



Development of Syntax Teaching Materials Based on Contextual Teaching and Learning (CTL) Using the Flip PDF Professional Application for Indonesian Language Education Students

Frinawaty Lestarina Barus^{1,*}, Safinatul Hasanah Harahap¹, Salmah Naelofaria¹,
Mustika Wati Siregar¹, Achmad Yuhdi¹

¹Indonesian and Literature Education Department, Universitas Negeri Medan, Sumatera Utara, Indonesia

Article Info

Article history:

Received Apr 15, 2025
Revised Jun 22, 2025
Accepted Jul 25, 2025
OnlineFirst Jul 31, 2025

Keywords:

Contextual Teaching Learning
Flip PDF Professional
Syntax
Teaching Materials

ABSTRACT

Purpose of the study: This research is motivated by the lack of variation in teaching materials used in the Syntax course. The purpose of this study is to develop teaching materials for the Syntax course based on Contextual Teaching Learning (CTL) assisted by Flip PDF Professional.

Methodology: The research method is ADDIE (Analysis, Design, Development, Implementation, and Evaluation). Data collection was carried out through observation, questionnaires, interviews, and literature studies.

Main Findings: CTL-based teaching materials (incorporating elements of eight ethnic groups in North Sumatra) assisted by Flip PDF Professional in the Syntax course are effective in the learning process. This is supported by the validation of material experts, 93.3% with a very valid category, and media experts 95% with a very valid category. As many as 87.5% of students gave positive responses regarding the teaching materials that have been developed.

Novelty/Originality of this study: Based on this, it can be concluded that CTL-based Syntax teaching materials assisted by Flip PDF Professional can be used as an alternative teaching material for the Syntax course to improve learning outcomes and student activity in the learning process.

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Corresponding Author:

Frinawaty Lestarina Barus,
Indonesian and Literature Education Department, Universitas Negeri Medan,
Jl. Willem Iskandar Pasar V, Medan, Sumatera Utara, Indonesia
Email: frinabarus@unimed.ac.id

1. INTRODUCTION

Teaching materials play a vital role in the learning process, as they significantly contribute to the achievement of learning objectives. These materials can take various forms, such as printed or digital books, modules, handouts, videos, worksheets, and other resources used during instruction [1]. Essentially, teaching materials encompass all tools that support the learning experience and help enhance students' cognitive abilities [2]. The wide range of teaching material formats enables educators to tailor their instructional strategies based on student characteristics, learning content, and educational goals [3]. Beyond serving as a medium for delivering information, teaching materials also act as interactive tools that stimulate students to actively construct their own understanding [4]. For this reason, it is essential to develop teaching materials that are not only contextual and engaging but also aligned with students' learning needs to ensure meaningful and effective instruction [5]. One example of a course that relies on well-developed teaching materials is Syntax.

Therefore, the development of teaching materials that are not only contextual and interesting, but also in accordance with students' learning needs [6]-[8], is a must in creating a meaningful and effective learning

process. In reality, students not only need information, but also learning experiences that can arouse curiosity, build understanding gradually, and encourage their active participation in the classroom [9].

Imagine a student sitting in a classroom, facing syntax material that is full of technical terms and abstract concepts [10] [11]. Without the right teaching materials, the learning process can feel stiff and confusing. However, when the lecturer presents teaching materials in the form of interactive digital modules equipped with concrete examples, visual illustrations, and exercises that are contextual to everyday life, the classroom atmosphere becomes more lively [12]-[13]. Students begin to get involved, ask questions, discuss, and even try to link theory with language practices around them [14]. This is where the role of teaching materials is not only as an aid, but as a bridge connecting academic theory and language reality.

One of the courses that relies heavily on the existence of appropriately developed teaching materials is Syntax [15]-[16]. This course is given in the second semester in the Indonesian Language and Literature Education Study Program, Faculty of Languages and Arts, State University of Medan. Given the analytical and structural characteristics of the material, students need teaching materials that are able to explain the concepts of sentence structure in stages and in an applicable manner. The use of interesting, varied teaching materials that are in accordance with technological developments—such as learning videos, e-modules, or application-based exercises—can help students understand the relationship between sentence elements, syntactic functions, and the application of syntax in various linguistic contexts.

