

EVOLVING OF ACCURATE ONLINE PURCHASING MODULE TO IMPROVE STUDENTS' LEARNING OUTCOMES

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ABSTRACT

The objectives of this research are (1) the procedure for developing an Accurate Online purchasing module, (2) the quality level of the Accurate Online purchasing module, and (3) the level of effectiveness of the Accurate Online purchasing module. The method used for research and development is Accurate Online Borg & Gall procedure, which is modified into seven stages. The subjects in this research were Accounting Education students at the Universitas PGRI Madiun. Data collection techniques are observation, interview, questionnaires, documentation, and test results. Data processing is done using SPSS. The primary product field test uses a nonequivalent control group design. Student learning test results were analyzed using the Mann-Whitney test. The results of this research indicate that the scientific-based Accurate Online purchasing module that has been developed is declared valid, practical, and effective in improving student learning outcomes.

Keywords: Teaching module; Purchase cycle; Accurate online, Trading company; Learning outcomes

ABSTRAK

Tujuan penelitian ini adalah (1) prosedur pengembangan modul pembelian Accurate Online, (2) tingkat kualitas modul pembelian Accurate Online, dan (3) tingkat efektivitas modul pembelian Accurate Online. Metode penelitian dan pengembangan yang digunakan sesuai dengan prosedur Borg & Gall yang dimodifikasi menjadi tujuh tahap. Subyek dalam penelitian ini adalah mahasiswa Pendidikan Akuntansi Universitas PGRI Madiun. Teknik pengumpulan datanya adalah observasi, wawancara, angket, dokumentasi, dan hasil tes. Pengolahan data dilakukan dengan menggunakan SPSS. Uji lapangan produk utama menggunakan desain kelompok kontrol nonekuivalen. Analisis tes hasil belajar siswa dianalisis dengan menggunakan uji Mann-Whitney. Hasil penelitian menunjukkan bahwa modul pembelian Accurate Online berbasis saintifik yang dikembangkan dinyatakan valid, praktis, dan efektif dalam meningkatkan hasil belajar siswa.

Kata Kunci: Modul pengajaran; Siklus pembelian; Accurate online; Perusahaan dagang; Hasil belajar
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INTRODUCTION

Accounting Computer of Service and Trade is a compulsory subject taken by students of the Accounting Education Study Program at the Universitas PGRI Madiun. The learning achievement of this course is operating and utilizing accounting applications in preparing financial reports. Students need to develop soft skills following the needs of the world of work, market demand, society, and the needs of future generations (Agustina et al., 2022). Students must be equipped with knowledge of using accounting programs; this is a fundamental requirement for running a business (E. Puspita et al., 2021). Subject to accounting computer of service and trade, students learn one of the accounting applications, Accurate Online.

Accounting Computers of Service and Trade still need some of teaching materials in the form of printed modules. Students still use modules in PDF format. Learning is carried out directly in class in practice. Lecturers make learning videos and quizzes and upload them to e-learning as a means of student-independent learning. Students need help to understanding one step to the next when recording transactions. Students still need guidance from lecturers and quickly need to remember the steps for recording transactions in an Accurate Online application.

Based on the above problems, developing teaching materials as modules is necessary. The advantage of using modules is that they can create practical and meaningful learning (Sitorus et al., 2019). The module is part of the teaching material in printed form (Vina et al., 2018). Students can use modules as a means of independent learning without the assistance of a lecturer (Erawanto & Santoso, 2016). Based on previous research, teaching material media in digital modules effectively improves learning outcomes (Suyono & Wijaya, 2021). Practical learning modules improve learning outcomes. There are significant differences in the effectiveness test between the experimental and control classes (Firman et al., 2018; Risman & Santoso, 2019). The module effectively increases the understanding of concepts and learning outcomes (Prastyaningtyas & Widiawati, 2018).

