Improving Student Learning Outcomes Through Accurate Online Modules with the ADDIE Model

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A R T I C L E   I N F O

A B S T R A K

Accurate online merupakan salah satu aplikai yang digunakan dalam pembelajaran akuntansi. Mata kuliah ini merupakan mata kuliah wajib agar mahasiswa memiliki kemampuan adaptif pada era digital, namun demikian sumber referensi yang tersedia sangat terbatas. Dampaknya mahasiswa hanya menghafal contoh soal dari dosen, dan kebingungan ketika menghadapi model soal laiinya. Penelitian ini ditujukan untuk mengembangkan modul accurate online sebagai tambahan referensi belajar mahasiswa. Model pengembangan yang digunakan adalah model ADDIE, yang terdiri dari 5 tahapan yaitu, Analisis, Perancangan, Pengembangan, Implementasi, dan Evaluasi. Fokus pengembangan dilakukan pada materi penjualan karena merupakan sektor paling signifikan bagi perkembangan suatu bisnis. Hasil penelitian menunjukkan bahwa modul Accurate Online Fitur Penjualan dinyatakan layak dalam uji validasi dari ahli materi, ahli bahasa, dan ahli desain grafis. Modul Accurate Online Fitur Penjualan cukup praktis dan dapat meningkatkan hasil belajar mahasiswa dalam pembelajaran Komputer Akuntansi. Modul Accurate Online yang dilengkapi ilustrasi dan studi kasus mampu mengakomodasi siswa dengan gaya belajar visual dan kinestetik.

A B S T R A C T

Accurate online is one of the applications used in accounting learning. This course is mandatory so that students have adaptive skills in the digital era. However, the available reference sources could be more extensive. The impact is that students only memorize example questions from the lecturer and need clarification when faced with other model questions. This research aims to develop an accurate online module as an additional reference for student learning. The development model used is the ADDIE model, which consists of 5 stages: Analysis, Design, Development, Implementation, and Evaluation. The development focus is on sales material because it is the most significant business development sector. The research results show that the Accurate Online Sales Feature module was declared feasible in validation tests from material, language, and graphic design experts. The Accurate Online Sales Feature module is reasonably practical and can improve student learning outcomes in computer accounting learning. The Accurate Online module, equipped with illustrations and case studies, can accommodate students with visual and kinesthetic learning styles.

1. INTRODUCTION

The development of the global business world is increasingly rapid, increasing the need for information significantly (Fu et al., 2022; Verhoef et al., 2021). Accounting is vital information in business decisions (Kyeremeh et al., 2022; Suhendi et al., 2022). The vital role of accounting information makes companies compete to make accounting applications that are accurate, timely, and reliable (Jarah & Jarrah, 2022; Saad, 2023). This accounting application is beneficial in facilitating the recording of transactions and is widely used by companies in preparing the required reports (Friday & Japhet, 2020; Thottoli, 2021). Accurate is an accounting application that is relevant to business conditions in Indonesia (Sugeng, 2023). The application has been adapted to tax regulations and generally accepted accounting regulations (Debora et al., 2022; Retnosari & Nilasari, 2022). Many small, medium, or large-scale companies use this application to manage business transactions (Retnosari & Nilasari, 2022; Saputra et al., 2023). To align with industry needs, many schools and tertiary institutions use Accurate Applications in accounting computer learning. Accurate software can help entrepreneurs record bookkeeping, sales transactions, purchases, and inventory and prepare financial reports in just a few easy, fast, and accurate steps (Isenberg, 2011; Retnosari & Nilasari, 2022). Accurate makes it easy to manage financial data at a high level of accuracy so that it will produce financial reports, balance sheets, profit and loss more quickly.

