The Implementation of Case Method to Improve Academic Performance: A Study on Accounting Student

Sondang Aida Silalahi[1*], Andri Zainal[2], Haryadi[3], Tuti Sriwedari[4]

{sondangaidasilalahi140179@gmail.com}

Faculty of Economics, Universitas Negeri Medan, Medan, Indonesia

Abstract. Previous studies of learning in higher education have found that students need more than just learning but must have deep learning experiences to adapt to increasingly dynamic and competitive environmental conditions. Moreover, students are required to master critical skills instead of technical skills. Therefore, higher education learning design must also anticipate the need for these skills. In response, the government requires universities to implement case study learning (case methods) to guide students in in-depth learning activities through their close interaction with teaching materials during the case solving. Through this learning approach, students are expected to gain critical and cognitive skills relevant to the time's needs. Therefore, this study aims to examine the effect of implementing the case method on improving student academic performance. This research was carried out with a quasi-experimental within-sample method. Experimental participants in this study were accounting students at the Faculty of Economics, State University of Medan, Indonesia. Data were collected using a test instrument and then analyzed by a one-way ANOVA test. The results of data analysis showed that 1) Case Method designed with group-based learning improved accounting students' academic performance. This finding becomes a reference for lecturers in related fields to apply the case method in accounting studies to develop students' critical skills. Furthermore, this can also be a bridge to create different case method designs more suitable for other subjects in the same field of study. Thus, this research can be a bridge of knowledge for further research to innovate higher education learning in economics and business.

Keywords: Case Method, 21st Century Learning, Academic Performance, Accounting Student.

1 Introduction

The Case Method has become a higher education learning design recommended by the Ministry of Education, Culture, Research, and Technology since 2020. The recommendation is contained in Ministerial Decree no. 754/P/2020 concerning Key Performance Indicators (KPI) of State Universities and Higher Education Service Institutions within the Ministry of Education and Culture in 2020 [1]. The Ministry of Education and Culture demands applying the case method to meet the weight of 50% of students' final scores. Thus, implementing the case method must dominate the learning program, and the learning outcomes become an essential indicator in achieving a course's learning objectives. This condition is very

interesting because Kemendikbudristek has begun to focus on learning design instead of just regulating curriculum and learning outcomes. This policy seeks to optimize the learning process to obtain more optimal student academic performance considering the increasingly complex demands of student competence nowadays.

The concept of the Case Method has been studied for a long time and is offered as a practical learning design for teaching students in higher education [2]. The Case Method is implemented by providing structured and ill-structured cases that encourage group discussion and require complex problem solving [3], [4]. Case studies can facilitate lecturers to formulate learning designs that can help students achieve high levels of knowledge, referring to Bloom's taxonomy at the level of analysis and evaluation [3], [4]. In relation to this strategy, Knoop [5] recommends using a "pragmatic problem-solving model" in teaching students through the case method. This model places students in the process of analyzing the cause and effect of the proposed case, formulating alternative problem-solving strategies, evaluating and selecting the best alternative, and developing an implementation plan for the chosen problem-solving. Through the dynamics of learning, the case method is expected to be able to place students in a rich and deep learning process. Meanwhile, the rich and deep learning process has been empirically proven to produce optimum academic performance for students [6]. Based on the regulatory demands, theoretical views, and empirical facts above, this study aims to examine the effect of the Case Method designed with group-based learning on the academic performance of accounting students at Medan State University.

Implementing the case method is expected to increase the intensity of students in discussing in achieving the intended knowledge. In the case study, students are facilitated by space for interaction and group discussion to form constructive discussions and debates to resolve cases. Thus the dynamics of learning are increasingly complex and dynamic. In this learning situation, a meaningful, deep, and time-consuming learning experience is realized. In solving cases, students will explore problems, explore relevant materials and theories in solving them, discuss alternative solutions with colleagues, develop ideas to get the best solutions, design implementation designs for ideas, present them, accept views and improve ideas. These various learning experiences are expected to have a positive impact on improving student academic performance.

