

Development of Student Teaching Materials Using an Inquiry Approach Oriented on Critical Thinking Ability in Service Company Accounting Courses

Indah Pertiwi^{1*}, Yulyanah², Lisda Fitriana Masitoh³
^{1,2,3}Universitas Pamulang, South Tangerang, Inndonesia
dosen01936@unpam.ac.id^{1*}, dosen00874@unpam.ac.id², dosen01928@unpam.ac.id³

Abstract

Learning in higher education is not just about providing material on a particular topic but must also provide a learning experience that enables the development of student independence in learning so that it can improve student learning achievement. There are several obstacles in studying Service Company Accounting in the D3 Accounting Study Program at Pamulang University, including: (1) lecturers are still the main source for learning accounting; (2) the books used by students are inadequate for a conducive learning process; and (3) students find it difficult to understand the contents of the available textbooks so that students' motivation to learn becomes less. Apart from that, based on the results, students' critical thinking abilities are still low. This is what prompted researchers to prepare Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking skills in the hope that it will make it easier for students to learn Service Company Accounting. The aim of this research is to produce Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking skills using an inquiry approach oriented towards critical thinking skills in quality Service Company Accounting lectures based on the aspects: (1) validity, (2) practicality, and (3) effectiveness. The development in this research is the development of Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking skills using an inquiry approach oriented towards critical thinking skills in Service Company Accounting lectures. The development model used in this research is the Borg & Gall development model. Theoretically, the results of this research will improve students' critical thinking skills and the resulting products can be used in Service Company Accounting lectures.

Keywords : student teaching materials, inquiry approach, critical thinking skills

INTRODUCTION

Education plays a very important role in the process of improving the quality of human resources (HR). The world of education must be able to ensure that the human resources it produces will have competencies that are able to compete in the global era. This is in accordance with the definition of education as stated in Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System article 1 paragraph 1 which reads:

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble morals, and skills needed by themselves, society, nation and state (Republic of Indonesia, 2003: 27).

This juridical law emphasizes that national education has a mission to develop perfect humans. Therefore, the educational programs offered must be able to provide evidence of the formation of abilities/competencies that are considered relevant to the global era.

Higher education is a continuation of secondary education which is organized to prepare students to become members of society who have academic and professional abilities who can apply, develop and create science, technology and the arts. High lecturers are expected to produce graduates with academic abilities in the scientific field they are pursuing. Therefore, higher education lecturers must be able to follow developments in science and technology so that they can update the activities and learning processes that take place therein.

The learning process in higher education is different from the learning process in school. Learning in higher education is not just about providing material on a particular topic but must also provide a learning experience that enables the development of student independence in learning so that it can improve student learning achievement.

One factor that can increase student learning independence is the availability of adequate teaching materials. Differences in the characteristics of students in each university lecturer have implications for the need for the teaching materials used. Teaching materials are all forms of materials used to assist educators in carrying out teaching and learning activities (Depdiknas, 2008: 6). Teaching materials should be created and designed according to instructional principles so that they can be used by students and lecturers to support the learning process, including in service company accounting lectures.

Service Company Accounting is one of the mandatory courses in the D3 Accounting study program at Pamulang University. Through Service Company Accounting courses, students are expected to be able to grow and develop into individuals who are ready to apply accounting in responding to various life challenges now and in the future, especially in the financial or economic fields. Thus, it can be understood that accounting plays an important role in human life and is related to other fields, especially in the field of economics/finance.

Based on the results of a study by Service Company Accounting lecturers in the D3 Accounting Study Program at Pamulang University, it is known that there are several obstacles in studying Service Company Accounting, including: (1) lecturers are still the main source in learning accounting; (2) the books used by students are inadequate for a conducive learning process; and (3) students find it difficult to understand the contents of the available textbooks so that students' motivation to learn becomes less.