Based on previous research, the author's update over the last five years has yet to be research and development of Accurate Online-based accounting computer modules. Accurate online reference materials focus on case studies and steps to solve them, so discussion of the function of each feature is minimal (Yusdita et al., 2022). The developed module focuses on purchasing materials for trading companies. Purchasing includes ordering, sourcing, and supply negotiations (Ilham et al., 2019). A trading company is a company whose main activity is buying and selling goods [12]. Teachers must select learning concepts that fortify students' basic considering aptitudes. Problem-based learning (PBL) is a model that fits this concept (A. D. Puspita et al., 2023). This study uses a problem-based learning model. The problem-based learning model follows the constructivist learning theory (Kardoyo et al., 2020). The problem-based learning demonstrate can move forward understanding and offer assistance understudies learn autonomously (Duda et al., 2019). Constructivism learning theory argues that learning is an activity that aims to find, understand, and use information (Masgumelar & Mustafa, 2021). Constructivism learning theory emphasizes the process, not learning outcomes (Muhajirah, 2020). The purchasing module uses a scientific approach. The scientific method can create active, independent students and improve their higher-order thinking skills (Lilik & Rusno, 2019). The scientific process effectively improves learning outcomes (Istuningsih et al., 2018). Researchers suspect a significant difference in the average student learning outcomes before and after using the Accurate Online purchasing module.

Based on previous literature and research results, researchers researched and developed Accurate Online purchasing modules for trading companies with a scientific approach. It is trusted that the purchase module can make strides learning results. The reason of this investigate is to discover out: (1) the procedure for developing Accurate Online purchasing modules for trading companies with a scientific approach; (2) the quality of Accurate Online purchasing modules at trading companies with a scientific approach; (3) the effectiveness of Accurate Online purchasing modules at trading companies with a scientific approach on student learning outcomes.

METHOD

This is a research and development. Research and development is a method that contains steps to produce new products or improve existing products and test their effectiveness (Nurhadi et al., 2022). The research and development design used as needed is based on the Borg & Gall model. The research and development of the Borg & Gall model consists of 10 stages, but the authors break it down into seven stages. The seven stages of creating the Borg & Gall demonstrate are (1) investigate and data collecting; (2) arranging; (3) creating a preparatory frame of item; (4) preparatory field-testing; (5) essential item amendment; (6) fundamental field-testing; (7) operational field testing. The research was conducted to study the accounting education program at the Universitas PGRI Madiun at Setia Budi Street, Madiun City.

The data sources used in this research are primary data and secondary data. Preliminary data includes the results of interviews with lecturers and students taking Accounting Computer of Service and Trade. This research uses the point of view addressed to three specialists, namely material, language, and media specialists, aiming to determine the validity of the product (Wardoyo, 2016). The researcher also gave a questionnaire to semester two students who graduated from Vocational Schools majoring in accounting to evaluate the product's practicality – the value of students' learning outcomes in semesters four and six in assessing product effectiveness. The secondary data used in this research is the data of semester four and six students from lecturers of accounting computer of service and trade.

The subjects of this research were validators and students of the Accounting Education Study Program. The validators consisted of a material expert, a language expert, and a media expert. The preliminary field subjects consisted of seven students of semester two which is graduating from Vocational Schools majoring in accounting; the main field testing subjects were 39 students taking accounting Computer of Service and Trade, namely semesters four and six. The design of the module's effectiveness uses the nonequivalent control group experimental design by comparing the effect of the module on the control class and experimental classes (Rahmat et al., 2020).

The data collection instruments used in this research were as follows: (1) observation, (2) free interview, (3) questionnaire (consisting of expert validation questionnaires and student response questionnaires), (4) documentation, (5) test techniques used to find out the effectiveness of the Accurate Online purchasing module, namely in the form of pretest and post-test.

The data analysis used in this research consisted of (1) descriptive analysis, which included the stages of needs analysis, expert assessment, and preliminary field. The data analysis phase to be carried out is as follows: (a) the questionnaire that the respondent filled in was checked for the completeness of the answers, (b) quantify the

answers to each statement with a predetermined score, (c) tabulate data, (d) calculate the percentage of the questionnaire components with the formula:

$$\text{Percentage} = \frac{\text{Sum total score (X)}}{\text{Highest score (X}_1)} \times 100\% \dots\dots\dots(\text{Equation 1})$$

Information:

Total score = the total number of scores obtained from respondents

Highest score = maximum score for each question item

Table 1. Development revision decision-making

Percentage	Score	Information
81% - 100%	Very good	No revision needed
61% - 80%	Good	No revision needed
41% - 60%	Passably	Revision
21% - 40%	Not good	Revision
0% - 20%	Very not good	Revision

Source: Riduwan (2016)

Quantitative analysis using inferential statistics is used to determine the effectiveness of the Accurate Online purchasing module in improving student learning outcomes. The effectiveness of the module is based on the differences in the learning outcomes of the experimental and control classes, namely, using the Mann-Whitney tests. The Mann-Whitney test uses SPSS 25 analysis, which is preceded by prerequisite tests, namely the normality test and the difficulty of homogeneity.

