



# Development of Web-based E-Module Design on Intermediate Listening Comprehension Course

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**Abstract.** The purpose of this study is to ascertain the web-based e-module's design, the level of feasibility of the application in the Intermediate Listening Comprehension course, and the efficacy of these applications in raising students' motivation to learn. The ADDIE development model is applied in this development. Quantitative descriptive analysis was constructed by analyzing quantitative data in the form of numbers obtained from questionnaires and tests to make it easier to conclude the data analysis carried out on media design, media feasibility and the level of media effectiveness on student learning motivation. This study was carried out at Unimed's English Literature Study Program. The efficacy of the web-based e-module media application was assessed using an expert validation questionnaire and a student response questionnaire as the data collection instrument in the study. Through expert validation and student response trials, the e-module feasibility test of material and media experts yielded findings. An average percentage value of 81.8% was reached in the highly feasible category. This program successfully measured student motivation utilizing web-based e-modules, as seen by the average score of 82.2% that was acquired.

**Keywords:** E-module, Learning Motivation, Web-based Course

## 1 INTRODUCTION

The development of increasingly sophisticated technology makes changes in all aspects of life. Science and technology (IPTEK) development is vital in education, especially in the ease of accessing learning materials to support learning activities. As an optimization, the impact of technology in education carried out in learning as a learning resource other than books is very significant. As found in [1], using teaching media in the teaching and learning process can arouse new desires and interests, arouse motivation, stimulate learning activities, and even psychologically influence students. Therefore, educators are strongly supported to become professional educators using information and communication technology (ICT) to organize educational improvement programs, as stated in [2]. As characterized in [3], learning media incorporates anything that is utilized to transmit messages and can provoke a learner's curiosity, motivation, and

consideration to advance intended purposefulness, as well as manageable learning activities.

Educators design a learning media that is as interesting as possible so that the attention of students is focused on the material being taught, and it will be easier for students to capture the material presented by educators. An essential component in learning is learning media, which is used as an intermediary to convey ideas, ideas, or opinions so that what is conveyed is well received. Educators, as learning media makers in the current era are required to create engaging, unique, and entertaining learning so that learning is not inferior to information technology and the increasingly sophisticated entertainment world. In [4], it is stated that students feel bored learning physics materials, especially vector analysis materials and circular motion. Students' boredom arises because educators do not motivate students during learning.

In the English Literature Study Program at Universitas Negeri Medan (Unimed), of the four English skills (Listening, Speaking, Reading & Writing) tested on the IELTS English Language Proficiency Test, the listening ability is one of the skills that has a relatively lower score compared to the other three English skills even though nine credits of courses have been set for the mastery of listening skills which if converted into a duration of about 105 hours which is the length of meetings in the classroom alone, not to mention any assignments or activities outside the classroom that should be able to add to the ability to listen which is actually a long enough duration for the development of 1 ability from Level A2 to B2.

Lack of listening skills also affects other English skills. For example, good listening skills are needed to communicate in English and create two-way communication. In addition, listening skills can also help obtain information, where many sources of information in learning can be obtained in English. It is in line with what is stated in [5], that one of the significant language skills to master is listening comprehension, in which individuals can speak and comprehend one another utilizing their sense of hearing. Therefore, the occurrence of the problems is very unfortunate considering many things that are missed due to these problems. Obviously, several factors cause the phenomenon to occur. One identified factor was the lack of motivation from students to continue to do listening exercises related to listening skills. One of the causes of this lack of motivation is that students do not feel interested in practicing because the topics and the teaching media of the listening comprehension course do not interest them.

Based on the description above, this research will develop listening learning media that incorporates interesting content into exercises packaged in web-based e-modules to motivate students to continue improving their English listening skills.