This research will generate theoretical, practical, and research outcomes from this study, including new views and empirical evidence related to the use of the case method in teaching accounting students. This empirical evidence will undoubtedly add to the knowledge and references for lecturers in accounting studies to develop case method designs for variations of cognate courses. Furthermore, this study can be a knowledge bridge for further research to establish higher education learning innovations in accounting. Finally, this study can be used to develop best practices in higher education learning in accounting.

2 Theoretical Framework

The case method originated from the learning methods used in the fields of law and health [2]. However, this learning method gained popularity when the Harvard Graduate School of Business used this method in lectures [7]. Although this learning method is relatively young, nowadays, it has been widely used by other disciplines [4], [8]–[10]. The increasing number of fields of science that teach their material using case studies is due to their high level of

adaptation and flexibility to modified in vary learning environment and material which also includes problem-based learning and improves analytical skills [4].

Lectures with case method implemented by presenting content in a narrative format followed by questions and activities that encourage group discussion and solving complex problems. These circumstances challenge students to read, search, and explore information from every possible source to solve the problem or actively participate in the discussion. Case studies facilitate the development of Bloom's taxonomy at a higher level, moving beyond remembering to analysis, evaluation, and application [3], [4]. In happening because the case study placed students in a situation where their knowledge about some concept about particular learning material was not enough. They have to connect their previous knowledge with the new knowledge gained from new literature or discussion to understand certain phenomena or cases proposed by the lecturer. After comprehensively understanding, they should generate ideas to solve the case problem. Again, to solve the problem, they need to open the book again, news, later research, best practices, etc. Those efforts would bring them to the best alternative solutions. The whole process places students in the analysis (C5) and evaluation (C6) levels of cognitive.

Even though much of the literature discusses alternative strategies for applying case studies, Knoop [5] recommends using a "pragmatic problem-solving model" in teaching students. This model is divided into five stages:

1. *Stage 1* - Problem identification. In this stage, the student is asked to identify the problem root from the cases proposed by the lecturer. This stage aimed to stimulate student reasoning to understand the problem correctly and define the critical problem accurately. In addition, it trains the student to develop their analytical and thinking skills, which is crucial to justify the right problem-solving at the further stage.

2. *Stage 2* - Distinguishing the problem from the underlying cause and overt symptoms. This stage is the more specific and careful step of the first stage. In this stage, students are asked to separate the identified problem and symptoms, determine the causes of the problems, define the implication of each situation, explain the scale of the criticality of the problems, and resolve the most significant symptoms or problems that probably result in the destructive impact to the company.

3. *Stage 3* - Creating alternative problem-solving strategies. Based on the identified problem, students are asked to create several options for problem-solving. In this stage, the student should propose an alternative solution based on a sound theoretical foundation or strong reasoning. To be able to answer those tasks, students have to do literature or best practices analysis and constructive discussion. Finally, the result of a debate is presented in the classroom while another group is open to give some reflection.

4. *Stage 4* - Evaluate each alternative and choose the best option. After receiving information from internal and external group discussions in front of another group, students were asked to evaluate their proposed problem-solving. Then, they can revise to determine the best alternative to the problem-solving.

5. *Stage 5* - Develop a plan to implement the selected strategic choice. After the students chose the best problem-solving option they used in their case project, they were asked to develop a plan for implementing alternative problem-solving. Then, the student was asked to write it on a working paper and present it again in class. In the last three stages, the student is trained to construct coherent knowledge and transfer their knowledge, accept others' opinions, give some point of view, negotiate, and make

decisions. The single complex learning activity contains critical thinking, communication, collaboration, problem-solving, and decision-making skills.