RESULT AND DISCUSSION

Step 1: Research and Information Collecting

Needs Analysis

The needs analysis aims to obtain information about the problems when studying accounting computer of services and trade in semesters 4 and 6. Researchers conducted observations and accessible interviews with supporting lecturers and students who were taking Accounting Computer of Services and Trade.

Based on the results of observations and interviews with lecturers and students, the following data were obtained: (1) Still using the module in pdf format, which contains sample material about transactions without any detailed explanation; (2) Lecturers make learning videos and quizzes that are uploaded in e-learning to overcome the limitations of learning in class; (3) Students do not understand step one to the next when recording transactions Accurate Online; (4) Students quickly forget and need guidance from lecturers when recording transactions Accurate Online.

Based on the results of interviews with lecturers and students, it is necessary to develop teaching materials to create effective and efficient learning (Lubis & Ismaya, 2020). The module was chosen because it can improve students' ability to learn independently without assistance from the lecturer (Pratita et al., 2021). Researchers took the initiative to develop an Accurate Online purchasing module for trading companies to learn accounting computers of services and trade.

Literature Study

At this stage, the researcher identified the characteristics of the module. The module contains instructions for use, a title, a preface, a table of contents, materials, assignments, practice instructions, formative tests, and a bibliography (Septora, 2017). Researchers identify the quality of good product development. The quality of the module is analyzed based on its validity, practicality, and effectiveness (Yulastri et al.,

2020). The validity of the module is based on the results of expert assessment; practicality is analyzed based on the results of the student response questionnaire and the effectiveness of student learning outcomes (Nesri & Kristanto, 2020).

Researchers identify the material to be developed in the module. Based on the Semester Learning Plan (RPS) made by the supporting lecturer, the researcher chose Accurate Online purchasing materials at a trading company. Researchers decided to purchase because purchasing is one of the activities to obtain goods at a trading company (Purnomo & Mubarak, 2022). This purchase material contains the definition of the purchase journal, the uses of the purchase journal, and transactions in the purchase journal (Suvi, 2021). Based on the results of a review of the existing literature, the material in the module is adjusted to the Achievements of Course Learning (CPMK) and the literature review that has been conducted.

Step 2: Planning

At this stage, the researcher designed an Accurate Online purchasing module with a scientific approach. The planning stage is carried out in several stages, including (1) determining learning outcomes, and the purchasing module is adjusted to the CPMK of the accounting computer of services and trade, namely CPMK 1-9 and Sub-CPMK 3. Based on the CPMK that has been determined, the learning objectives to be achieved include analyzing and implementing the recording of purchase transactions, returns for purchases of merchandise, and payment of accounts payable. Next, the researcher compiled a learning implementation plan (RPP). (2) Determine the purpose of using the module to improve learning outcomes and make it easier for students to understand the material independently. (3) Determine module users, namely students teaching accounting computers of services and trade. (4) Compiling the instruments, the researcher made a research instrument grid for the purchasing module assessment criteria. The research instruments used were validation sheets and student response sheets. A validation sheet is used to determine the eligibility or validity of the module. Validation sheets are given to material, language, and media specialists. Student response sheets are used to find student responses regarding using the purchasing module.

Step 3: Develop a Preliminary Form of Product Development of an Accurate Online Purchase Module

At this stage, there are several steps in making the purchasing module. The module creation steps are described: (1) Semester lesson plans for accounting computer of service and trade. Researchers identify learning outcomes and course outcomes that must follow the curriculum of the study accounting education program. Next, the researcher determines the final ability of each learning stage (Sub-CPMK).

The next step is (2) determining the evaluation tool; the researcher uses practice questions in the module. This evaluation aims to measure the level of understanding of students' concepts. The module contains an assessment of knowledge, skills, and attitudes. Evaluation of knowledge in the form of multiple-choice questions with a total score of 22; case study skills, namely recording transactions, with a total score of 70; and attitude with a scale of 1-4 with a total score of 8. The total overall score is 100. (3) In compiling module material, the researcher collects references regarding purchasing material based on Accurate Online. References include modules lecturers and students use when studying, articles, and journals containing purchasing materials at trading companies.