Thus, good teaching materials not only convey information, but also design learning experiences that guide students towards deep and applicable understanding [17]-[19]. Syntax, as a fundamental course, will be easier to understand if supported by teaching materials that are responsive to the needs and learning methods of today's generation [20]-[22]. Offered in the second semester, Syntax is a core subject for students in the Indonesian Language and Literature Education Program within the Faculty of Language and Arts at Universitas Negeri Medan.

Syntax learning aims to hone students' abilities in understanding phrases, clauses, sentences in the syntactic order of the Indonesian language [23]-[25]. Syntax teaching materials have not been varied so far, this is because in the learning process the use of teaching materials is still in the form of books and journals. Syntax books have also not experienced significant developments and are still used as references in the learning process. The syntax books used have not experienced significant developments and remain the main references, even though learning needs continue to develop along with the times and technology [26], [27]. This condition demands innovation in the development of syntax teaching materials that are more interesting, interactive, and relevant to the current context in order to increase the effectiveness and quality of learning.

In addition, based on the results of interviews, syntax learning according to students is rather difficult to understand and takes a long time to understand the material. A similar thing was conveyed by (Failasuf, Ihwan Rahman Bahtiar, and Ilham (2022) [28], that students feel that syntax learning is quite difficult so that innovation is needed in learning. In addition, also said that students have difficulty in syntax courses so that the development of syntax modules is needed [29]. This shows the need for Syntax teaching materials that can accommodate students' needs in understanding Syntax material. Syntax teaching materials can be developed with various approaches, one of which is Contextual Teaching Learning (CTL) [30]-[32]. CTL is a combination of learning materials linked to the environment so that learning will be more interesting because it is close to real life. This approach allows students to understand syntactic concepts not only theoretically, but also through contextual experiences that are relevant to everyday life. By linking syntactic material to real situations, CTL helps students build deeper meaning, so that the competencies obtained become more applicable and meaningful.

In addition, CTL encourages active involvement of students in the learning process through collaborative activities, reflection, and exploration, which ultimately strengthens critical and analytical thinking skills in understanding language structures [33]. Research Gusmania et al. (2021) shows that the geometry module developed with CTL based on validation by material experts and media experts obtained a score of 87.75% and 96.25% with a very valid category and for practice it reached a score of 85.75% with a very good category [34]. Based on these results, it can be used as teaching materials to support the learning process. Furthermore, research conducted by Hakim, Kurniawan, and Saputra (2020) stated that the English course teaching module with CTL is one of the modules that has been developed based on the needs of students, teachers, and is made based on adaptation of the curriculum and based on the field trial process [35].

The teaching modules that have been produced can accommodate the needs of students and teachers. Then, according to Pratama (2020) that the teaching module for the civil engineering drawing course based on CTL based on expert validation with a percentage of 93.33% with a very feasible category [36], and in the teaching and learning process, it has proven to be very effective and feasible to use in solving problems in the classroom and improving student learning outcomes. Creating interesting and contextual teaching materials is a concern for teachers. Currently, there are many applications available for creating interesting teaching materials for students, one of which is Flip PDF Professional.

The use of Flip PDF Professional in creating teaching materials shows a significant increase in improving student learning outcomes. Among them is that carried out by Rama et al (2022) stating that modules

developed using Flip PDF Professional can improve students' cognitive tests by obtaining higher scores than the pretest scores with an average of 74.29% [37]. Furthermore, Mayeni et al. (2023) stated that the Indonesian Language e-module developed with Flip PDF Professional is feasible to be applied in learning with a feasibility test of 84% [38]. Meanwhile, Frince S, Gusar, and Hutagalung (2023) stated that the module in the Prose Appreciation course based on Batak Toba local wisdom using the Flip PDF Professional application is in the very good category and can be used in the learning process [39].

Based on this, a Syntax course module needs to be developed to support the learning process. The development of the module is based on the CTL in North Sumatra by linking the eight ethnic groups of North Sumatra (Toba, Karo, Mandailing, Melayu, Nias, Pakpak, Simalungun, and Angkola). The development of this Syntax teaching material will be developed with the help of the Flip PDF Professional application. This module is expected to accommodate all student needs in understanding Syntax material.