Concerning the potentiality of the case method to teach the students, the Ministry of Education and Culture [1] has established a policy that requires universities to produce graduates with critical skills. Following this policy, the Ministry of Education and Culture also requires universities to provide deep learning through case methods and collaborative learning through team-based learning. Furthermore, previous studies have also suggested that the case method involved learners in deep learning experiences and significant time consumption in learning activities [11], [12]. Furthermore, students who practiced deep learning and consumed a long time focusing on their learning activity had better academic performance than students who practiced surface learning [6]. It happens because students will be engaged with their learning material and activities when practicing deep learning.

Moreover, they probably control the environment by themselves to support their learning activity. Therefore, it will take students into flowing moments that consume much time without distraction. In the meantime, students are getting much experience with the literature, cases, and discussion, which in turn helps students construct a broad understanding of some learning objectives. Thus, it can be assumed that the implementation of the Case Method will have a positive impact on student academic performance. Students will gain a rich learning process and experience. Students will be engaged in a deep understanding and discussion among group members. During the debate, the student cannot stand to their knowledge itself. Still, they have to accept other new information or alternative point of view so that they expectedly have a broad idea of some knowledge theoretically and practically.

The learning dynamics above are essential because the student needs a complex experience more than just theoretical knowledge. And learning process has a probability of optimizing the student experience beyond the similar characteristic required in the professional field in this 21st century, as many researchers argue that the form of expertise has shifted in this 21st century. Soft skills and critical skills should complement cognitive and technical abilities, which are mandatory nowadays. The need for technical work in many working conditions has been replaced by information technology even though humans still need to solve a problem that probably happened. That is why humans are increasingly faced with strategic and tactical issues beyond technical skill alone. In these circumstances, the case method focuses on developing academic performance among students. The study performance is identified by the learning activity during the learning process and analysis-based test, which can represent cognitive, critical thinking, and problem-solving skills.

Implementing the case method is inseparable from the practice of team-based learning. In the case method, students are facilitated by space for interaction and group discussion to form constructive discussions and debates to resolve cases. Thus the dynamics of learning are increasingly complex and dynamic. In this learning situation, a meaningful, deep, and time-consuming learning experience is realized. In solving cases, students will explore problems, explore relevant materials and theories for solving them, discuss alternative solutions with colleagues, develop ideas to get the best solutions, design implementation designs for ideas, present them, accept views and improve ideas. These processes will naturally teach students and stimulate curiosity in further self-development.

3 Research Method

The subjects of this study were students majoring in accounting who were in the course of financial management. Therefore, the unit of analysis in this research is the individual. Although carried out in a small sample, this study still has the opportunity to generalize from its findings because the criteria for the selected courses are general. Furthermore, the learning design is also applicable in various studies of economics and business courses so that the successful implementation of the case method in this study can still be adapted to other allied subjects.

Research data were collected through test instruments and observations of student learning activities during lectures. The test instrument is used to measure student academic performance. In addition, data were collected from subjects before treatment (pretest) and after treatment (post-test) [13], [14]. The pretest data is taken from the results of the mid-semester exam, while the post-test data is taken from the results of the final exam at the end of the semester. Meanwhile, the data on learning activities were viewed from students' participation during lectures observed before and after treatment. The case method design refers to the design principles developed by the Ministry of Education and Culture [1]. The design principles of the case method were adapted according to the characteristics of the financial management courses practiced in the accounting department. In detail, the case method design is described as follows.

3.1 Experimental Procedure

The case design method practiced in this research is the ill-structured case. The implementation of the case method is practiced throughout the lecture after the midterm exam. This is done to obtain a change in the phenomenon between lecture activities before the treatment (before the midterm exam) and the phenomenon after the treatment (after the midterm exam) [13], [14]. Changes in phenomena were measured by post-test after treatment at the end of the semester. Students are asked to choose financial management cases in Indonesia in groups. These cases are then analyzed according to the teaching material being discussed. The analysis focused on fraud, financial analysis errors, and financial management that management should carry out to avoid business decision-making errors related to the selected case.

