DEVELOPING AN ENGLISH LEARNING MODULE BASED ON CRITICAL THINKING AND PROBLEM-SOLVING SKILLS FOR SENIOR HIGH SCHOOL STUDENTS: HEALTHY FOODS CHAPTER

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ABSTRACT

This study aimed to develop an English learning module integrating critical thinking and problem-solving skills for Grade X students at MA Ash-Shalihin Gowa, focusing on Chapter IV "Healthy Foods". The research employed the Research and Development (R&D) method by adopting the ADDIE model, which consists of Analysis, Design, Development, Implementation and Evaluation stages. However, due to time limitations, the Implementation stage was not conducted. Data were collected through interviews with one English teacher, questionnaires distributed to 25 students and expert validation sheets. The collected data were analyzed using qualitative and quantitative techniques to support the systematic development and validation of the module. The results of expert validation indicated that the module was categorized as valid and appropriate for use with minor revisions, as reflected in the average scores of content feasibility (4.89), presentation feasibility (4.87), language feasibility (4.89) and graphic feasibility (4.87). These findings demonstrate that the module has relevant content, clear organization, appropriate language and adequate visual design to support learning activities effectively. Overall, the developed module is valid and suitable as a supporting learning material. However, it requires classroom implementation to test its effectiveness.

Keywords: English learning module, critical thinking, problem-solving, ADDIE model, Research and Development (R&D).

1) INTRODUCTION

Developing effective instructional materials is essential in improving English as a Foreign Language (EFL) learning, particularly in the context of 21st-century education. Current learning demands not only focus on linguistic competence but also on higher-order thinking skills such as critical thinking and problem-solving. These skills enable students to analyze information, evaluate ideas and respond to real-life situations using English. In line with the *Merdeka* Curriculum, which emphasizes student-centered and meaningful learning, English instruction is expected to integrate language skills with cognitive development. Therefore,

the development of contextualized learning materials that support both language proficiency and thinking skills has become increasingly important.

However, classroom practices still reveal a gap between curriculum expectations and actual learning experiences. Preliminary findings at MA Ash-Shalihin Gowa show that existing English learning materials are largely text-based and focused on memorization, offering limited opportunities for students to develop critical thinking and problem-solving skills. As a result, students often demonstrate low engagement and superficial understanding of the learning content. Theoretically, critical thinking involves reflective and reasoned judgment (Facione, 2011), while problem-solving is a systematic process of identifying and resolving problems (Mayer & Wittrock, 2006). Moreover, learning materials should encourage meaningful engagement and support students' cognitive development (Tomlinson, 2012).

Although previous studies have reported the effectiveness of problem-based learning, limited research has focused on developing structured English learning modules that integrate critical thinking and problem-solving skills within the Merdeka Curriculum. Therefore, this study aimed to develop an English learning module for Grade X students on the topic of "Healthy Foods." The study addressed four research questions concerning students' needs, the module design, the development process, and the evaluation of the module. The findings are expected to provide an alternative instructional resource that promotes interactive, contextual, and meaningful English learning.

2) METHODS

This study employed a Research and Development (R&D) design to develop an English learning module based on critical thinking and problem-solving skills. The development process was guided by the ADDIE model, which consists of Analysis, Design, Development, Implementation and Evaluation stages (Branch, 2009). However, due to time constraints, the study was limited to four stages: Analysis, Design, Development and Evaluation.

The research was conducted at MA Ash-Shalihin Gowa, South Sulawesi. The population consisted of Grade X students, and a sample of 25 students was involved as respondents to represent the target users of the module. One English teacher participated as a key informant to provide contextual information regarding classroom practices and learning needs. In addition, expert validators from the English Education Department were involved to evaluate the quality

and feasibility of the developed module. Data were collected using multiple instruments. Semi-structured interviews were conducted with the teacher to obtain in-depth information about teaching conditions and challenges. Questionnaires were distributed to students to identify their learning needs, preferences, and difficulties. Furthermore, validation checklists were used by expert validators to assess the module in terms of content, presentation, language and graphical aspects. The use of multiple instruments was intended to ensure the validity and completeness of the data (Creswell, 2012).