Higher education, as a continuation of secondary education, must prepare students who can enter society with the provision of academic knowledge to practice and develop science and technology and be able to create it (Malik, 2018; Saputra et al., 2023). Higher education aims to prepare students to become members of society with academic and professional abilities who can practice, develop, and create science, technology, and the arts. The

success of tertiary institutions is reflected in the profile of graduates, which is relevant to the determination of graduate learning outcomes (CPL) according to their field of study (Harris & Clayton, 2019; Sandri et al., 2016). One of the CPLs of the Accounting Education Study Program at the Universitas PGRI Madiun, which contained the unique skills that must be mastered, is the ability to operate and utilize software (number processing applications, data processing applications, and accounting applications) in preparing financial reports. To achieve the CPL, the Accounting Education Study Program has developed a curriculum using Accurate online computer-based accounting as one of its compulsory subjects.

Based on the results of interviews and initial observations conducted by researchers, it was found that in the learning process of accounting computer-based accurate online in the Accounting Education Study Program, there were still some obstacles. Students have difficulty understanding the material because of the limited reference sources available. Students memorize the steps the lecturer guides in learning, so they need clarification when facing different situations and case study questions. Based on this needs analysis, the researcher intends to develop modules to improve the learning quality. The module learning system is considered more effective and efficient in the learning process (Houghton, 2023; Sadiq & Zamir, 2014). The development of modules is expected to broaden students' insights into learning so that they can explore the features available in the Accurate Online application to achieve CPL Prodi, which is charged to computer accounting courses.

In line with constructivist learning theory, students can explore media and teaching materials to encourage deeper digging of information to be applied in real terms, shaping experiences to build their knowledge (Shah, 2019; Tadesse et al., 2022). Based on this theory, modules are teaching materials that support extracting student information. Based on this theory, students not only passively listen to and receive material from educators but actively reconstruct their understanding of the material in the learning process. This constructivist learning theory can improve student achievement (Arifah & Marzuki, 2021; Shah, 2019). Learning with this pattern will increase student learning outcomes by solving problems independently or in groups (Hampp et al., 2021; Shah, 2019). Constructivism theory focuses more on students building their knowledge through assimilation and accommodation. Students are expected to be able to organize their own experiences, not just obey what is ordered and has been done by the educator (Arifah & Marzuki, 2021; Efgivia et al., 2021; Shah, 2019). Constructivism theory has constructive properties regarding students' abilities and understanding in the learning process, so the student's intelligence is hoped to increase.

Based on the analysis of the situation and conditions above, it is necessary to develop an Accurate Online module to support the implementation of accounting computer learning in the Accounting Education Study Program at the Universitas PGRI Madiun. Module development will be focused on sales features because the most critical business transactions that occur in all lines/scales of business are sales activities (Ambarriani et al., 2023; Giarto & Fachrurrozie, 2020). Based on the results of observations and interviews, students still often need to correct sales invoices and down payments. Some students need help understanding transactions that should go into the invoice, return, or transaction section that will be processed or collected. This common mistake in sales cycle transactions often hinders working on subsequent transactions.

The development of the online Accurate module uses the ADDIE model because several previous studies have shown that developing teaching materials using this model can improve student learning outcomes (Mardetini et al., 2018). Meanwhile, other study proved that the Android Application-Based E-Module media Basic Accounting Equation Material for Basic Accounting Subjects is excellent and suitable for learning (Al Mamun et al., 2022). Other study proved that e-modules containing online tests increased student learning outcomes (Lestari & Parmiti, 2020). Another study proved that the Flipbook-Based Trading Company Accounting Practice Set teaching materials are very suitable for students learning resources because they are easy to understand (Indraswari & Susilowibowo, 2022).