The final step (4) is the module's structure. The researcher designed the purchasing module with a scientific approach, which was the initial draft of module development. The module structure includes the front cover (cover), preface, table of contents, instructions for use, concept maps, learning outcomes, materials, illustrated questions, summaries, practice questions, and bibliography.

Expert Validation

Two lecturers and a computer accounting teacher provide assessments, comments, and suggestions for improving the module. The validation process is carried out face-to-face by meeting directly with specialists.

Material Expert Validation

Material expert validation was assessed by accounting computer subject teachers at SMKN 2 Madiun. The material expert assessment questionnaire contains four aspects: content feasibility, presentation, language, and usefulness.

Table 2. Material Expert Validation Results

Material Expert Assessment Indicators	Scoring Scale			
	$\sum ni$	$\sum N$	Score	Information
Content feasibility aspect	61	65	93,84	Very Practicable
Aspects of presentation feasibility	29	30	96,66	Very Practicable
Elements of the linguistic component	14	15	93,33	Very Practicable
Aspects of usefulness	10	10	100	Very Practicable
Total Score	114	120	95,95	Very Practicable

The material expert validation stage is carried out in only one step. Based on these data, the validation results obtained from material specialists on the Accurate Online purchasing module for scientific-based trading companies are as follows: the content feasibility aspect brought 93,84% with very feasible criteria, the presentation feasibility aspect obtained a value of 96,66% with very achievable standards, the linguistic component aspect obtained a value of 93,33% with very feasible criteria, the usefulness aspect obtained a value of 100% with very doable measures. After being averaged, 95,95% is obtained with very achievable standards. These data show that the material in the Accurate Online purchasing module for scientific-based trading companies is suitable. It is based on the assessment of material specialists who obtained an average score of 95,95% with very feasible criteria, meaning that it can be used in learning activities.

Linguist Expert Validation

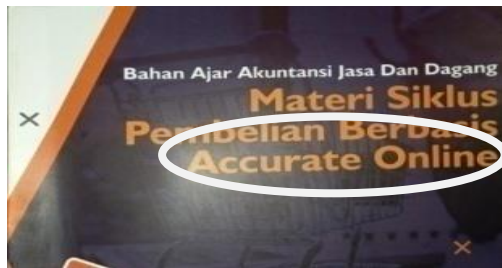
The purchasing module is assessed by qualified linguists in Indonesian Language and Literature, namely lecturers in the Universitas PGRI Madiun. The linguist's assessment questionnaire includes four aspects: straightforwardness, communicativeness, conformity with student development, and use of terms, symbols, and icons.

In the validation of linguists, two stages must be passed. Based on data from Table 3, the results of validation from linguists on an Accurate Online purchasing module for scientific-based trading companies are obtained as follows: straightforward aspects get 73,33% in the feasible category, communication aspects get 85% in the very conceivable type, aspects of conformity with student development 100% with very achievable criteria, and elements of the use of terms, symbols or icons earn 80% in the conceivable category. After being averaged, a value of 89,16% is obtained with feasible

criteria.

Table 3. Results of Stage I Validation by Linguist Expert

Language Expert Assessment Indicator	Scoring Scale			
	$\sum ni$	$\sum N$	Score	Information
Straightforward	11	15	73,33	Practicable
Communicative	17	20	85	Very Practicable
Conformity with student development	10	10	100	Very Practicable
Use of terms, symbols, or icons	8	10	80	Practicable
Total Score	49	55	89,16	Very Practicable



3) Nomor #. Isikan nomor buk
Pengguna juga dapat men
default dan accurate online d

Figure 1a. Initial Draft



3) Nomor #. Isikan nomor bu
Pengguna juga dapat me
default dan accurate online!

Figure 1b. After Writing Improvement

In stage I, the linguist validation gave suggestions for improvement, namely vocabulary from foreign languages in italics. The researcher made improvements according to the recommendations given by linguists, in which all foreign language vocabulary was italicized. Figure 1 shows the results of the revisions made according to the advice of linguists. There are two pictures where (a) the front cover and the contents of the buying module for writing Accurate Online writing have not been italicized, while figure (b) the front cover and the contents of the purchasing module for writing Accurate Online writing have been italicized. Stage II linguists reprint purchased modules that have been corrected according to the advice of linguists for validation.