The data collection procedures followed the ADDIE stages. In the analysis stage, data from interviews and questionnaires were gathered to identify learners' needs and existing conditions. In the design stage, the syllabus were developed based on the analysis results. In the development stage, the module was produced by integrating critical thinking and problem-solving activities into the learning materials. In the evaluation stage, the developed module was reviewed by experts and revisions were made based on their feedback. Data analysis was conducted using both qualitative and quantitative. Qualitative data from interviews and open-ended responses were analyzed through data condensation, data display and conclusion drawing (Huberman & Miles, 2014). Meanwhile, quantitative data obtained from questionnaires and validation checklists were analyzed using descriptive statistics to determine the level of validity of the module. The results of these analyses were used to ensure the quality, relevance and feasibility of the developed learning product.

3) RESULTS

The Result of Analysis Phase

The results of the needs analysis were obtained through questionnaires distributed to 25 students and interviews conducted with one English teacher. The findings indicated that the existing English learning materials, particularly in the "Healthy Foods" chapter, were still not well-structured and did not adequately support the development of students' critical thinking and problem-solving skills. Students experienced difficulties in understanding vocabulary, expressing ideas and relating the material to real-life situations.

The results of the questionnaire showed students' preferences regarding learning materials and activities, as presented in table.

Table 1. The Results of The Learning Ability

Number	Questions	Answers

1	If the material is about Simple Past Tense (Chapter IV: Healthy Foods), how would you prefer to express it?	Showing off in pairs with friends = 48% Write it down in the task book = 44% Demonstrating in front of classmates alone = 20%
2	If the material is about expressions, what kind of expressions do you like to learn the most?	Activities at school = 52% Activities in class = 40% Activities at home = 32% Expressing opinions = 20% Expressing solutions = 16% All the answers mentioned above = 12%

Table 2. The Result of The Learning Priority

Number	Questions	Answers
3	What form of learning material do you like?	Picture form = 52% Text = 40% Dialogue = 28% Presentation = 28%
4	What kind of book design are you most interested in?	Picture = 76% Dialogue = 40% Presentation = 16% Critical thinking exercise = 4%
5	What kind of picture design do you like in a textbook?	Cartoon = 68% Real-life picture = 56% Caricature = 20%
6	When creating short dialogue, what do you need most?	Examples of written conversations in the book = 64% Audio/video = 44% Examples of conversations from teachers = 36% Original photos = 24% Others (games) = 4%

Table 3. The Result of Learning Problems

Number	Questions	Answers
7	What difficulties do you sometimes experience when learning English? (You may choose more than one).	Not knowing English vocabulary and pronounciation = 52% Not having English books and dictionaries = 36% Lacking motivation to learn English = 32% Not understanding the material (in translating English texts and the teacher's explanations) = 28% The material in the textbook does not provide a complete explanation = 20% I lack confidence in giving reasons or arguments = 20% I find it difficult to analyze Texts = 12% I don't have any difficulties = 12% I feel embarrassed to speak

		in front of the class = 8% I don't like doing assignments from the teacher = 4%

Table 4. The Result of Learning Style

Number	Questions	Answers
8	Do you like it when the teacher provides opening activities before the lesson begins (such as an introduction or light activities)?	Yes = 84% No = 16%
9	What types of opening activities do you like the most? (Choose up to 3 activities)?	It is enough to pray = 76% Ice Breaking = 60% Warning up = 36% Inspiration stories = 32% Problem-solving games = 20%
10	When class starts, what do you prefer the teacher to do?	teacher's explanation = 60% Warning up = 44% Choose to read the instructions in the book = 36% Analyze a problem = 8%
11	What kind of learning method do you prefer in each chapter of the lesson?	By watching learning Video = 56% By playing games = 48% By accepting theory = 24% By learning to solves Problems = 20% All the answers mentioned above = 8%
12	What learning model do you prefer?	Discussion = 72% Couple = 40% Individual = 28%
13	If you are asked to do a project in class, which one do you prefer?	Individual project = 44% Group project = 75% Partner project = 20%
14	If you were asked to give a presentation, which would you prefer?	Group presentation = 68% Partner presentation = 44% Individual presentation = 32%
15	Do you like it when lessons are accompanied by games (game learning)?	Yes = 92% No = 12%