## 2 METHOD

This research was a type of research and development (Research and Development). In [6], it was explained that ADDIE was a framework that administered the creation of educational goods and other learning materials appropriately. It is in line with the purpose of this research: to produce a web-based e-module to train students' listening comprehension skills in the Department of English Language and Literature Universitas

Negeri Medan. The development of a web-based e-module in its implementation referred to the ADDIE development concept: Analysis, Design, Development, Implementation, and Evaluation. The following is an ADDIE research flowchart based on the steps previously described.



**Fig. 1.** ADDIE research flow diagram.

Stages of the ADDIE development model:

1. Analysis deals with the stage of problem identification, analyzing the work situation, and observing the environment in the research. This stage involves gathering information, defining the scope, and understanding the needs of the research topic to discover what products need to be developed.
2. Design is designing products according to needs where the methodology is outlined. It entails planning the tools, strategies, and approaches needed to accomplish research objectives.
3. Development is the activity of making and testing products. This stage is equipped for implementing the proposed structure, following a structured approach based on specifications outlined in the previous two steps suggested in [7].
4. In implementation, researchers apply their interventions or carry out the designed experiment or study.
5. The evaluation stage is akin to the data analysis and conclusion phase. It involves evaluating the effectiveness of the product or method and determining whether the research objectives were achieved according to specifications.

The ADDIE framework was likely selected due to its structured yet flexible approach, which suited the systematic research requirements. It outlined clear steps for creating, executing, and assessing educational interventions, which were essential for meeting research goals effectively. This process's iterative nature made researchers improve their methods through continuous evaluation, leading to successful research outcomes.

The data collection instruments used in this web application-based e-module development research were expert validation questionnaires, student response questionnaires, learning motivation questionnaires, and student learning outcomes. Quantitative descriptive analysis was constructed by analyzing quantitative data in the form of numbers obtained from questionnaires and tests to make it easier to conclude the data analysis on media design, media feasibility, and media effectiveness on student learning motivation.

In calculating the percentage of the feasibility of the test, each sub-variable uses the following formula :

$$\text{Percentage} = \frac{\sum \text{score given by validator}}{\sum \text{maximum score}} \times 100\%$$

The total score was gained from the scores given by the validators, while the maximum score was gained from the amount of questions asked.

### 3 RESULTS AND DISCUSSION

Web-based learning can be defined as the use of web technology applications in the world of learning that aim to ensure the success of an educational process. In simple terms, in [8], it is said that as long as the learning process is carried out by utilizing internet technology, it can be called web-based learning. This development provided learning media through web-based modules and web applications.

#### 3.1 The Result of Web-based E-module Development

Making a web-based e-module application on the Intermediate Listening Comprehension course consists of several stages that have been previously designed. After several stages, the display of some Intermediate Listening Comprehension e-module web is divided into two views: the lecturer and the students. They can be seen as follows:

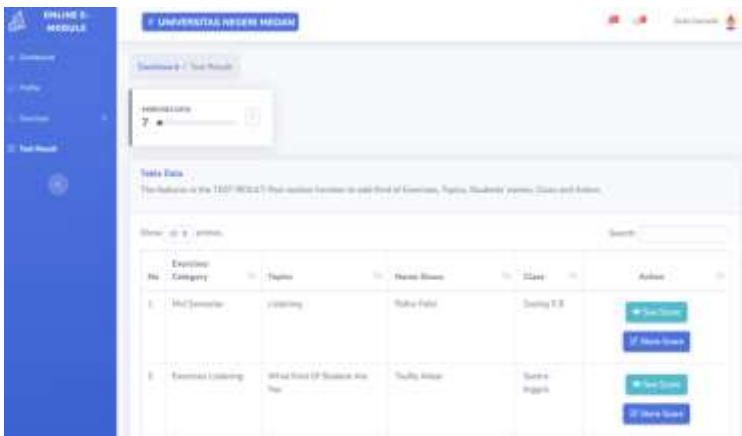
##### Lecturer Feature

When entering the listening e-module web page, viewers will be faced with the main display of the website, where viewers can enter the menu after clicking the log-in button, as shown in the following figure;