This fact is very worrying, on the one hand, students really need accounting teaching materials that suit their needs, but on the other hand, the availability of these teaching materials is still very rare or even non-existent. This is what prompted researchers to prepare Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking skills in the hope that it will make it easier for students to learn accounting, especially Service Company Accounting.

Service company accounting is a financial recording system used by service companies. The characteristics of transactions that occur in service companies are closely related to the

activities of providing services to consumers. Service Company Accounting is one of the courses that plays a very important role in accounting, because it requires critical, creative, systematic and logical thinking so that it makes a contribution to everyday life starting from simple things such as basic financial calculations to basic financial calculations. complex and abstract things such as financial reports and so on.

According to Facione (2011: 6), critical thinking is the ability to interpret, analyze, evaluate, formulate conclusions, the ability to explain and self-regulate. This understanding suggests that critical thinking is important in today's modern education, because it will produce people who have high-level thinking qualities. However, this is not in line with current conditions in the field. As stated by Firdaus et al (2015: 227), the learning system in Indonesia still ignores the development of critical thinking skills. Furthermore, Damanik & Bukit (2013: 17) revealed that the cause of the lack of development of critical thinking skills so far is that the curriculum is generally designed with broad material targets so that teachers are more focused on completing the material and a lack of teaching understanding of learning models that can improve thinking skills. critical.

Based on the results of the pretest carried out in the D3 Accounting Study Program at Pamulang University for the Service Company Accounting course, data was obtained that students' critical thinking abilities were still low. These results are based on the fact that out of 72 students, 17 students got a score of 4, while 35 students got a score of 6, 28 students got a score of 10 and only 12 students got a score of 13 out of a maximum score of 15. These results indicate the need for improvement in critical thinking skills. student.

Based on this description, the problem that arises is how lecturers are able to plan Service Company Accounting lecture activities so that they can help students achieve good learning outcomes. Lecturers have an important role in achieving educational goals. It is hoped that lecturers can plan and implement an effective learning process so that learning objectives are achieved. This is in accordance with the opinion of Moon, Mayes, & Hutchinson (2002: 54) which states that effective educators are educators who have systematic preparation and implementation of learning.

Service Company Accounting courses require an approach that can be used so that learning can be meaningful and improve students' critical thinking skills. There are many learning models or approaches that can be used in classroom learning. Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking abilities which will be developed in this research are Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking abilities using an inquiry approach. Inquiry learning places greater emphasis on investigative activities using scientific methods, being active in conducting investigations through thinking activities based on phenomena or problems (Minner, 2009: 3). Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking skills are expected to guide students to be actively involved in discovering their own knowledge and play an active role in learning so that they can develop their critical thinking skills.

Based on the description of the problem above, in Service Company Accounting lectures, Student Teaching Materials (BAM) are required using an inquiry approach oriented towards thinking skills which are able to optimize students' critical thinking abilities. Therefore, researchers conducted research on the development of Student Teaching Materials (BAM using an inquiry approach oriented towards thinking skills using an inquiry approach oriented towards critical thinking skills in Service Company Accounting lectures.

RESEARCH METHODS

This research is included in the type of research and development. The development in this research is the development of Student Teaching Materials (BAM) using an inquiry

approach oriented towards thinking skills using an inquiry approach oriented towards critical thinking skills in Service Company Accounting lectures.

The development model used in this research is the Borg & Gall development model. Based on the results of the study of the Borg and Gall model by adapting it to the needs of this research, modifications were made to the model. The steps in research and development used are:

1. Research and Data Collection

The activities carried out in this stage are collecting information and data as a basis for developing BAM. This is done through pre-research activities to find out facts in the field by interviewing lecturers and students, as well as providing critical thinking ability tests to find out the picture of students' critical thinking abilities. Next, conduct a literature review to support the development of BAM, including:

- a. Perform RPS and SAP analysis.
- b. Analyze the Service Company Accounting textbook
- c. Conduct studies on BAM development
- d. Studying student characteristics

2. Planning

The activities carried out in the planning stage are formulating the research objectives to be achieved and the capabilities required.