Based on the results of the student needs questionnaire, it is known that students want learning materials that are visually engaging, interactive and supported by pictures and videos. They also prefer group-based activities and contextual tasks related to their daily lives to help them better understand the material and express their ideas.

The Result of Design Phase

In the design stage, the results provided information for the syllabus development process. The syllabus was designed based on the results of the needs analysis, learning objectives and the

Merdeka Curriculum. It included components such as learning objectives, materials, time allocation, need analysis, material design learning activities and evaluation. In addition, the syllabus integrated critical thinking and problem-solving stages into the learning activities to support students' cognitive development. The design also emphasized contextual materials, visually engaging elements, and group-based activities to align with students' preferences and learning needs.

The Result of Development Phase

At this stage, the researcher developed the module based on the previously designed syllabus. The module was successfully developed by integrating appropriate materials with critical thinking and problem-solving stages. The development results present the sequence of components in each unit, starting from the cover, learning objectives, main learning activities, and ending with evaluation tasks. In addition, the module includes contextual materials, visually engaging elements and student-centered activities to support meaningful learning. The following section presents several examples of the modules before and after development.

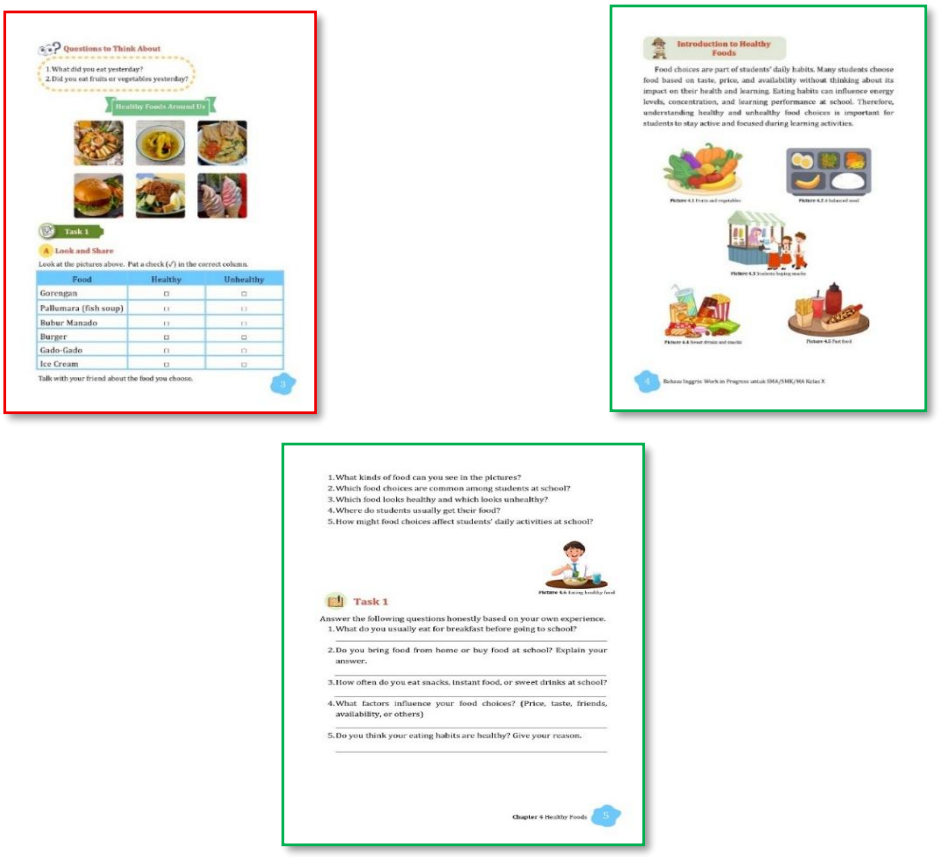


Figure 1. Learning Activities part 1 before and after development

Before development, the activities mainly focused on recalling personal experiences and identifying information, without guiding students to analyze reasons, consider consequences, or identify problems related to their eating habits, thus not strongly supporting critical thinking and problem-solving skills. After development, the introduction became more structured and meaningful by presenting contextual explanations about food choices and their impact, supported by real-life pictures and reflective questions. As a result, students were guided to observe, analyze causes, identify problems and consider the effects of their choices, which clearly directed them toward critical thinking and problem-solving from the beginning of the lesson.

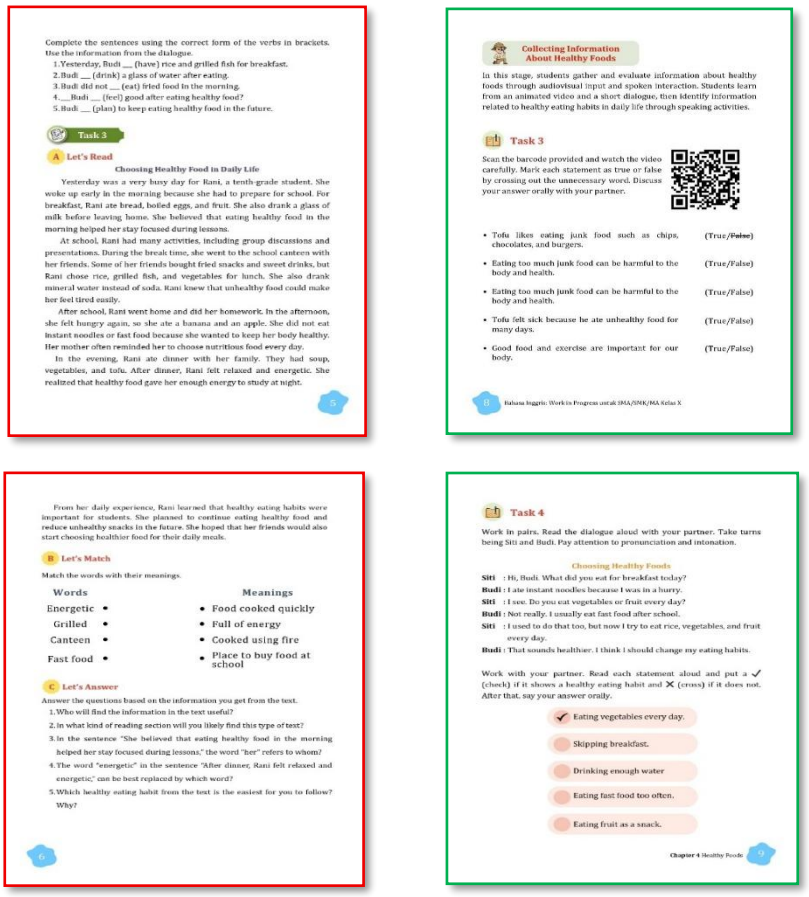


Figure 2. Learning activities part 2 before and after development

Before development, the task focused on reading a single text about students' eating habits and answering comprehension questions, emphasizing only the understanding of explicit information with a simple text-based format and limited visual support. After development, the activity was expanded into a Collecting Information stage, where students gathered information

from various sources such as videos, dialogues, and short texts, and were required to identify key information and evaluate statements. This stage was also supported by a clearer layout, relevant images, and more structured instructions, making the learning process more engaging and easier to follow.

