and Gall Model addapted by Sugiyono

The participants of this research were a material expert, a media expert, two English teachers, and the seventh-grade students, 10 students in the small group and 20 students in the large group. The research was conducted at SMPN 2 Warunggunung.

The data collection technique was through interviews at the potential and problem stage and the data collection stage, as well as using a questionnaire that included expert validation sheets and teacher and student questionnaires at the product trial and application trial stages. The questionnaire used a Likert scale, with a scale of 1–5 for the expert validation sheet and a scale of 1-4 for the teacher and students' questionnaire. The questionnaire refers to the criteria of a good interactive e-module according to Riyana (2007), namely: self-instructional, self-contained, stand-alone, adaptive, user-friendly, visualization with multimedia, engaging display and high-quality resolution, and learning engagement and reinforcement. The results obtained from the questionnaire were then analyzed using the following formula (Triana, 2021):

$$P = \frac{Total\ score\ of\ data}{Ideal\ maximum\ score} \times 100\%$$

Explanation:
P = Percentage Score

Table 1. Feasibility Criteria (Sari & Setyasto, 2021)

Feasibility Percentage	Criteria
86% - 100%	Highly Feasible
66% - 85%	Feasible
46% - 65%	Feasible Enough
26% - 45%	Less Feasible
<25%	Not feasible

Table 2. Users' Response Criteria (Arisa, 2022)

Criteria	Interpretation
85% ≤ RS	Highly Positive
70% ≤ RS < 85%	Positive
50% ≤ RS < 70%	Less Positive
RS < 50%	Not Positive

RESULTS AND DISCUSSION

The focus of this research is to develop and know the feasibility of the interactive e-module on "Chapter 0" of English for Nusantara by using Heyzine Flipbook for the seventh-grade students of SMPN 2 Warunggunung. This development was carried out to facilitate students having the opportunity to study basic English material that should be studied in elementary school independently.

1. Development Process

In the development process, the research was conducted only in eight stages, namely: 1) potential and problem; 2) data collection; 3) product design; 4) design validation; 5) design revision; 6) product trial; 7) application trial; and 8) mass production. The revision stage was only carried out once, namely at the design revision stage, because based on the test results at the product trial and application trial stages, no recommendations were found to revise the product.

a. Potential and Problem

At this stage, the researcher was looking for information from the field to find out the conditions and problems that arise in English teaching and learning at SMPN 2 Warunggunung by interviewing the English teacher. The researcher found that many seventh-grade students lack basic English skills because they missed English lessons in elementary school. Teachers struggle with this issue due to time constraints and limited learning resources, including ICT use.

b. Data Collection

At this stage, the researcher collected data by reviewing the coursebook, journal articles, theses, and other related studies. First, information was obtained that the English textbook for class VII used was *English in Mind, 2nd Edition, Grade 7th*, by Cambridge. In the book, there is an introductory chapter in the form of exercises on basic English material.

Then, the researcher obtained other information from another English teacher that the textbook used apart from English in Mind by Cambridge was *English for Nusantara untuk SMP/MTs Kelas VII*, but the most dominant one used is *English for Nusantara*. In this book, there is also an introductory chapter on basic English, but it only contains an explanation of the material and several related learning videos.

On the other hand, the researcher also collected some related English coursebook from different publishers. Some of them are *Interactive English 1: Junior High School Year*

VII by Yudhistira and *English for Everyone: Junior (Beginner's Course (First American edition).*

 c. **Product Design**

The researcher designed an interactive e-module that refers to the introductory chapter in the *English for Nusantara* book, namely "Chapter 0", by integrating video, audio, images, and online quizzes. Furthermore, the researcher also added material with content from several relevant sources.