3. Initial Product Development

After collecting information and data, conducting literature studies, and preparing a research plan, the next step is to create an initial product design for Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking skills. The results of this initial design produced draft 1 of the learning device product. In this stage, instruments were also developed to support the development of BAM in the form of instruments to determine the validity, practicality and effectiveness of learning tools.

After draft 1 of the learning device product is ready, validation is carried out by experts. Validation is carried out by expert lecturers in the Service Company Accounting course to obtain input for improvements to the BAM being developed and to find out whether the BAM being developed is feasible and meets valid criteria before being tested. After the validation process, product I revision was carried out, based on expert input to produce draft 2 BAM products.

4. Limited Trial

The activities carried out in this stage are testing learning device products on a limited basis on 5-10 students. The aim is to determine the readability aspect of the product being developed. The readability aspect in question is whether BAM can be used in class. This means that students can follow the planned learning using the BAM developed.

Research instruments in the form of learning achievement tests and critical thinking ability tests were tested before being used to determine the effectiveness of BAM. Trials of learning achievement tests and critical thinking ability tests were carried out to estimate their reliability.

5. Product Revision

After the limited trial, the next stage is to revise the BAM product (product revision II) based on input from related parties and also based on the findings in the limited trial. This stage will produce drafts of 3 BAM products.

6. Field Trials

The activities carried out in this field trial stage are using BAM products in actual class conditions to test the product. In each learning activity, observations are made to see the percentage of implementation of the learning process as a basis for determining the quality of learning tools in terms of practicality. The quality of learning tools in terms of

practicality is also supported by filling out assessment questionnaires by accounting lecturers and filling out student assessment questionnaires.

At the end of the planned learning process, students are given a test to determine students' critical thinking abilities. The results will be used to determine the quality of learning tools in terms of effectiveness. Findings during field trials are used as material for revising the products being developed.

7. Final Product Revision

This stage is the final stage in the BAM development process. Based on the results obtained through the previous stage, revisions were made to the BAM product to obtain the final BAM product. The results of the series of developments are then analyzed to be used as reporting material.

8. Dissemination

At this stage, the final BAM product is handed over to the party who will use it. In this case BAM products. submitted to the D3 Accounting Study Program at Pamulang University.

The types of data obtained from this research and development are quantitative and qualitative data. Quantitative data was obtained from scores given by validators in the validation stage, BAM assessment scores from lecturers and students, scores from learning achievement tests and critical thinking ability tests, as well as observation results of learning implementation. Qualitative data is obtained from input from validators, lecturers, students and also from converting quantitative data to specified categories.

The data collection instruments used in this research and development are divided into three types, namely instruments to determine validity, practicality and effectiveness. These instruments are presented in the following table.

Tabel 1. Research instrument

Quality	Instruments used	Source
Validity	BAM validation sheet	Expert Lecturer
	Validation sheet for learning achievement test instruments	Expert Lecturer
	Critical thinking ability test instrument validation sheet	Expert Lecturer
	Lecturer assessment sheet	Lecturer
Practicality	Student assessment sheet	Student
	Learning implementation observation sheet	<i>Observer</i>
Effectiveness	Learning achievement test	Student
	Critical thinking ability test	Student

RESULT AND DISCUSSION

The product developed in this research is Student Teaching Materials (BAM) using an inquiry approach oriented towards valid, practical and effective thinking skills. The criteria for determining the quality of Student Teaching Materials (BAM) developed for students use the product quality aspects proposed by Nieveen (1999: 126) which includes valid, practical and effective. The following is a description of the results of the development of Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking skills.

The following is a description of the results of the development of Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking skills:

1. Preliminary Research Results (Preliminary Study Stage)

Preliminary research activities are carried out to obtain information regarding problems faced in the field, especially those related to Service Company Accounting courses. As a result, information was obtained that the majority of D3 Accounting study program students

still experienced difficulties in studying service company accounting. After knowing the problems stated above, the researcher then carried out a literature study. The results of the literature study obtained by researchers are that learning should provide as many opportunities as possible for students to construct their knowledge (constructivism).