**Fig. 2.** Front page of the listening e-module website.

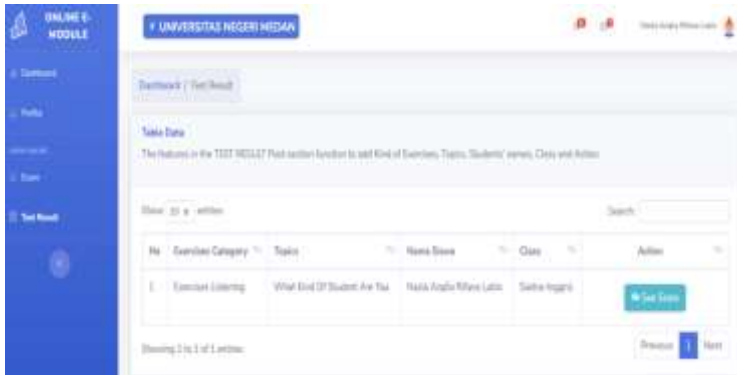
In the **exercises** tab, lecturers can set the category of listening exercises that can be given to students in the form of multiple choice or essay. After the students have finished working on multiple choice exercises, lecturers can find the scores obtained by students from the **test result** tab. Because it is connected via the internet, all of this can be done in real time, making it easier for lecturers to access student grades. However, for essay questions, there needs to be a manual lecturer assessment before the grades are shared with students. The following figure shows how lecturers can access the grades of the exercises done by students by clicking the **see score** button and storing the scores.



**Fig. 3.** Test Result Tab on Lecturer Feature.

## Student Feature

On the student feature, they can find out the assignments given and submit them directly on the website. They can also check the assessment results from their lecturer. The following figure shows how students can see the grades of their exercises by clicking the **score** button.



**Fig. 4.** Test Result Tab on Student's Feature.

## 3.2 Feasibility Test

Validation was conducted after the web-based e-module was completed. The validity technique is used to obtain data on the validity of the web-based e-module learning media developed based on the assessment of experts and practitioners. Validation data is obtained by providing a validation sheet containing questions related to the e-module to two media experts from Universitas Negeri Medan and one programmer who acts as validators to assess the developed web-based e-module learning media. The validation results are used to consider revising the product to be developed.

**Table 1.** The Results of Recapitulation of Validation Data from Media Experts.

Aspects	Score Acquisition	Percentage	Category
Display screen design	129	85.6%	Very feasible
User-friendliness	81	92.6%	Very feasible
Consistency	49	82.2%	Very feasible
Usability	108	85.6%	Very feasible
Audio and Graphics	99	92.6%	Very feasible
Average	84	89.2%	Very feasible

Based on Table 1, it is explained that the assessment of 2 media experts and one programmer that has been carried out on the aspect of screen design display obtained a percentage value of 85.6%, the user-friendliness aspect obtained a percentage value of 92.6%, the consistency aspect obtained a percentage value of 82.2% while in the aspect of usability obtained a percentage value of 90.0% and in the aspect of audio obtained a percentage value of 95.56% so that the average feasibility test is 89.2% with a very feasible category.

**Table 2.** The Results of Recapitulation of Validation Data from Material Experts.

Aspects	Score Acquisition	Percentage	Category
Content quality	164	80.0%	Very feasible
Linguistic	102	84.4%	Very feasible
Presentation	96	80.0%	Very feasible
Average	120	81.5%	Very feasible

Based on Table 2, it is explained that the assessment of the material that has been carried out in the aspect of content quality obtained a percentage value of 80.0%, while in the aspect of linguistics obtained a percentage value of 84.4% and the aspect of the presentation obtained a percentage value of 80.0%. So, the average value obtained on the material expert is 81.5%, with a very feasible category. Based on the experts' recapitulation results, the web-based e-module is very feasible for students to use and test.