This interactive e-module was designed as a PDF first on the Canva platform. The design includes the cover design, preface page, scope and sequence, table of contents, user instructions, material contents, evaluation, and reference.
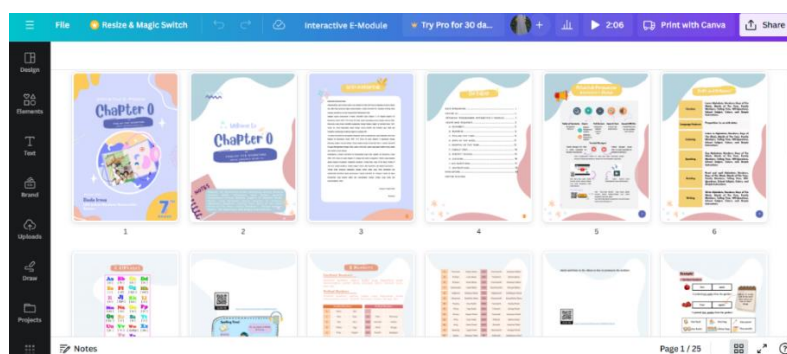

Figure 2. Initial E-Module Design Result on Canva

The next step was uploaded and edited on the Heyzine Flipbook platform. Customized the flipbook "STYLE," including the title, page effects, background, controls, table of contents, and background audio. In the "INTERACTIONS" menu add the video, images, audio, and the quizzes.
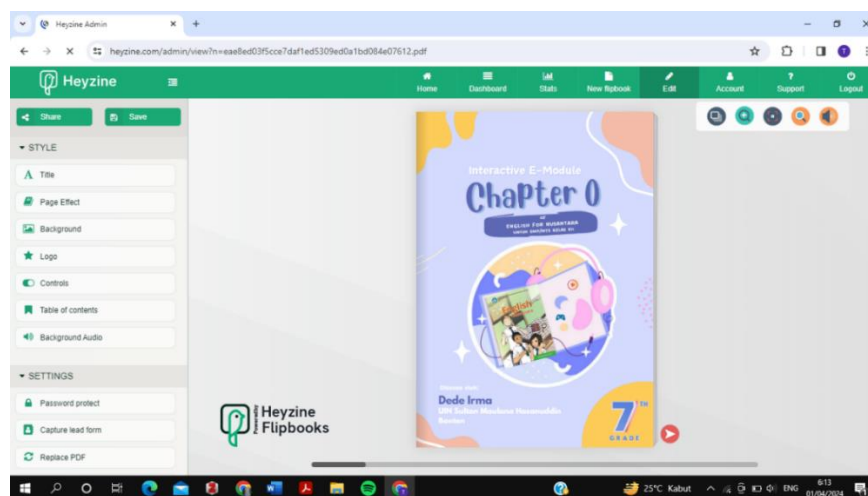

Figure 3. Heyzine "Edit" page

After costuming and editing the flipbook, save it at the "Save" menu and share the link or barcode by clicking "Share." The results displayed are as follows, depending on the device used:
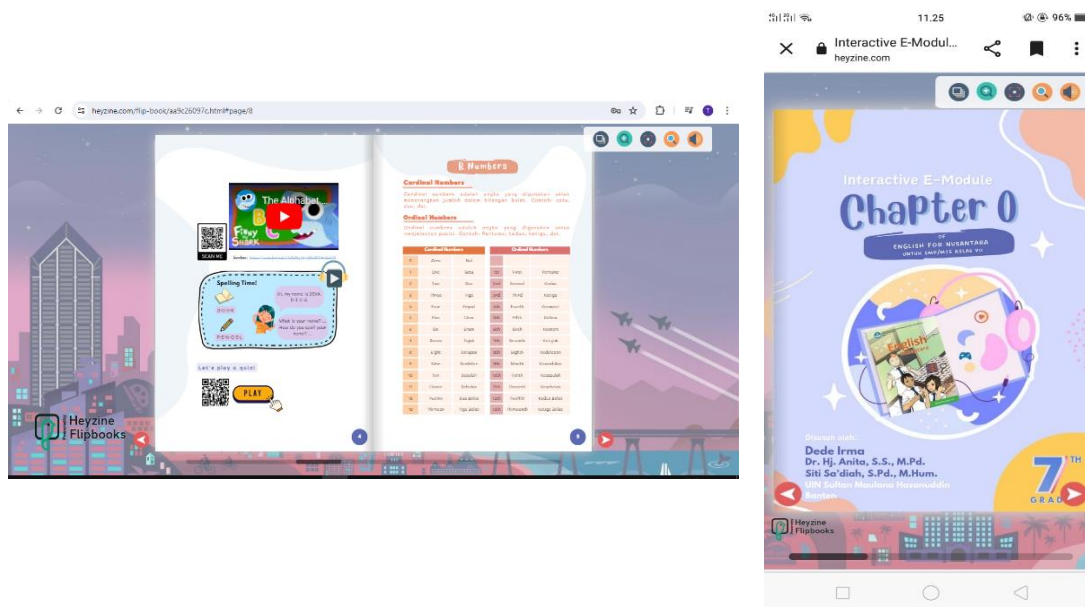