2. RESEARCH METHOD

This study adopts a Research and Development (R&D) approach, which involves a systematic and structured process aimed at producing a specific product. As explained by Sugiyono (2020), R&D is carried out to develop or refine a product based on a thorough needs analysis and subsequent effectiveness testing, ensuring that the final product delivers practical value and real benefits to its intended users [40]. In the context of this research, the product developed is teaching materials for the Syntax course, intended to enhance the quality of learning by making it more engaging and effective. The development process follows the ADDIE model, which consists of five key stages: Analysis, Design, Development, Implementation, and Evaluation [41]-[43]. The Analysis stage involves identifying students' learning needs, evaluating gaps in the use of existing teaching resources, and examining learner characteristics. This diagnostic step serves as the foundation for the development process. Next, the Design stage centers on planning instructional materials aligned with the Contextual Teaching and Learning (CTL) approach. This includes setting clear learning objectives, selecting appropriate content, and determining effective presentation strategies. During the Development stage, the teaching materials are created using the Flip PDF Professional application. This tool facilitates the design of digital e-books in the form of interactive flipbooks, which incorporate multimedia elements such as audio, images, videos, and animations to enrich the learning experience. The Implementation phase involves trialing the developed teaching materials in a real classroom setting, allowing researchers to observe how well the materials are received and how effectively they function in supporting the learning process.

Finally, the Evaluation stage was carried out to assess the quality of the product based on input from users (students and lecturers), as well as to correct deficiencies found during implementation. With this ADDIE approach, the development of syntax teaching materials does not only rely on technological innovation, but also pays attention to the achievement of learning objectives, relevance of content, and effectiveness of use in the field. Through this method, it is hoped that the CTL-based syntax teaching materials developed will not only be a means of delivering material, but will also be able to create a more contextual, enjoyable, and meaningful learning experience for students.

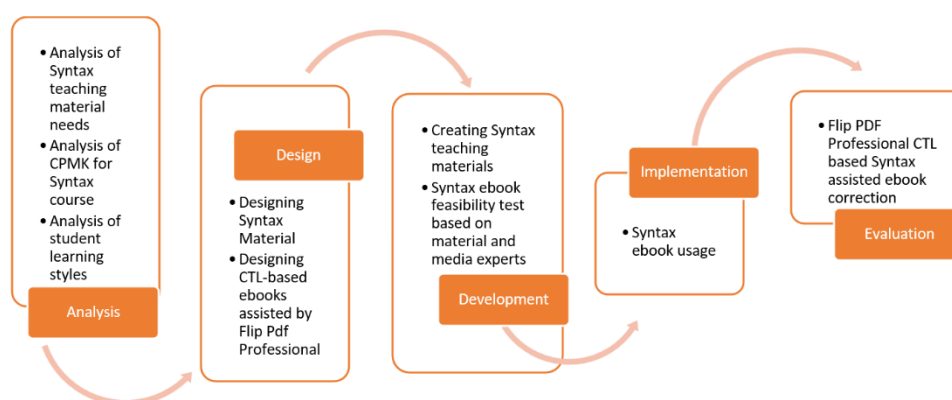


Figure 1. Stages in this research

Validation of material and media experts is carried out with the following steps:

1. Giving a score for each item with answers very good = 5, good = 4, sufficient = 3, lacking = 2, very lacking = 1,
2. Adding up the total score of each validator for all indicators; and
3. Giving validator scores using the following formula

$$\text{Validity} = \frac{\text{Score obtained}}{\text{Maximum Total Score}} \times 100\%$$

A teaching material is suitable for use if it has reached a validity level above 80% based on the table 1.

Table 1. Validity Level

| Achievement Rate (%) | Category |
|----------------------|-------------|
| 90 – 100 | Very Valid |
| 80 – 89 | Valid |
| 65 – 79 | Quite Valid |
| 55 – 64 | Less Valid |

The sampling technique used in this study was purposive sampling, considering the following criteria [44]. Active students taking the Syntax course, Having attended at least two meetings of the course prior to the teaching materials trial, Willingness to participate in the trial and complete the evaluation instrument. The sample size for the limited trial consisted of 15 students, while the main trial involved 30 students. Information from the teaching lecturers was also collected through semi-structured interviews. Data was collected through several instruments [45]: Learning needs questionnaire (analysis stage), Expert validation sheet (material and media experts), Student and lecturer response questionnaire after the implementation of the teaching materials, Learning outcome test to assess improvements in understanding of the Syntax material.

This study involved several important variables: Learning Material Quality: encompassing aspects of content, language, presentation, and graphical appropriateness, measured using a 5-point Likert-based validation instrument. Effectiveness of Learning Materials: measured based on improvements in learning outcome test scores before and after using the materials. Student Learning Motivation: measured using a CTL-based learning motivation scale with indicators of relevance, active engagement, and real-world connections.