Table 4. Results of Stages II Validation by Linguist Expert

Language Expert Assessment Indicator	Scoring Scale			
	$\sum ni$	$\sum N$	Score	Information
Straightforward	13	15	86,66	Very Practicable
Communicative	17	20	85	Very Practicable
Conformity with student development	10	10	100	Very Practicable
Use of terms, symbols, or icons	9	10	90	Very Practicable
Total Score	49	55	90,41	Very Practicable

Based on data from Table 4, the results of phase II validation obtained an overview of the effects of assessments from linguists regarding the use of sound and correct grammar in the Accurate Online purchasing module in scientific-based trading companies. Based on the assessment indicators, an average value of 90,41% is obtained with feasible criteria. From this assessment, the use of language in the Accurate Online purchasing module of scientifically based trading companies is very appropriate for use in learning activities.

Media Expert Validation

Media specialists qualified in the IT field assessed the Accurate Online purchasing module, namely lecturers in the Informatics Engineering Program at Universitas PGRI Madiun. The media expert's assessment questionnaire sheet contains three aspects: the feasibility of presentation, language, and utilization.

Table 5. Results of Stage I Validation by Media Expert

Media Expert Assessment Indicator	Scoring Scale			
	$\sum ni$	$\sum N$	Score	Information
Presentation eligibility	37	45	82,22	Very Practicable
Language eligibility	40	50	80	Practicable
Functions and benefits	4	5	80	Practicable
Total Score	81	100	80,74	Practicable

Two steps must be carried out in the media expert validation stage. Based on Table 5, the validation results obtained an average of 80,74% in the feasible category. In the first validation phase, media specialists provided suggestions for improvement, namely the need to adjust page margin formats to be more consistent. Researchers must improve according to media specialists' advice and then carry out a stage II validation assessment of media specialists.

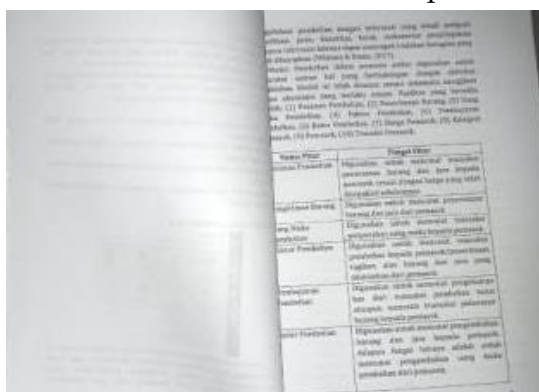


Figure 2a. Initial Draft

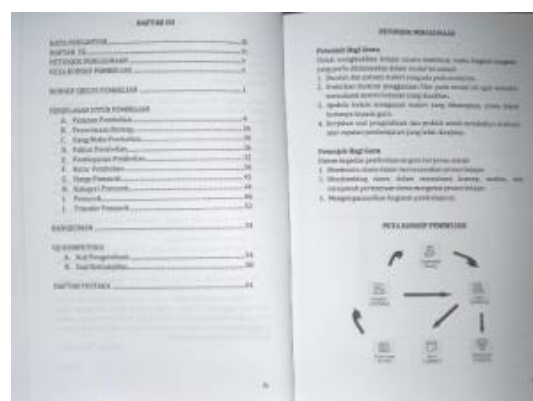


Figure 2b. After Margin Format Fixing

Based on Figure 2, the improvement results are shown according to media specialists' advice. There are two images where image (a) the module is printed not according to the margin format, and image (b) the module is printed back and forth according to the margin. After the purchase module has been repaired according to media specialists' advice, the next stage is the second stage of the media expert's validation assessment.

Table 6. Results of Stage I Validation by Media Expert

Media Expert Assessment Indicator	Scoring Scale			
	$\sum ni$	$\sum N$	Score	Information
Presentation eligibility	38	45	84,44	Very Feasible
Language eligibility	42	50	84	Very Feasible
Functions and benefits	4	5	80	Feasible
Total Score	84	100	82,81	Very Feasible

Table 6 shows the results of media specialists' assessment of the Accurate Online purchasing module in scientific-based trading companies, obtaining an average value of 82,81% with very feasible criteria. The assessment results indicate that an Accurate

Online purchasing module for scientific-based trading companies meets the requirements as a medium and is viable for use during learning activities.

Module quality is analyzed based on validity, practicality, and effectiveness (Kristanto et al., 2016). Based on the opinion of the material specialists, it obtained 95,95%; linguists at 90,41%; media specialists at 82,81% with a very feasible category without revision. Based on the validation results of the material, language, and media specialists, it can be concluded that the purchasing module the researcher developed is valid and can be used for the next stage of trials.