2. Results of the Development or Prototyping Phase (Development/Prototyping Stage)

At this stage, a prototype of Student Teaching Materials (BAM) was produced using an inquiry approach oriented towards thinking skills which was written into a learning model book. The activities carried out to obtain a prototype of the learning model are carried out in two activities, namely developing or making a prototype and validation (formative assessment).

3. Results of the Assessment Phase (Trial Phase).

a. Validity

Based on the results of expert and practitioner assessments of the products being developed, the results showed that Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking skills described in the model book had an average validity score of 99.17. In this case the learning model developed meets the validity criteria with a good level of validity.

b. Practicality

The practicality of Student Teaching Materials (BAM) products using an inquiry approach oriented towards developing thinking skills is determined by the results of the lecturer's assessment, outlined based on the results of practicality assessments from lecturers, practicality assessments from students and based on observation data on the implementation of learning using Student Teaching Materials (BAM) using the approach inquiry is oriented to thinking skills.

Based on the results of the lecturer's assessment, the results obtained were that the implementation of learning using Student Teaching Materials (BAM) products used an inquiry approach oriented towards thinking abilities which had an average practicality score of 82. In this case the implementation of learning met the practical category with a good level of practicality. Based on the results of student assessments, an average practicality score of 55.28 was obtained or had a good level of practicality. Meanwhile, the results of observations of learning implementation show that the percentage of learning implementation in the trial class has reached the minimum criteria for implementation, namely 85.3% implemented in Class A, 83.6% implemented in Class B and 81.25% implemented in Class C. Therefore, based on the practicality criteria, the product developed meets the practical criteria.

c. Effectiveness

The effectiveness of Student Teaching Materials (BAM) products using an inquiry approach oriented towards developing thinking abilities is determined by the student's achievement or learning outcomes after following the learning process using Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking abilities. The implementation of Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking abilities is expected to have an impact on improving students' critical thinking abilities (accompanying impact). Apart from that, Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking skills are also expected to have an impact on achieving student learning success as indicated by a minimum of 75% of students achieving the KKM score set by the school.

Based on the results of the analysis of students' high-level thinking ability test scores, the results showed that the average students' high-level thinking ability scores experienced a significant increase from the initial conditions. Meanwhile, student learning completeness has reached the specified minimum criteria, namely 91.4% of Class A students have

achieved the KKM, 81% of Class B students have achieved the KKM and 75.76% of Class C students have achieved the KKM. These results are in accordance with the research results.

However, even though all the criteria (valid, practical and effective) have been met, several revisions have been made. As explained above, the revisions made to the product include revisions to the language and punctuation used, revisions to the clarity of problem presentation, and revisions to the steps for implementing the learning model. The final product produced is written in Student Teaching Materials which meets the criteria of valid, practical and effective and has been revised based on suggestions and input obtained during the development process. Thus the research question about the quality of the research product has been answered.

The direct impact of learning using Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking skills can be seen in achieving the learning objectives that were determined at the beginning of learning. To measure the achievement of the learning objectives, a learning achievement test is developed which indicators are developed for each competency standard provided. Meanwhile, the accompanying impact of implementing Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking abilities is an increase in students' high-level thinking abilities as a result of learning activities that provide space for students to practice their thinking abilities. To measure the increase in students' critical thinking abilities, a critical thinking ability test instrument was prepared. In this development research, the direct impact and accompanying impact of Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking abilities is also a measure of the effectiveness of the learning model being developed.

However, the development of student teaching materials still has several limitations. Limitations in this development research include:

1. New developments were made to the basic accounting equation material.
2. Extensive trials have not been carried out to determine the practicality and effectiveness of the product being developed. In this case, the new trial activity involved students in three classes and two lecturers.
3. Students' critical thinking abilities are measured with only one type

CONCLUSIONS

The product produced is Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking skills containing learning syntax (steps), social systems, reaction principles, support systems, and learning impacts which are used to stimulate critical thinking skills.