Instrument Validity and Reliability, Content Validity was assessed by three experts (an Indonesian language learning expert, an instructional media expert, and a CTL expert). Revisions were made based on their input. Empirical Validity was tested using construct validity analysis with the help of SmartPLS (if using quantitative data based on a structural model). Instrument reliability was analyzed using Cronbach's Alpha and Composite Reliability (CR). A reliability value >0.7 is considered to meet the standard.

SmartPLS (Partial Least Squares Structural Equation Modeling) was chosen because: It is suitable for small to medium sample sizes, It allows for simultaneous testing of relationships between latent variables, It can analyze models with complex variables even if the data distribution is not perfectly normal. If SmartPLS is not used, the data is analyzed using a paired sample t-test (to see the difference between pre-test and post-test results) and descriptive analysis of the questionnaire results.

3. RESULTS AND DISCUSSION

3.1. Analysis

The analysis in this study was conducted through two main techniques, namely observation of the learning process and administering a questionnaire to all students taking the Syntax course [46]. Observations were conducted directly during lectures, with the aim of observing the dynamics of learning, student participation, the use of teaching materials by lecturers, and student responses to the learning methods and media used. Through this observation, researchers can identify various problems that arise in the field objectively, including limited teaching materials, the level of student involvement, and obstacles in understanding syntax material. In addition to observation, a questionnaire instrument was used to dig deeper into students' perceptions, needs, and expectations of the teaching materials used in syntax learning.

The questionnaire was distributed to all students taking the course, so that the data obtained reflected a general picture of students' needs as a whole. The questions in the questionnaire were designed to measure the extent to which students felt helped by the existing teaching materials, the types of teaching materials they preferred, and their desires for the use of technology in learning, especially e-books and other digital media. The combination of observation and questionnaire provides qualitative and quantitative data, so that the analysis of teaching material needs can be carried out more comprehensively and in-depth. With this approach, the development of syntax teaching materials that are designed later will not only be based on assumptions, but will truly answer real needs in the field and be relevant to the actual conditions of students as learning subjects. This approach also strengthens the validity of the development of the products that will be produced, because it is based on accurate and contextual empirical data.

Table 2. Results of Observations of Syntax Course Learning

| No | Indicators | Yes | No |
|----|---|-----|------------------------|
| 1 | The learning process is carried out in accordance with the Semester Learning Plan (RPS) | √ | |
| 2 | The material is in accordance with the Graduate Learning Outcomes (CPL) | √ | |
| 3 | The sequence of the material | √ | |
| 4 | Variation of learning resources | | √ (books and journals) |
| 5 | Provision of structured assignments | √ | |

From the observation results, it was found that the preparation of the RPS was prepared by a team of lecturers who taught the course. The RPS that was prepared based on systematic material and was in accordance with the study program's CPL included "Mastering basic concepts in the field of science and language teaching orally and in writing in everyday/general and professional contexts." The material was also prepared systematically based on the level of understanding that must be mastered by students to achieve the learning objectives of the Syntax course. The tasks assigned to students were also determined based on the abilities that must be mastered by students and were listed in the RPS. From the observations made, the part that was not yet optimal was only the variation of learning resources used or provided by the lecturer.

The learning resources used were only in the form of mandatory books that must be owned by students and journals related to the Syntax course. In addition, from the observation results, it was obtained that the variation of learning resources used in this Syntax course was not yet diverse. This can be seen that the teaching materials used were still in the form of books and journals. Meanwhile, in the learning process, varied teaching materials are needed to support the achievement of learning objectives. As stated by William B. Wood, and Kimberly D. Tanner (2017) that a variety of teaching materials must be provided by the lecturer to maximize students' potential in understanding the lecture material [47]. Even now, it is not only variations that are needed but also a shift in the need for teaching materials from textbooks to digital books. Meanwhile, to analyze students' needs for the developed teaching materials, a questionnaire was given to capture students' needs for teaching materials. The questionnaire was given in the form of a google form containing seven questions as Table 3.