After completing the web-based e-module validation stage, the E-module is implemented for Unimed English Literature students in the Intermediate Listening Comprehension course. This media test was implemented in 2 classes of 56 students when the learning began and after the learning was complete. Students were asked to fill out a respondent questionnaire containing 30 questions to provide feedback on the listening web-based e-module.

**Table 3.** The Recapitulation of Students' Responses.

Aspects	Score Acquisition	Percentage	Category
Material Presentation	129	77.6%	Feasible
Linguistic	81	70.0%	Feasible
Usability	49	72.3%	Feasible
Audio and Graphics	99	79.3%	Feasible
Average	120	74.8%	Feasible

Based on Table 3, it is explained that the response of students to determine the feasibility of listening to web-based e-module in the aspect of material presentation obtained a percentage value of 77.6%, in the aspect of linguistics obtained a percentage value of

70.0% while in the aspect of usability obtained a percentage value of 72.3%, while in the aspect of audio and graphics obtained a percentage value of 79.3%. So, the average value of the four aspects that can be obtained is 76.53% with a feasible category value. It can be concluded that the listening e-module website is effective for students in English Literature study programs. It is in line with what is stated in [9] that effectiveness is the conclusive indicator for evaluating the quality of the developed product, and it is determined by administering the tests.

**Table 4.** Recapitulation of Expert Validation Data and Learner Response Trials

Aspects	Percentage	Category
Media expert validation	89.2%	Very Feasible
Material expert validation	81.5%	Very Feasible
Students' Responses	74.8%	Feasible
Average	81.8%	Very feasible

Based on Table 4, the expert validation and learner response trials assessment obtained an average percentage value of 81.8% with a very feasible category. The average score results show that the learning media for the listening course in the form of a web-based e-module has met the eligibility requirements of expert validation and student response trials.

**Table 5.** The Recapitulation of Students' Motivation.

Aspects	Score Acquisition	Percentage	Category
The desire to learn	574	85.4%	Very feasible
Curiosity	667	82.4%	Very feasible
Interest in the materials	432	80.0%	Very feasible
Encouragement	437	80.9%	Very feasible
Persevere on assignments	668	82.5%	Very feasible
Average		82.2%	Very feasible

From Table 5 above, it can be concluded that the learning process has been carried out well as expected. The aspect of desire to learn obtained a percentage value of 85.4%, the aspect of curiosity obtained a percentage value of 82.4%, the aspect of interest in materials obtained a percentage value of 80.0%, and the aspect of encouragement obtained a percentage value of 80.9% and last but not least in the aspect of perseverance in persevering on assignments obtained a percentage value of 82.16% so that in measuring the motivation of students using listening web-based e-modules is successful.



## 4 CONCLUSION AND SUGGESTION

Based on the results of media expert validation, the average percentage value is 89.2%, which is a very feasible category. In addition to the validation from the media experts, the material expert validation in the presentation aspect obtains a feasible category with an average percentage value of 81.5%. In the student response feasibility test, the average percentage value in the graphic aspect is 74.8% with a feasible category. So, the web-based e-module can facilitate students' listening learning. Therefore, the product validation results obtained an average percentage value of 81.8%, which is a very feasible category. It can be concluded that the listening web-based e-module is very feasible to use in listening courses. In the learning process, a student's motivation is reflected through perseverance to succeed despite many obstacles. The impact of increased student motivation will also have an impact on learning outcomes. Based on the data on learning outcomes, the average percentage value is 82.2%, which is a very feasible category; therefore, the use of listening web-based e-modules influences on increasing learning motivation. In conclusion, this research successfully developed a listening e-module website as a practical learning tool to enhance English listening skills among students in the English Literature study program Unimed.

As for some suggestions given by researchers related to the implementation of research and things obtained from this research to several parties,

1. Students should be more active in utilizing the media to increase learning motivation and optimally achieve learning objectives and results.
2. Educators should be more creative in developing learning media to increase students' motivation and learning outcomes.
3. For further researchers to be more creative by adding other needs such as project activities and online practicum activities that can be run online.

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