Based on the results of formative assessment (validation) by experts and practitioners, as well as revisions to Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking abilities, it is concluded that Student Teaching Materials (BAM) using an inquiry approach oriented towards thinking abilities have met the valid criteria with a good level of validity.

Based on the assessments of lecturers, students and the results of observations of learning implementation, it is concluded that the learning model meets practical criteria. With a good level of practicality.

Based on the test results of the average increase in students' critical thinking abilities, the results showed that there was a significant increase in the average critical thinking abilities. So it is concluded that the Student Teaching Materials (BAM) using an inquiry approach oriented towards critical thinking skills produced have met the effective criteria.

ACKNOWLEDGMENT

The author realizes that this research is inseparable from the guidance and support from several parties. On this occasion, the author's thanks and appreciation are conveyed to Dr. Pranoto, S.E., M.M as Chairman of the Sasmita Jaya Foundation, Dr. E. Nurzaman AM, M.M., M.Si as Chancellor of Pamulang University, Dr. Ali Maddinsyah, S.E., M.M., as Chairperson of LPPM Pamulang University, Dr. H. Endang Ruhayat, S.E., M.M., CSRA., CMA as Dean of the Faculty of Economics and Business, Pamulang University, Dr. Iin Rosini, S.E., M.Sc., CRSA., CFA., CFRM., CAP as the Head of D3 Accounting Study Program at Pamulang University and Mr and Mrs D3 Accounting lecturers at Pamulang University.

REFERENCES

- Arends, R. I., & Kilcher, A. (2010). *Teaching for student learning (Becoming an accomplished teacher)*. New York : Routledge Ratlor and Pusblishing Company.
- Abdi, Ali. (2014). The effect of inquiry-based learning method on students academic achievement in science course. *Universal Journal of Educatinal Research*, 2(1), 37-41.
- Aizikovitsh-Udi, E., & Cheng, D. 2015. Developing critical thinking skill from dispositions to abilities: Mathematics education from early childhood to high school. *Creative Education*, 6(1), 455-462.
- Allen, M. J. & Yen, W. M. (1979). *Introduction to measurement theory*. Monterey, CA.: Brooks/Cole Publishing Company.
- Anderson, L, W., & Krathwohl, D. R. 2001. *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. New York, NY: Addison Wesley Longman.
- Andi Prastowo. 2013. *Panduan kreatif membuat bahan ajar inovatif*. Yogyakarta: DIVA Press.
- Arends, R, I., & Kilcher, A. (2010). *Teaching for student learning becoming an accomplished teacher*. New York, NY: Routledge.
- Asgharheidari, F., dan Tahri, A. 2015. A survey of EFL teachers' attitudes towards critical thinking instruction. *Journal of Language Teaching and Research*, 6(2), 388-396.
- Bayer, B. K. 1990. What philosophy offers to teaching thinking [Versi elektronik]. *Educational Leadership*, 2(1), 55-60.
- Chambers, P. 2008. *Teaching mathematics*. London, UK: SAGE Publications.
- Coffman, T. 2009. *Engaging students through inquiry-oriented learning and technology*. Lanham, MD: Rowman & Littlefield Education.
- Damanik, D.P., & Bukit, N. 2013. Analisis kemampuan berpikir kritis dan sikap ilmiah pada pelajaran fisika menggunakan model pembelajaran inquiry training dan direct instruction. *Jurnal Online Pendidikan Fisika*, 2(1), 16-24.
- Dell'Olivo, J. M., & Donk, T. 2007. *Model of teaching: Connecting student learning with standards*. Thousand Oaks, CA: Sage Publications.
- Depdiknas. 2008. *Panduan pengembangan bahan ajar*. Jakarta: Direktorat Jenderal Manajemen Pendidikan Dasar dan Menengah.
- Eko Putro Widoyoko. 2009. *Evaluasi program pembelajaran*. Yogyakarta: Pustaka Pelajar.
- Ennis, R. H. 1993. *Critical thinking assessment. Theory into Practice*. 32(3). 179-186.
- Facione, P.A. 2011. *Critical thinking: A statement of expert consensus for purposes of education assessment and instruction*. Millbrae, CA: California Academic Press.
- Firdaus, Kailani, I., Bakar, Md, N.B., & Bakry. 2015. Developing critical thinking skills of student in mathematics learning. *Journal of Education and Learning*, 9(3), 226-236.
- Freeley, A. 2001. *Critical thinking : An introduction*. Cambridge: University Press Cambridge
- Gable, R. K. 1986. *Instrument development in the affective domain*. New York, NY: Springer Science Business Media.