On the theme of developing accurate textbooks, other study developed an Accurate Computer Accounting textbook based on contextual teaching and learning (CTL) (Ambarwati & Rochmawati, 2020). The textbook was tested online on 20 class XI students at SMKN 2 Kediri. The textbook material is not Accurate Online. The MYOB application textbook was developed by other study for printed books (Suyono & Wijaya, 2021) and for digital books (Deskoni et al., 2018). Based on previous research studies, no textbook development for Accurate Online was found. This research utilizes the results of the MBKM-KSKI UNIPMA Accounting Education Study Program in collaboration with PT Ultima Tekno Solusindo (Ambarwati & Rochmawati, 2020). This collaboration allows the Accounting Education Study Program to utilize accurate online education and hold Certified Accounting Professional exams. Researchers will use this unique access to develop Accurate Online textbooks.

The novelty of the research will be seen from 2 points of view, namely, accounting information systems and the development of accurate textbooks. Research on accounting information systems in Indonesia (2004-2018) still revolves around the themes of management strategy, IT business strategy, IS business strategy, MIS, IS utilization, information system effectiveness, company performance, individual performance, AIS, regional financial information systems, governance company, and company financial performance (Penatari et al., 2020). Meanwhile, the research methods used in the last 60 studies on accounting information systems successfully

published in accredited journals Sinta 1 and 2 were interviews, questionnaires, observation, literature, secondary, and multimethod. So, in the 2004-2018 period, the results of charting the field as well as researchers' searches on Google Scholar for the 2019-2022 period, there was no research on accounting information systems that used the research and development method to produce textbooks (Jarah & Jarrah, 2022; Penatari et al., 2020). So, there are three objectives of this research. First, to know the procedure for developing modules using the ADDIE method; second, to know the feasibility of using the online Accurate Based Sales Feature module in the Computer Services and Trade Accounting course; and third, to know the development of the online Accurate Based Sales Feature module on student learning outcomes. Researchers will carry out research and development to achieve this goal.

2. METHOD

This research is a type of research development or Research and Development (R & D). The research product is the Accurate Online Module, a sales feature with the ADDIE model for Computer Accounting courses (Sugiyono, 2019). This module can facilitate students' understanding and make it a guide during the learning process. The development model used in this research is the ADDIE model, which stands for Analysis, Design, Development, Implementation, and Evaluation. The product developed in this research is the printed module.

The data source in this study is primary data in the form of interviews, documentation, validation questionnaires for material experts, linguists, design experts, and student responses. Interviews were conducted with several 4th and 6th-semester students in computer accounting classes at the Universitas PGRI Madiun Accounting Education Study Program. The interview has four main questions: 1) What is the process of learning computer accounting in class, 2) What material is not yet understood, 3) What difficulties are experienced when learning, and 4) What features often cause misconceptions? The results of the initial interview were used to determine the topic of module development and preparation of observation protocols in the accounting computer learning process. The observation protocol carried out includes several stages: 1) determine the observation topic according to the results of the initial interview, 2) determine the observation indicators based on the online accurate module feature related to the specified topic, 3) prepare the observation instrument, 4) apply the observation instrument at the analysis stage.

The design stage is used to design a product using teaching materials appropriate to the learning objectives. At the design stage, namely, compiling a module requirement map containing material, determining the components in the module, and determining the design of the module appearance. The accurate online module design is adapted to a scientific approach with five main learning experiences: observing, asking, trying, reasoning, and communicating. The material for each feature is prepared in detail, accompanied by illustrative examples and practice case study questions to develop students' cognitive, affective, and psychomotor abilities.

Researchers develop teaching materials that are carried out according to the design that has been made. After the teaching materials were finished, the researcher validated them with the validators, namely material experts, language experts, and design experts. The assessment procedure uses a questionnaire (aspects and indicators of the questionnaire are presented comprehensively with the results in Table 4, Table 5, and Table 6). The score used is between numbers 1 and 5. Number 1 means not good, number 2 means not good, number 3 means quite good, number 4 means good, and number 5 means very good. The total scores obtained will be presented to determine the feasibility of learning media in modules. This stage validates and revises accurate online modules to achieve the desired goals. The number of scores obtained in the validation process will be presented to determine the feasibility of module teaching materials. The researcher uses a formula to process validation data, as exemplified by study, presented in Table 1.