Table 3. Results of the Syntax Teaching Material Development Needs Analysis Questionnaire

| No | Questions | Answer | |
|----|--|------------------------------------|--------|
| | | Yes | No |
| 1 | Does the use of teaching materials in the Syntax course affect motivation in participating in the learning process? | 98,75% | 1,25% |
| 2 | In your opinion, is it necessary to add teaching materials to this course to support the learning process? | 97,25% | 2,25% |
| 3 | What teaching materials are used in the Syntax course? | Books 65%; Journals 30%; Ebooks 5% | |
| 4 | What types of teaching materials do you need in this course? | Video 87%; Ebook 23% | |
| 5 | Do you need teaching materials that are adapted to the environment (close to your life)? | 93,25% | 6,75% |
| 6 | Are you familiar with the Flip PDF Professional application? | 20,25% | 80,75% |
| 7 | In your opinion, will Syntax learning be more interesting by using syntax teaching materials based on Contextual Teaching Learning (close to your life) Assisted by Flip PDF Professional?"? | 84% | 16% |

Based on the data presented in the table, it is evident that the current teaching materials used in the Syntax course are not yet optimal, indicating the need for greater variety in their delivery. Students expressed a strong preference for video-based explanations, as they find Syntax to be a challenging subject, especially when it is not practiced consistently. Furthermore, the questionnaire results revealed that students favor contextual teaching materials—those that are closely related to their daily lives—because such materials make it easier for

them to understand complex concepts. Among the various formats available, digital books (e-books) have emerged as a popular choice, as they are considered more accessible and engaging for students in today's digital learning environment.

The practicality of their use is the main reason why e-books are preferred over printed textbooks. Students do not need to carry heavy and thick physical books, because with e-books, materials can be accessed only through digital devices such as laptops, tablets, or even smartphones. Practicality of use is the main reason why electronic books (e-books) are now more popular than printed textbooks. In the fast-paced digital era, mobility and ease of access are the main needs for students. Thick and heavy physical books are often an additional burden, especially for students who have to move from one lecture room to another in one day. It is not uncommon for them to have to bring more than one textbook to take several courses at once.

On the other hand, e-books offer a practical solution. By simply using a digital device such as a laptop, tablet, or even a smartphone, all lecture materials can be accessed anytime and anywhere. Students can read the material during breaks, on the go, or while studying independently at home—without having to open a large bag just to find one book. The search feature in e-books also makes it easy for students to find certain topics or terms quickly, without having to flip through pages one by one. For example, when a student wants to re-understand the concept of "constituents" in the Syntax course, he simply opens the e-book in a digital reader application, types keywords in the search field, and in seconds, all relevant explanations are displayed immediately. This not only saves time, but also significantly increases learning efficiency.

Therefore, the existence of e-books is not only a matter of technological trends, but also a response to the need for learning that is more flexible, efficient, and in accordance with the digital lifestyle of today's students. In addition to the practical aspect, the visual appearance in e-books that is more attractive and interactive also increases students' interest in using them as learning resources. The results of the questionnaire distributed to students showed that they tended to want teaching materials in the form of e-books and learning videos. This shows a shift in preference towards digital teaching materials, in line with technological developments and the learning habits of the current generation who are more familiar with digital media. As stated by Lufthansa et al. (2022), the use of e-books can increase students' motivation in participating in the lecture process [48]. This is due to the flexibility and convenience offered by e-books in supporting an independent learning process that is not limited by space and time. Furthermore, the advantage of e-books lies in their high accessibility.

Students can access materials anytime and anywhere they are, as long as there is a device and internet connection. Even in conditions without a network, e-books that have been downloaded can still be used. This is an effective solution for distance learning or learning that emphasizes flexibility of time and place. In addition, e-books can also be integrated with various other supporting media such as audio, video, hyperlinks, and animations, thus creating a more lively and non-monotonous learning experience. Thus, the development of teaching materials in the form of e-books not only answers the practical needs of students, but is also in line with the principles of modern learning that emphasize independent learning, flexibility, and active involvement of students. Therefore, the use of e-books in developing teaching materials, especially for Syntax courses, is a strategic step to improve the quality of learning and reach the learning preferences of today's students.

Based on the results of the questionnaire, it was obtained that students want teaching materials in the form of videos to support their understanding of the learning material. Video teaching materials are very much needed by students after they receive material in class. Students can repeat the material according to their ability to understand the learning and of course it will strengthen their understanding. The results of the questionnaire also emphasized that as many as 93.25% wanted teaching materials that were close to students' lives. This questionnaire shows that the teaching materials provided by lecturers in the Syntax course should be things that are known or related to students' daily lives. To support this, an approach is needed in making teaching materials.