Step 4: Preliminary Field Testing

Preliminary or preparatory field testing is called restricted trials. Preparatory field testing points to evaluate the common sense of the module. The researcher conducted a preparatory field test of 7 second-semester students who graduated from a Vocational High School majoring in accounting. At this field trial stage, the researcher explained the instructions for use and the material for the purchasing module to students in advance. After students get an explanation of the material, they simulate the use of the purchasing features in the module. Students follow the steps to input transactions in the module. After students have acted on using features, they are given a questionnaire containing assessments, comments, and suggestions. Student assessments and responses were analyzed to determine the practicality level of the module.

Table 7. Analysis of the Preliminary Field Testing Questionnaire

Student Response Assessment Indicators	Scoring Scale			
	$\sum ni$	$\sum N$	Score	Information
Aspects of appearance and presentation	136	140	97,14	Very Practical
Quality aspect	171	175	97,71	Very Practical
Benefits aspect	70	70	100	Very Practical
Total Score	377	385	98,28	Very Practical

The data in Table 7 shows that the results of the preliminary field testing showed that the purchasing module obtained a percentage of 92,28% in the practicality category, which is very practical. At the initial field testing stage, semester two students were enthusiastic about learning the Accurate Online purchasing module. Based on the student response assessment results, they obtained a percentage of 98,28% in the convenience category. The Accurate Online purchasing module is included in the practical category and can be tested later. Based on the results of free interviews with several students, it was found that the module is beneficial for beginners who want to learn Accurate Online, and it is more interesting if the module is printed in color.

"This purchasing module benefits beginners unfamiliar with Accurate Online. This module contains complete material, but it would be more interesting if the module could be printed in color."

Step 5: Main Product Revision

At this stage, the researcher improved the module based on the preliminary field testing's assessment results, comments, and suggestions. There was no improvement based on the primary field-testing results, and we obtained an assessment of 98.28% in the convenient category. Semester 2 students who are vocational school graduates majoring in accounting gave an excellent response, namely, the purchasing module is

very useful in helping beginners who want to learn Accurate Online.

Step 6: Main Field Testing

The main field-testing phase is carried out on students taking Accounting Computer of Services and Trade, namely semesters four and six. The number of each class is 22 semester four students and 17 semester six students. The activities carried out at this stage include the researcher first explaining the learning objectives that students must achieve. Students work on pretest questions before learning begins. The pretest questions aim to determine learning outcomes before students are given treatment. The pretest questions are in the form of multiple-choice questions on paper.

The purchasing module did not distribute the treatment of the student control class, while the module distributed the experimental class. Students from the control and experiment classes observed material exposure and simulated the use of Accurate Online purchasing features. Students from the control and experimental classes directly practiced the illustration problems. Each student has two databases for illustration simulation practice and skills assessment. Then, students analyzed and concluded the steps for implementing the recording of Accurate Online-based purchase transactions. Then, the researcher reviewed the material that had been presented.

At the end of the learning phase of the main field resting, students worked on post-test questions to determine their level of understanding of students after being given treatment. Data on student learning outcomes was obtained at the main field testing stage. Student learning outcomes are used to determine the effectiveness of the purchasing module. The effectiveness test used the Mann-Whitney test; previously, the prerequisite tests, namely the test of normality and the test of homogeneity, were carried out.

Based on the Shapiro-Wilk test, it was found that the Sig. The experimental class is 0,024, and the value of Sig is more than 0,05. The control class is 0,085, where the p-value (Sig.) is more than 0,05. The post-test value data for the experimental and control classes are typically distributed. The value data of the experimental and control classes are normally distributed, then a homogeneity test is carried out. The data variance is homogeneous if the p-value (Sig.) > 0.05.

Based on the homogeneity test result, it was found that the value of Sig. Based on Mean $0,719 > 0,05$, it can be concluded that the data variance of the experimental and control classes' post-test values are the same or homogeneous. The next step is to test the effectiveness of the Mann-Whitney test. This test aims to determine whether there are differences in the post-test results of the experimental class with module treatment and the control class without module treatment.