Table 1. Eligibility Criteria

Percentage score	Categorical
90%-100%	Very decent
75% - 89%	Decent
65% - 74%	Fair enough
55% - 64%	Less feasible
0% - 54%	Very less feasible

After an expert assessment is carried out, a development trial is carried out. This development trial was conducted to test the use of learning media as an accurate online sales feature module to find out the results during the learning process in the classroom. Researchers carried out this evaluation stage to determine students' learning outcomes after being explained using teaching materials. To analyze the practicality of learning media through teaching materials obtained from student questionnaires. After using the accurate online sales feature module, students must complete a questionnaire containing statements for assessing these aspects using a Likert scale. The

number of scores obtained in the questionnaire to determine the module's practicality is presented in Table 2.

Table 2. Achievement Criteria

Achievement percentage	Interpretation
80% - 100%	Very good
66% - 79%	Good
56% - 65%	Pretty good
40% - 55%	Not good
30% - 39%	Fail

Evaluation is a process to assess the development we make for teaching materials in a lesson and is carried out at the end after being explained (Cahyadi, 2019). After using the accurate online sales feature module, an evaluation determines how much students understand. Evaluation of attitude, knowledge, and skills assessment is seen from the percentage of students who fulfill KKM 71 in the limited and field tests, both from the pretest and post-test questions. The basis for determining KKM in this study can be seen in Table 3.

Table 3. Criteria for Minimum Completeness Limited Test and Field Test

Value Scale	Qualification
≥81	A: Very good
≥71 - <81	B: Good / Minimum pass grade
≥61 - <71	C: Pretty good
≥51 - <61	D: Not good
<51	E: Fail

3. RESULT AND DISCUSSION

Result

The first stage, analysis, was done through observation and interviews in implementing Computer Accounting learning for Accounting Education students in semesters 4 and 6. The stages of analysis in the outline include an analysis of the implementation of accurate online learning and an analysis of the needs of teaching materials in the learning process. The results are that the learning process of Accurate Online Sales Features for Accounting Education students in semesters 4 and 6 is only conducive to appropriate modules, handbooks, or teaching materials. Many students were still busy talking with their friends when given the learning material. They should have listened to the explanation carefully; many needed help understanding the material presented, and some even left the explanation behind. Students still need modules or teaching materials in the form of printed books to better understand the material. This is because material information in printed form is easier to understand and can be accessed many times.

The second stage, the design stage, is to design teaching materials for Accurate Online Learning Features Sales. The first step is to compile the teaching material modules adapted to the applicable CPMK in Accounting Education at Universitas PGRI Madiun. This module contains a cover, preface, table of contents, instructions for use, learning objectives, the concept of the sales cycle, an explanation of sales features with step-by-step captions, examples of case studies and their explanations, a summary of sales features, and a competency test that contains knowledge and skills questions. The second step is to determine the components of the teaching materials. The components of the content of teaching materials refer to learning objectives and learning materials. The learning objectives in this study are: 1) To analyze and apply the recording of merchandise sales transactions honestly and responsibly. 2) Analyze and apply the recording of trade receivable settlement transactions honestly and responsibly. 3) Analyze and apply the Trade Sales Return transactions recording honestly and responsibly. The learning material used is the analysis of transaction evidence: accounting information systems, accounting cycles, transaction evidence, how to input transactions, and how to input adjustments. The third step is to design from the teaching materials display. The cover design for the display of teaching materials is made as attractive as possible with clear title information. The display of the layout of the contents of teaching materials is made practical, with additional captions for the steps needed to facilitate understanding of the material. Cover of the sales feature accurate online module is show in Figure 1. Figure 1 shows the front cover display containing the title, Accurate logo, program illustration, and author's name. At the same time, the back cover contains additional information to make it more attractive. Caption steps for explaining the material is show in Figure 2.
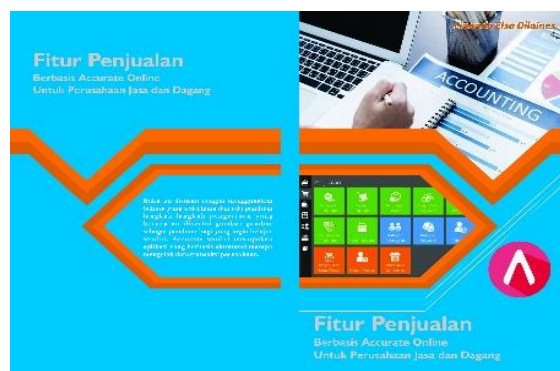
Figure 1. Cover of the Sales Feature Accurate Online Modul