One approach that can be used in making teaching materials is CTL. This is in line with research conducted by Saidek (2022) which states that teaching materials made based on the CTL approach can help lecturers and students in the lecture process [49]. Furthermore, Sinaga, Albertus (2021) stated that making videos based on the CTL approach in the Indonesian Language and Literature Learning Evaluation course can increase students' interest in learning and affect the ability of learning outcomes [50]. Nowadays, there are many applications available to create teaching materials/media that make it easier for teachers and lecturers to create teaching materials so that they are more interesting.

One of them is Flip PDF Professional, from the results of the questionnaire it is known that students expect teaching materials developed with the help of Flip PDF Professional. Research (Mairisiska 2022) states that biochemistry teaching materials made with the help of Flip PDF Professional are very popular with students with a practicality level of 90.1%. In addition, Rama et al. (2022) also stated that the teaching materials produced are able to attract students' attention, make students easy to understand and can make students work in groups [37].

3.2. Design

After the analysis is done, the next step is design. At this stage, a product design is carried out in the form of Syntax teaching materials in the form of an ebook with the help of Flip PDF Professional. The results of this design are carried out by considering the results of the analysis of the questionnaire, observation, and interviews that have been conducted. In addition, it is also based on the Syntax Course Achievement (CPMK). Then the materials that will be included in the teaching materials and the type of Flip PDF Professional template used are determined. The materials that will be made in the ebook are: Basic concepts of Syntax, Phrases, Clauses, and Sentences followed by videos and examples of analysis related to the culture of the eight ethnic groups of North Sumatra.

The preparation of materials that are adjusted to CPMK and all examples in the teaching materials are related to the eight ethnic groups of North Sumatra. With the hope that local wisdom (eight ethnic groups of North Sumatra) carried in the teaching materials will make it easier for students to understand the Syntax material. This is also supported by research Prince S, Gusar, and Hutagalung (2023) which states that the module developed based on local wisdom of the Toba Batak is suitable for use in the Prose Appreciation course [39].

3.3. Development

After doing the design activities, the next step is to create teaching materials using the Flip PDF Professional application.



Figure 2. Teaching Materials that have been Produced

The teaching materials that have been developed already contain elements that have been associated with the eight ethnic groups of North Sumatra. The loading of these elements is made in the examples included in the ebook. For example, the provision of examples is associated with the lives of the eight ethnic groups of North Sumatra. Among them are the following:

Kami memasak cimpa matah
 S P O
Namboru membaca agar bisa menyelesaikan kuis tersebut
 S P K (frasa konjungsi)

The terms of the eight ethnic groups of North Sumatra used in the teaching materials are explained to make it easier for students to understand their meaning. By providing examples in the ebook, it will increase students' understanding of North Sumatran culture and as a way to introduce and maintain the local culture of North Sumatra. In addition to the examples given through exercises in the form of discourse, it also contains discourses related to the eight ethnic groups of North Sumatra. After being developed, a validation test was

carried out by material and media experts. The results of the validation from material experts are as follows Table 4.

Table 4. Validation by Material Experts

| Table 4: Validation by Material Experts | | | | | | | |
|---|----------------------------|---|------------------------|---|---|---|---|
| No | Criteria | Indicators | Alternative Assessment | | | | |
| | | | 1 | 2 | 3 | 4 | 5 |
| 1 | Content Eligibility Aspect | Suitability of material to Course Outcomes (CPMK) | | | | | √ |
| | | Accuracy of material | | | | √ | |
| | | Updated material | | | | √ | |
| 2 | Presentation | Encouraging Curiosity | | | | | √ |
| | | Linear Media Presentation | | | | | √ |
| | | Completeness of presentation | | | | | √ |
| | | Straightforward | | | | | √ |
| 3 | Language Eligibility | Communicative | | | | | √ |
| | | Use of terms, symbols and icons | | | | √ | |
| | | Relevance to students' learning capacity | | | | √ | |
| | | Coherence and integration of thought flow | | | | | √ |
| | | Suitability to language rules | | | | | √ |
| Total | | 56/60 = 93,3% | | | | | |

The validation results from the material expert indicate that the developed teaching materials fall into the "very valid" category, with a validation score of 93.3%. This high percentage suggests that the materials are considered suitable for further testing with students. However, the validator also provided several important suggestions for improvement. One key recommendation was to update the content by incorporating more recent references, as well as translations from the languages of the eight ethnic groups of North Sumatra that appear in the teaching materials. The material expert also emphasized that, beyond word-for-word translations, there should be brief descriptions explaining the general usage of those words in their cultural or linguistic context. In terms of content accuracy, the material was found to be presented in a systematic and structured manner, though it was recommended that additional supporting references be included to strengthen the explanations. Regarding the linguistic aspects, the expert noted inconsistencies in the use of terminology, symbols, and icons throughout the material, suggesting that these elements need to be revised for coherence.