The Result of Evaluation Phase

Table 5. The Result of Syllabus Validation

Aspect	Score	Category
Learning Material	4.85	Very Valid
Learning Objectives	4.92	Very Valid
Learning Activities	4.93	Very Valid
Skills	4.80	Very Valid
Activity	4.90	Very Valid
Evaluation	5.00	Very Valid

Table 6. The Result of Module Validation

Aspect	Score	Category
Content Feasibility	4.89	Very Valid
Presentation Feasibility	4.87	Very Valid
Language Feasibility	4.89	Very Valid
Graphic Feasibility	4.87	Very Valid

4) DISCUSSION

Analysis Phase

The findings of the analysis stage revealed a gap between the expectations of the Merdeka Curriculum and actual classroom practices. The existing learning materials were still dominated by text-based and memorization-oriented activities, which limited students' opportunities to engage in higher-order thinking skills. This finding supports the view that instructional materials play a crucial role in promoting meaningful learning and cognitive engagement (Tomlinson, 2012). In addition, the needs analysis indicated that students preferred visually engaging, interactive and contextual learning materials. These findings are consistent with 21st-century learning principles, which emphasize active student participation. Therefore, the analysis stage provided a strong

foundation for developing learning materials that integrate critical thinking and problem-solving skills based on students' needs.

Design Phase

In the design stage, the syllabus was developed based on the results of the needs analysis, learning objectives, and the Merdeka Curriculum. The integration of critical thinking and problem-solving stages into learning activities reflects the theoretical perspective that learning should involve active cognitive processes such as analyzing, evaluating and making decisions (Facione, 2011). Furthermore, the emphasis on contextual materials, visually engaging elements, and group-based activities aligns with student-centered learning principles. This indicates that the design stage successfully bridged theoretical concepts and practical classroom needs.

Development Phase

In the development stage, the designed syllabus was transformed into a structured and comprehensive learning module. The integration of critical thinking and problem-solving stages into each activity allowed students to actively engage in the learning process. The use of various learning inputs, such as texts, dialogues and videos, supported students in collecting and evaluating information more effectively. This process is in line with the ADDIE model, which emphasizes systematic development to produce effective instructional materials (Branch, 2009). Compared to the previous materials, the developed module showed improvements in terms of structure, activity variation and visual design, which contributed to increased student engagement.

Evaluation Phase

In the evaluation stage, the developed module was validated by expert validators to assess its feasibility in terms of content, presentation, language, and graphical aspects. The validation results indicated that the module achieved a very valid level, suggesting that it is appropriate to be used as a supplementary learning resource. This evaluation process is also consistent with the ADDIE model, which ensures the quality of instructional products before implementation (Branch, 2009). Overall, the findings of this study indicate that the developed module is relevant, systematic, and capable of supporting both students' English learning and the development of critical thinking and problem-solving skills. Despite the positive findings, this study has several limitations. First, the research was limited to the analysis, design, development and evaluation

stages without conducting the implementation stage in a real classroom setting. Second, the number of participants was relatively small, involving only 25 students and one teacher, which may limit the generalizability of the findings. In addition, the evaluation of the module was limited to expert validation and did not include direct measurement of students' learning outcomes. Therefore, future research is recommended to conduct classroom implementation and experimental studies to examine the effectiveness of the developed module in improving students' critical thinking, problem-solving skills and English proficiency.

5) CONCLUSION

This study aimed to develop an English learning module based on critical thinking and problem-solving skills for Grade X students in the "Healthy Foods" chapter. The findings revealed that existing learning materials were not well-structured and did not adequately support higher-order thinking skills, indicating the need for more contextual and student-centered materials. Through the ADDIE model, the developed module successfully integrated critical thinking and problem-solving stages into learning activities, resulting in a more structured, engaging, and meaningful learning resource. The evaluation results showed that the module achieved a very valid level in terms of content, presentation, language and graphical aspects, indicating that it is appropriate for use as a supplementary learning material.

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