Figure 2. Caption Steps for Explaining the Material

The third stage is the development of teaching material designs, namely producing the Accurate Online module and validating teaching material products by material experts, linguists, and design experts. This development stage is to create a framework for preparing a teaching material that has been designed. At this stage, it is used to validate and revise teaching materials to develop teaching material products to achieve the desired goals. Making teaching materials is by printing cover designs and existing content layouts. After printing, the teaching materials for the Accurate Online Feature Sales module are validated by material experts, linguists, and design experts. Material validation was carried out by an expert in accounting. The feasibility test from material experts was carried out to determine the feasibility of the material in the Accurate Online Sales Features module teaching materials, which were developed based on the aspects of 1) content quality and 2) learning. The results of the material test can be seen in Table 4.

Table 4. Material Expert Assessment Results

No.	Aspect	Score	
		Stage 1	Stage 2
	Content Quality		
1	KD suitability and purpose	3	5
2	Completeness of the material presented	4	5
3	The correctness of the concept and the accuracy of the contents	5	5
4	Clarity of the material presented	5	5
5	Quality of sample questions and practice questions	4	4
6	Ease of understanding the material	5	5
	Learning		
1	Increase motivation to learn	4	4
2	Facilitate the learning process	5	5
3	Facilitate students in sales exercises at service and trading companies based on accurate online	4	5
	Total	**39**	**43**
	Percentage	**86.67%**	**95.56%**

Based on Table 4, the feasibility level was quite good, namely 86.67%. This result is seen from the assessment score, which reached 39 out of the ideal maximum score of 45. After making improvements based on suggestions for improvements that are important in the components of the module content, namely: 1) there is no goal, 2) it is necessary to add feature functions in the table after the feature image, and 3) it is necessary to improve the variety of questions and discussions to make it easier for students to understand the material, there is an increase in the percentage of assessments from material experts from 86.67% to 95.56%. Another suggestion is to supplement teaching materials with video tutorial links to increase student learning motivation. Based on the material test conducted, the Accurate Online Feature Sales module can be tested. Graphic design expert who carried out design validation. Feasibility tests from graphic design experts were conducted to determine the appearance of the teaching materials for the Accurate Online Sales Features module, which were developed based on aspects of 1) display, 2) writing, and 3) image display. The results of the design test can be seen in Table 5.

Table 5. Graphic Design Expert Assessment Results

No.	Aspect	Score	
		Stage 1	Stage 2
Appearance			
1	Cover display of sales feature teaching materials for service and trading companies based on accurate online	4	4
Writing			
1	Writing titles, fonts, and the use of letters	4	4
2	Accuracy in placing KD and learning objectives	4	5
3	Sentence accuracy	4	4
Image Display			
1	Compatibility of background, text with pictures	4	4
2	Clarity of images with content material	4	5
3	The form of pictures in books of sales teaching materials based on accurate online	4	5
4	Appropriateness of design for explanation of sales materials based on accurate online	5	4
5	Selection of color composition for accurate online-based teaching materials	4	4
	Total	**37**	**39**
	Percentage	**82.22%**	**86.67%**