Figure 4. E-Module Interactive Display on Laptop/PC (left) and Smartphone (Right)

d. Design Validation

The design result then validated by a material expert and a media expert, the validation refers to the interactive e-module development criteria. Apart from that, validators can also provide suggestions for further development. At this stage, the following results are obtained:

Table 3. The Result of Design Validation

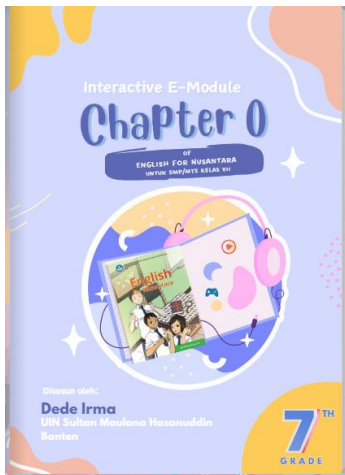| Validation Results	Validator	
	Material Expert	**Media Expert**
∑Score	71	66
Feasibility Percentage	94,66%	88%
	(Highly Feasible)	(Highly Feasible)
Suggestion	"The design of the e-module is good enough. For example, the things that can be added is adding glossary (group of vocabulary/phrase that learn of each material."	➢ Back sound is too loud; ➢ Add name your supervisor; Generally, your media is good, can applied.

| Conclusion	Eligible for field testing without revision.	Eligible for field testing with revision according to the suggestions.

Based on the table, for the feasibility of the material, the score was 77, or the feasibility percentage was 94,66%. The media feasibility study obtained a score of 66, or the feasibility percentage was 88%. According to **Table 1.** Expert Assessment Criteria for Media Feasibility, both of which are interpreted as the "highly feasible" category (Sari & Setyasto, 2021). Based on the design validation, the e-module was stated to be valid and eligible by achieving the "highly feasible" category from the material expert and media expert. Then it can proceed to the next stage, namely design revision.

e. Design Revision

Based on the results of the design validation, several suggestions were obtained for developing the design of this interactive e-module. The suggestions collected were then selected according to the validation conclusions and adjusted to the needs of e-module development. Suggestions used as a reference for revision are suggestions from the media expert, while suggestions from the material expert are optional because, based on expert conclusions, the interactive e-module is eligible for field testing without revision.

Table 4. Design Revision

No.	Before	After
1.	There are not the supervisors' names on the cover.	There are the supervisors' names on the cover.
2.	The backsound is too loud.	The backsound volume is on the minimum.
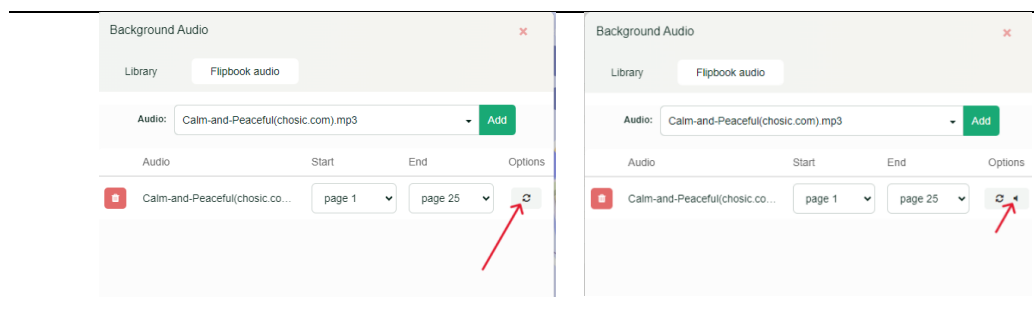
f. Product Trial

The revised interactive e-module was then tested on a small group of 10 students in the seventh grade of SMPN 2 Warunggunung. Apart from the students, two English teachers also filled the prepared questionnaires. The results of the questionnaires are as follows:

Table 4. The Result of Product Trial

Participant	Result	Category
Teachers	96,25%	Highly Positive
Students	84,5%	Positive
Average	**90,54%**	**Highly Positive**

Based on the table above, the result percentage of student questionnaire scores reached 84.5%, or in the "positive" category, and the result percentage of teacher questionnaire scores reached 96.25%, or in the "highly positive" category. Therefore, the average was 90,54%, or the "highly positive" category (Arisa, 2022).

g. Application Trial

Due to there was no revision of the results of the product trial stage, the interactive e-module was tested on a large group, consisted of 20 students. The results of this stage are as follows:

Table 5. The Result of Application Trial

Analysis	Result	Category
Min	75%	Positive
Max	97,5%	Highly Positive
Average	**88,62%**	**Highly Positive**

The table shows that out of 20 questionnaires distributed, the average percentage score reached 88.62%. This indicates an increase in percentage from the students' questionnaire result of application trial stage of 4.15%. The result was interpreted as "highly positive."

h. Mass Production

In this stage, the researcher provided the link and barcode for accessing the interactive e-module to teachers and students. The link and barcode were given to one of the English teachers at SMPN 2 Warunggunung and were witnessed by 22 seventh-grade students. Additionally, the interactive e-module was equipped with a password to restrict access to only those with the password.

2. Discussion

Overall, the media validation and trial process refer to the criteria of a good interactive e-module by Cepi Riyana, namely: self-instructional, self-contained, stand-alone, adaptive, user-friendly, representation of contents, visualization with multimedia, engaging display and high-quality resolution, and learning engagement and reinforcement (Riyana, 2007). These nine criteria are implied in the research instrument in the form of a questionnaire, namely expert validation sheets and student and teacher questionnaires.

Thus, the integration of ICT in education has a positive impact and is able to transform the educational process (Ishaq et al., 2020). ICT supports students to access learning flexibly (Ghavifekr et al., 2014). The e-module, as an ICT product, is an alternative for presenting learning material that can be accessed anytime and anywhere (Saraswati et al., 2019). Then, the interactive e-module is designed as a level-up version of the e-module, which allows students to learn independently and interactively.

The process of developing this interactive e-module has been validated and has received a highly positive response from users. This success mirrors the findings of a previous study by Saraswati et al., (2019), where the interactive e-module developed received praise from both teachers and students. Similarly, a study by Daud et al., (2022), the research also reported a positive reception to the interactive e-module, noting its appeal and ease of use in improving English skills. Furthermore, a study by Novia et al., (2021) supports the positive impact of interactive e-modules, demonstrating that the mobile-friendly e-module effectively enhances student engagement and language proficiency in English learning.

The previous studies have consistently shown the positive impact of e-modules, especially an interactive e-module, on the learning environment. These studies have demonstrated the feasibility of such media, with the majority of students giving them positive ratings. This positive reception has been associated with improved teaching and learning performance overall. This reinforces the findings of this research.

CONCLUSION

This research is the development of an interactive e-module based on the Heyzine

flipbook for the material "Chapter 0" of the English for Nusantara book, designed for the seventh-grade students of SMPN 2 Warunggunung. The development process followed the Borg and Gall model adapted by Sugiyono. Because there were no suggestions for revision after the product trial and application trial were conducted and it was stated that it was eligible, this research only consists of eight stages, namely: 1) potential and problem; 2) data collection; 3) product design; 4) design validation; 5) design revision; 6) product trials; 7) application trials; and 8) mass production.

This interactive e-module was also stated to be highly feasible by the material expert and the media expert, and it received a positive response from seventh grade students and English teachers at SMPN 2 Warunggunung. At the design validation stage, the interactive e-module achieved a feasibility percentage of 94.66% by the material expert and 88% by the media expert, or "highly feasible". At the product trial stage, the average percentage score was 90,54% (highly positive). At the application trial stage, the average percentage score reached 88.62% (highly positive).

In conclusion, based on the findings, the interactive e-module based on Heyzine Flipbook on "Chapter 0" of English for Nusantara for seventh grade can be one of the alternative learning media to help students learn basic English materials. Additionally, the concept of utilizing ICT that integrates various content within it also helps students learn independently and flexibly while still under the supervision of teachers.

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