Additionally, certain word choices should be adjusted to better align with the cognitive level of third-semester students enrolled in the Syntax course. Beyond content and language, the validator also recommended enhancing the materials with more real-life examples to aid student comprehension. Moreover, the inclusion of instructional videos was suggested, with one video assigned to each subsection of the material. These videos should provide clear and detailed explanations of complex topics, enabling students to revisit the content independently after classroom instruction. To further support learning, the teaching materials also include hyperlinks to additional resources that help deepen student understanding. On the other hand, the media expert's evaluation resulted in a score of 95%, placing the teaching materials in the "very feasible" category. Based on both validations, it can be concluded that the developed teaching materials are highly suitable for use in the Syntax course.

Table 5. Media Expert Validation

| | | | Alternative Assessment | | | | |
|----|-----------------------|--|------------------------|---|---|---|---|
| No | Criteria | Indicators | 1 | 2 | 3 | 4 | 5 |
| 1 | Module Size | Compliance of module size with ISO standards. | | | | | √ |
| | | Compliance of size with module content. | | | | | √ |
| | | The design elements on the front, back, and spine covers are arranged cohesively, maintaining rhythm, unity, and consistent visual flow. | | | | | √ |
| 2 | Cover Design | Shows a clear focal point | | | | | √ |
| | | The color scheme of the layout elements is cohesive and enhances the function | | | | √ | |
| | | The letters used are attractive and easy to read. | | | | | √ |
| | | Layout Cohesion | | | | | √ |
| 3 | Module Content Design | Aspects of a Balanced Layout | | | | | √ |
| | | Elements of Complete Layout | | | | | √ |
| | | Typography in Basic Teaching Resources | | | | √ | |
| | | The typography of educational content enhances comprehension. | | | | | √ |
| | | Illustration of Content | | | | | √ |
| | | Total | 57/60= 95% | | | | |

The Syntax teaching material created with the help of Flip PDF Profesional received a score of 4 from the media expert in the cover design section on the indicator “color elements, layout, harmony and clarifying function” and two indicators on the design of the module content on “simple typography of teaching material content and illustration of content”. Apart from these indicators, it has obtained the maximum score. This shows that the Flip PDF Profesional application is one of the applications that can be used to create interesting and conceptual ebook teaching materials for students, thus facilitating the learning process.

In addition, this application also makes it easier for teachers to create teaching materials because it is supported by interesting features such as: video, audio, images, and links that can enrich the teaching materials created by teachers.

3.4. Implementation

During the trial of the CTL-based Syntax teaching materials, which were supported by Flip PDF Profesional, 87.5% of the 32 students expressed interest in using them. This high percentage indicates that the materials were well-received and engaged students effectively. The trial aimed to assess how the integration of interactive features, such as multimedia elements in digital e-books, could enhance student learning. The following section presents student responses, providing valuable feedback on the effectiveness and appeal of the teaching materials used.

Table 6. Feedback from Students on Syntax Teaching Materials

| Category | Number of Students | Percentage (%) |
|------------------|--------------------|----------------|
| Very interested | 28 | 87.5 |
| Interested | 3 | 9.37 |
| Quite interested | 1 | 3.12 |
| Not interested | - | - |
| Total | | 100 |

From the data obtained through questionnaires and interviews, it can be seen that students show quite high interest in the Syntax teaching material product developed using the Flip PDF Profesional application. This interest is inseparable from the uniqueness and advantages of the digital teaching material, which is specifically designed to provide a more interesting, interactive, and in-depth learning experience. One of the main advantages highlighted by students is the integration of supporting media such as video, audio, and images into the teaching material. The presence of these multimedia elements is a very significant added value, because it is able to clarify abstract and complex syntactic concepts. Through interviews conducted, students revealed that explanations in the form of video and audio greatly helped them in understanding the contents of the material after reading the explanation in the text. For example, explanations regarding phrase structures or types of clauses in syntax that are usually difficult to understand through text alone, become easier to understand when presented visually and auditorily.