Based on Table 5, the assessment score achieved was 37 out of a maximum score of 45, so a feasibility value of 82.22 was obtained. Several suggestions for improvements need to be made: 1) fixing the back view, which is still empty with additional information; 2) applying typography for a more comfortable display of text; and 3) adding the Accurate Online application logo to make it more attractive. After the revision, there was an increase in the value of the graphic design expert from 82.22% to 86.67%. Based on the graphic design validation test, this module is feasible. A feasibility test from a linguist was carried out to determine the feasibility of the language in the teaching materials for the Accurate Online Sales Feature module, which was developed based on 1) language aspects and 2) sentence aspects. The results of the language validation test can be seen in Table 6.

Table 6. Language Expert Assessment Results

No.	Aspect	Score	
		Stage 1	Stage 2
Language Aspect			
1	The use of sound and correct language rules under linguistic standards	5	5
2	The language used is clear and easy to understand	4	5
3	Using simple vocabulary or sentences	4	5
4	The accuracy of language selection in describing material in textbooks	4	4
5	The sentences/language used are easy to understand	4	4
6	The accuracy of the spelling used in the media teaching materials	4	4
Learning			
1	Accurate sentence structure	4	4
2	Sentence effectiveness	3	4
3	Understanding of information or messages	3	4
4	Conformity with the intellectual development of students	3	3
	Total	**38**	**42**
	Percentage	**76.00%**	**84.00%**

Based on Table 6, the 1st stage of the linguist's assessment results for the language validation test was 76.00%, as seen from the assessment score, which reached 38 out of the ideal maximum score of 50. From the language aspect, the teaching materials for the Accurate Online module are suitable. Points of improvement that need to be considered are the aspects of the sentence in terms of effectiveness, understanding of the information or message, and suitability with the intellectual development of students. After the revision was carried out with improvements to the sentence aspects, there was an increase in the test score of the validator to 84.00%. In terms of language, after being revised, the Accurate Online Feature Sales module is suitable for learning. Revision of experts in the accurate online module is show in Table 7.

Table 7. Revision of Experts in the Accurate Online Module

No	Aspect	Before	After
	Material		
1.	KD Suitability and Purpose	There are no learning objectives	There are/added learning objectives
2.	Completeness of the material presented	There are no feature functions and explanations yet	Function features and explanations are added in tabular form
3.	Quality of sample questions and practice questions	Less variety of questions	Variations of questions are added with credit and cash sales questions
		In the example questions, financial transactions are not presented	In the sample questions before the discussion, the financial transactions are presented.
	Graphic Design		
1.	Cover display of sales features teaching materials for service and trading companies based on accurate online.	The back cover still looks empty	Added module description on the back cover
2.	Writing titles, fonts, and the use of letters	Typography has not been fully implemented	Changes to the typography of the title to make it look more attractive
3.	The form of pictures in books of sales teaching materials based on accurate online	There is no accurate online application logo on the cover	Added the accurate online application logo on the cover so that the appearance becomes more attractive
	Language		
1.	Sentence effectiveness		

No	Aspect	Before	After
2.	Understanding of information or messages		
3.	Conformity with the intellectual development of students		

The fourth stage is implementation. At this stage, the teaching materials for the Accurate Online Sales Features module that have been printed are implemented in the learning process of students in semesters 4 and 6. The first step is a limited trial conducted on 19 students in semester 6. Before explaining the teaching materials, students are given a pretest in general regarding sales. The researcher explained the material based on the teaching

materials module, the Accurate Online Sales Features module. Then, students work on the illustration problems in the module. After that, students worked on post-test questions and were asked to fill out a questionnaire to respond to the teaching materials for the Accurate Online Sales Feature module. The second step is a field trial conducted on 23 semester four students. Students are given general pretest questions regarding sales. The researcher explained the material based on the teaching materials module, the Accurate Online Sales Features module, that had been distributed to students. After that, students worked on post-test questions and were asked to fill out a questionnaire to respond to the teaching materials for the Accurate Online Sales Feature module. The final stage is evaluation. The evaluation was conducted to determine the effect of online accurate module teaching materials on student learning outcomes. An evaluation is conducted to determine how much students understand after using the accurate online sales feature module. The evaluation results can be seen from the assessment of student's attitudes, skills, and knowledge. Attitude assessment is seen from students' attitudes during the learning process in class. Skills assessment is seen from the value of essay questions. The assessment of knowledge is seen from the value of multiple-choice questions.