- Larson, B. E., & Keiper, T. A. 2011. *Instructional Strategies for Middle and Secondary Social Studies*. New York, NY: Taylor and Francis Group.
- Lau, J. Y. F. 2011. *An introduction to critical thinking and creativity: think more, think better*. Hoboken, NJ: John Wiley & Sons.
- Madsen, A.L., & Reynold, D. 1993. Planning and organizing the middle grades mathematics curriculum. Dalam Owens, D.T. (Eds), *Research ideas for the classroom middle grades mathematics* (pp. 259-279). New York, NY: Macmillan Publishing Company.
- McArdle. 2010. *Instructional design for action learning*. New York, Ny: Amacom.
- McGregor, D. 2007. *Developing thinking : Developing learning : A guide to thinking skill in education*. New York, NY : Open University Press.
- Minner, D. D., Levy, A. J., & Century, J. 2009. Inquiry-based science instruction-what is it and does it matter?. *Journal of Research in Science Teaching*, X(1), 1-20.
- Moon, B., Mayes, A. S., & Hutchinson, S. 2002. *Teaching, learning and the curriculum in secondary school*. New York, NY: Routledge.
- Naggar-Smith, N. 2008. *Teaching foundation mathematics: From theory tho practice*. Los Angeles: SAGE Publications.
- Nitko, A. J., & Brookhart, S. M. 2008. *Assesment and grading in classrooms*. Upper Saddle River, NJ : Pearson Education Inc.
- Obenchain, K. M & Morris, R. V. 2011. *50 social studies strategies for k-8 classrooms third edition*. Boston, MA : Pearson Education Inc.
- Orlich, D. C, Harder, R.J, Callahan, R.C, et al. (2010). *Teaching strategies : A guide to effective instruction (9th ed)*. Boston, MA: Wadsworth, Cengage Learning.
- Paul, R & Elder, L 1997. Critical thinking: Implications for instruction of the stage theory. *Journal of Developmental Education*, 20, 34-35.
- Preston, L., Harvie, K., Wallace, H. 2015. Inquiry-based learning in teacher education : A primary humanities example. *Australian Journal of Teacher Education*, 40(1), 72-85.
- Republik Indonesia. 2003. *Undang-Undang RI Nomor 20, Tahun 2003, tentang Sistem Pendidikan Nasional*.
- Reynolds, Cecil et all. 2010. *Measurement and assessment in education*. Upper Saddle River, NJ : Pearson Education Inc.
- Ruggerio, V. R. 2012. *Beyond feelings: a guide to critical thinking (9th ed)*. New York, NY: McGraw-Hill.
- Syaiful Sagala. 2011. *Konsep dan makna pembelajaran*. Bandung: Alfabeta.
- Trianto. 2013. *Mendesain model pembelajaran inovatif-progresif*. Jakarta: Kencana.
- Wina Sanjaya. 2008. *Strategi pembelajaran berorientasi proses pendidikan*. Jakarta : Kencana Prenada Media Grup.
- Wu, J. W., Tseng, J.C.R., & Hwang, G.J. 2015. Developing of an inquiry-based learning support system based on an intelligent knowledge exploration approach. *Journal of Education Technology & Society*, 18, 282-300.