In addition, relevant image illustrations are able to strengthen understanding visually and provide a concrete picture of the material being studied. Furthermore, the presence of audio-visual media in this teaching

material has also been proven to be able to accommodate various learning styles of students. Students with visual learning styles find the display of images and infographics helpful, while students with auditory learning styles find explanations through audio recordings more comfortable. Meanwhile, for students who prefer practice-based learning and direct involvement, the video feature provides space for them to learn more actively and reflectively.

Thus, this Flip PDF Professional-based syntax teaching material has not only succeeded in attracting students' interest, but is also able to answer diverse learning needs. This shows that the use of multimedia technology in the development of teaching materials has a major contribution in increasing the effectiveness of learning, especially in the context of higher education which demands flexibility, creativity, and innovation in delivering material. This teaching material product ultimately becomes a learning tool that is not only informative, but also inspiring and adaptive to the times.

3.5. Evaluation

After going through the initial validity and implementation test stages, the development of Syntax teaching materials based on Contextual Teaching and Learning (CTL) with the help of the Flip PDF Professional application showed quite good results, but still needed some improvements to achieve product perfection. The validation process carried out by experts both in terms of material and media was an important step in ensuring the quality of the content and appearance of teaching materials. One aspect that the validator paid attention to was the selection of colors and layout of teaching materials, which were considered to still need to be adjusted to make them more comfortable and attractive for students. Colors that are too striking or contrasting, as well as the arrangement of visual elements that are not proportional, can interfere with learning focus. Therefore, adjustments to the visual design were made to create a harmonious, aesthetic appearance that supports comfort in reading and understanding the contents of the teaching materials.

In addition to the visual aspect, the typography component has also been improved. The reviewer suggested that the use of fonts, sizes, and spacing between lines in the contents of the teaching materials be rearranged to make them easier to read. The right typography greatly influences the fluency in reading text, especially for Syntax material which requires high concentration and accuracy in understanding grammatical concepts. The content illustrations were also improved, both in terms of image quality, relevance of illustrations to the material, and visual placement to be more informative and contextual.

In terms of material content, there were several important revisions made to improve the sophistication and accuracy of the material. Several technical terms and linguistic symbols used in the teaching materials were adjusted to be consistent and in accordance with the latest academic standards. Input from material experts provided clear direction in updating the content so that it remains relevant to current learning needs and does not conflict with the development of contemporary linguistic theory.

After all these improvements were implemented, both in terms of visual appearance, typography, illustrations, and quality of the material content, and considering the positive response from students to this teaching material, the CTL-based Syntax teaching material with Flip PDF Professional support was declared suitable for use. This teaching material can not only be accessed offline via computers and smartphones, but can also be downloaded and used online, providing high flexibility to students in the learning process. Thus, this teaching material is expected to be an effective, modern, and responsive learning tool to the needs of students of the Indonesian Language and Literature Education Study Program, Faculty of Languages and Arts, Universitas Negeri Medan.

4. CONCLUSION

Research and development of the Syntax e-book teaching material based on the Contextual Teaching and Learning (CTL) approach, supported by Flip PDF Professional, has successfully produced a valid product suitable for use in the Indonesian Language and Literature Education Study Program, Medan State University. The main uniqueness of this teaching material lies in the integration of the local wisdom of eight major ethnic groups in North Sumatra, which enriches the learning context and increases the relevance of the material for students. Theoretically, this development contributes to the literature on CTL-based teaching material design with a multicultural approach and expands the application of interactive technology in syntax learning. Practically, this e-book demonstrates the effectiveness of contextual and flexible interactive digital media for both online and offline learning. However, this research is limited by the limited scope of the trial at a single institution and the failure to measure the long-term impact on student learning outcomes. Furthermore, the evaluation of long-term learning effectiveness has not been fully explored. Further research is recommended to test the effectiveness of this e-book in various educational contexts, including other study programs, and to integrate AI-based adaptive evaluation features to enhance learning personalization. In-depth studies on changes in students' learning behavior and academic outcomes in the long term are also needed to strengthen empirical evidence on the benefits of this teaching material.

ACKNOWLEDGEMENTS

We would like to thank all participant who have contributed, either directly or indirectly, to the implementation of this research.

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