There is a significant increase in the average value of the pretest and post-test results in the limited test. From the table, it can be seen that the value of knowledge, the average pretest is 63.16, while the post-test is 87.47, the average attitude value is 65.79, and the average skill is 86.32. The pretest results showed that only 1 out of 19 students achieved the KKM. The post-test results showed the opposite; only 1 out of 19 students did not achieve the KKM score, or 95% of students had finished studying. This shows that with this module, student learning outcomes have increased. Then there is a significant increase in the average value of the pretest and post-test results in the field test. From the table, it can be seen that the value of knowledge, the average pretest is 61.34, while the post-test is 93.96, the average attitude value is 66.85, and the average skill is 84.78. The pretest results showed that only 1 out of 23 students achieved the KKM. The post-test results show that 100% of students have achieved the KKM score. This shows that with the module, student learning outcomes have increased.

Seeing the value of the results between the pretest and post-test, which experienced a significant increase, the teaching material products for the Accurate Online Sales Features module significantly affect student learning outcomes. This can be seen in the high percentage of completeness, 95% in the limited test and 100% in the field test. Meanwhile, from Table 9. based on student responses, this module is practical to use in the learning process. The practicality of teaching materials was analyzed from student questionnaires after using teaching materials for the accurate online sales feature module. This practicality test was conducted to determine the practicality level of teaching materials developed based on 1) content quality, 2) technical quality, and 3) learning quality. This practicality test was carried out on semester 4 and 6 students with 42 students. The results of the questionnaire can be seen in Table 8.

Table 8. Student Questionnaire Results

No	Aspect	Score				
		1	2	3	4	5
1	Content Quality Clarity of understanding of the material	-	-	24	96	50
2	Technical Quality Color clarity	-	-	39	100	20
3	Image clarity	-	-	21	112	35
4	Conformity of sample questions and practice questions	-	-	9	92	80
5	Quality of Learning Ease of learning	-	-	24	76	75
6	Assisting in learning	-	-	24	72	80
7	Independent learning	-	-	15	88	75
	Total Score	**1207**				
	Total Maximum Score	**1470**				
	Percentage	**82.11%**				

Table 8 shows that student assessment of the teaching materials for the Accurate Online Sales Feature module resulted in a positive response, where a percentage value of 82.11% was obtained. This percentage value is based on Table 2. The achievement criteria fall into the 80.00% -100% range, categorized as "very good." On average, students assess the Accurate Online Sales Feature module well. This practical test proves that the Accurate Online Feature Sales module is practical and appropriate for learning because it can improve student learning outcomes.

Discussion

In developing learning media, the first thing is to analyze the needs and goals to be achieved. This is adjusted to students' characteristics and needs (Lestari & Parmiti, 2020; Puspasari & Suryaningsih, 2019). The second step is making cover designs and content layouts with an exciting presentation and explanatory pictures. This is followed by validating competent experts in their fields and implementing modules in the learning process. One of the things that makes learning media interesting is the placement of pictures that clearly explain the material. Unique media visualization will be able to provide exciting experiences for students in the learning process. Because learning is an active process, not just passively receiving learning material, students can process this unique experience into their world of understanding (Denisa & Hakim, 2021; Muga & D.N.L., 2017; Sugrah, 2019). By using challenging teaching materials, student motivation can be increased, and it gives students the ability to explore other learning resources independently.