Based on Test of Mann-Whitney, the Asymp value is obtained. Sig. (2-tailed) of $0,000 < 0,05$, there is an average difference in student learning outcomes between classes with module treatment and classes without modules. Based on the results of the Mann-Whitney test, H_0 is rejected, and H_1 is accepted. There is a difference between the post-test average scores of the experimental and control classes.

Table 8 presents the post-test average scores for the experimental and control classes. The experimental class's post-test results obtained an average of 90,32, while the control class obtained an average of 66,41. The value of the experimental class is greater than the value of the control class. Based on these results, using scientifically based Accurate Online purchasing modules can improve student learning outcomes.

The preparation of modules is crucial because it can help students master the competence of teaching materials theoretically and practically (Gunawan, 2020). Based

on the post-test average learning outcomes and previous research, it can be concluded that the post-test average score of the experimental class with the purchase module treatment is higher than that of the control class without the module. The module helps students to develop their conceptual understanding in an active, creative, and productive manner following constructivism learning theory (Hayati & Husnidar, 2022).

Table 8. Average Value of Experimental and Control Classes

Group Statistics					
Class		N	Mean	Std. Deviation	Std. Error Mean
Learning	post_experimental (module)	17	90,32	5,731	1,390
outcomes	post_control (without module)	22	66,41	5,889	1,256

Constructivism learning theory can increase understanding and emphasize student involvement in dealing with problems (Masgumelar & Mustafa, 2021). It emphasizes process skills rather than learning outcomes in understanding Accurate Online purchasing material (Muhajirah, 2020). The purchasing module is based on the constructivist learning theory, which is expected to increase student independence (Aghni, 2022).

Based on the research results, the scientific approach provides better learning outcomes. It is evidenced by the increased learning outcomes of the experimental class treated with scientific-based modules compared to the control class treated with the lecture method and without modules. The scientific approach effectively improves learning outcomes (Istuningsih et al., 2018). A scientific approach can create active, independent students and improve higher-order thinking skills (Lilik & Rusno, 2019).

During the main field testing, the researcher conducted free interviews with several students to determine whether there were any improvements to the module. Based on interviews with students from the experimental class, the purchasing module is very useful in helping students understand the concept of purchasing based on Accurate Online.

The Accurate Online purchasing module is helpful for beginners who want to learn Accurate Online. This module contains complete material, and each feature is explained. Students need this module to understand the concept of purchasing Accurate Online independently.

Step 7: Operational Product Revision

After conducting the main field testing, the researcher reexamined the module item based on the learning results and open interviews with understudies. Based on the main field testing results and accessible interviews with several experimental class students, there was no module improvement.

CONCLUSION

Based on data from the research and development of Accurate Online purchasing modules in scientific-based trading companies, it can be concluded that the development of Accurate Online purchasing modules for accounting computers of services and trade uses the Borg & Gall research method. The stages of the Borg & Gall strategy comprise of investigate and data collecting, arranging, creating a preparatory shape of item, preparatory field testing, essential item modification, fundamental field testing, operational item modification, operational field testing, last item modification,



spread, and usage. The author only conducts research up to the operational product revision.

This development stage was chosen to determine the validity, practicality, and effectiveness of the product that has been developed, namely the Accurate Online Purchase Module. The quality level of the purchasing module obtains expert validation results with an average value of 95,95%, linguists on average of 90,41%, and media specialists on average of 82,81%. The purchasing module is declared valid, feasible, and can be used for learning activities. The level of practicality based on the preliminary field testing, namely the assessment of student responses, obtained an average of 98,28%. The module getting the category is efficient and worth testing. The level of effectiveness of the purchasing module based on the Mann-Whitney test obtains an Asymp value – Sig. (2-tailed) of $0,000 < 0,05$. There is an average difference in student learning outcomes between the experimental class with modules and the control class without module treatment.

This study had several limitations, namely (1) this research was limited to the subject, had a small sample size, and was only generalized to the study accounting education program at the Universitas PGRI Madiun. (2) The modules developed were not widely disseminated, and suggestions were received to be printed in color to make them more attractive. (3) Researchers only conducted research up to revision stage II without the operational field testing, so there needed to be more effectiveness and adaptability with potential users.

The advice given by researchers to lecturers or educators is that the results of developing the purchasing module can be used to support learning activities. It is hoped that this will make it easier to deliver the material. Suggestions for further research: The results of the development of the purchasing module can be used as reference material and comparison. It is hoped that researchers can improve the shortcomings of the module by delivering different materials.

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