This module's development is essential because students still need handbooks to implement learning. With a handbook, in this case, the Accurate Online Sales Feature module, many students find it easier to understand the material presented. Material sales features in an accurate online application require a detailed explanation of the steps for working on the application. Therefore, with the existence of modules, students can be assisted in understanding the material in more depth. Modules as tools in the learning process can effectively help convey knowledge, skills, and attitudes to students to achieve the competency standards they want to achieve (Fahmi et al., 2019; Sulastri et al., 2019). The module can be optimized with a detailed explanation accompanied by caption images for each step to make it easier for students to understand the material presented. Good learning design and management are needed by giving students the freedom to learn so they can trigger student experience and gain valuable knowledge. This emphasizes that the Accurate Online module can provide experiences that can improve student learning outcomes effectively. Students will naturally look for learning resources that are easy to understand

Generally, the use of the Accurate Online module has improved student learning outcomes. Detailed material explanations and concrete examples from cases can increase students' understanding. With the existing case examples, students are encouraged to be able to solve the problems presented better. Previous study states that the development of students' knowledge will increase through experiments, exercises, and discussions, which refers to the assumption of constructivism theory that there is a reciprocal interaction between people, behavior, and their environment (Bhattacharjee & Deb, 2016). Another study states that the multimedia elements used in modules developed based on student characteristics can effectively improve student learning outcomes ((Lestari & Parmiti, 2020). Learning to use PBL-based digital pocketbooks can increase students' activeness and critical thinking, accompanied by collaboration in analyzing and solving problems presented through a contextual approach. On the other hand, presenting a case study with an illustrated explanatory stimulus in a module can help students understand the material provided (Indraswari & Susilowibowo, 2022). Therefore, communicative modules with adequate case study content are expected to be available and easily accessible to students.

Other study documented that students' understanding of concepts facilitated by the module was much better than students who studied directly without accompanying references (Dewi & Primayana, 2019). The accurate online module developed can facilitate students with visual and kinesthetic learning styles because it is equipped with illustrations and case studies. There is study stated that implementing adaptive learning according to student learning styles can strengthen accounting decision-making skills (Goosen & Steenkamp, 2023). Teachers can also use the presentation of case studies in the modules developed to create learning games. The mechanism for giving badges to students after mastering certain features will further increase learning motivation, ultimately influencing learning outcomes. This is in line with study, who revealed that individual play in learning significantly impacts academic performance (Melchor-Ferrer & Davia-Rodriguez, 2023).

The results of this research describe the process of developing accurate online modules to improve learning outcomes in computer accounting courses, especially in cognitive and psychomotor aspects. Each stage of module development is explained in detail so that it can be used as a basis for future researchers to replicate the methodological procedures for designing and evaluating effective product prototypes. This paper also explains the situation of the research subject so that it can be used as a reference in evaluating situations and conditions that can support the implementation of the product prototype being developed.

The limitation of this research is the limited research time due to changes in the appearance and features of the educational version of the accurate online version in the middle of the research process, so the validation process from experts uses the old appearance in stage 1. In contrast, the revision uses the latest features. In addition, module development can only improve student learning outcomes regarding cognitive aspects. As for the affective and psychomotor aspects, there has not been a significant change. Researchers can give several suggestions: 1) Educators are expected to use interesting teaching materials to increase students' interest in the material. 2) For future researchers and developers, it is expected to further improve the quality of the material content in terms of examples of HOTS questions and more diverse answer choices. 3) For future researchers and developers, it is hoped that they will make and complete a module video tutorial link to make it easier for students to understand

learning material. 4) For universities it is expected to support and facilitate educators in developing teaching materials that are most interesting to students.

4. CONCLUSION

The development of the accurate online sales feature module was successfully carried out using the ADDIE method and received appropriate status from material, language and graphic design experts. This module can improve student learning outcomes in computer accounting learning. The situation of the research subject so that it can be used as a reference in evaluating situations and conditions that can support the implementation of the product prototype being developed.

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