Furthermore, students are asked to present the results of their discussions at each meeting according to the topics planned in the lecture syllabus. The group responsible for the presentation is determined at random during the lecture. Furthermore, audience students are free to respond to opinions, questions, and recommendations for improving the case analysis conducted by the presenter group [5]. Throughout the lecture process, the lecturer records the activities by marking and counting the number of participations given by each student [5]. At the end of the lecture, the lecturer offers a final exam with case-based questions that require answers at the cognitive analysis (C4) and evaluation (C5) levels [4], [5]. Observations were made by testing the difference in scores between the pre-test and post-test and testing the difference in the number of participations given by students before and after treatment.

3.2 Data Analysis

Data analysis in this study used the paired-sample t-test. Paired-sample t-test was used to determine the significance of differences in student academic performance in the same sample before and after treatment. This technique allows researchers to know the effect's significance based on the experimental subject's actual behavior. Data analysis in this study used the help of SPSS 19 software. So that the interpretation of the data was carried out by reviewing the output of the SPSS 19. Hypothesis testing is carried out by reviewing the significance number on the output of the SPSS 19 application. The sig value indicates the significance of the difference. with = 5%. If the value of sig. <0.05, then there is a significant difference between the two sample data [15].

4 Result and Discussion

The subjects of this study were students of Accounting Education study program in the financial management course. When the experimental treatment was practiced, the issue was running online learning. The study was conducted with an experimental design within the sample (within-sample), so this study only used one experimental class. The results of the pre-test and post-test can be seen in table 1. In general, academic performance shows a change from pretest to posttest. On the cognitive score, the pre-test showed 77.74 and the post-test 83.41. Then the pre-test means on student learning activities showed 4.12, while at the post-test, the students got 6.70. It certainly offers a positive increase in academic performance. In addition, the number of standard deviations turned out to be smaller on the post-test than the standard deviation of the pre-test. This fact is good because the variability of the students' scores has decreased so that their abilities are more evenly distributed.

Tabel 1. Descriptive Statistics

No.	Variable	n	Pre-test		Pos-test	
			Average	st. dev	Average	st. dev
1.	Cognitive	34	77,74	8,35	83,41	4,58
2.	Activity	34	4,12	1,52	6,70	1,71

Furthermore, the researcher conducted a paired sample t-test on the pretest and posttest data. The paired-sample t-test showed that both test results and student learning activities increased significantly with t-counts of 87.908 and 17.190 and p-values of 0.000 on both indicators. Based on these findings, it is known that the case-method approach implemented in groups has a positive and significant effect on student academic performance. The test results can be reviewed in table 2 below.

Tabel 2. Result of Paired Sample t-test

	Academic Performance	Mean	Std. Dev.	Std. Error Mean	t	df	p-value
Pair 1	Test	-79.08065	7.08334	.89959	-87.908	61	.000
Pair 2	Aktivitas	-3.91935	1.79524	.22800	-17.190	61	.000

This study attempts to test the effectiveness of the case method in improving the academic performance of accounting students at the Faculty of Economics, State University of Medan. Academic performance in this study was reviewed through observations of student learning outcomes and demonstrated participation. The results of this study found that the case method practiced in the financial management course had a positive and significant effect on accounting students' academic performance.

This research supports the Ministry of Education and Culture's [1] policy regarding the demands on universities to provide in-depth learning through the case method. This study also strengthens the research findings of Zainal et al. [6], which suggests that students who study deeply and consume a long time have better academic performance. Learning with the case method occasionally allows students to be involved in analytical activities. This analysis activity places students in an intense learning situation. In addition, the learning activities are carried out collaboratively so that there is a continuous process of exchanging information and confirming information throughout the group discussion. This view is in line with Healy & McCutcheon [11] and Stewart & Dougherty [12] regarding case learning methods involving learners in deep learning experiences and consuming a long time during learning activities.

Furthermore, case learning helps students know not only a concept but also how it is applied and its implications in actual business practices. Through observing real cases, students have the opportunity to relate textual knowledge to the factual application of that knowledge. Thus, students get a rich and complex understanding of a concept. This is in line with the constructivist theory developed by Vygotsky [16]. Throughout the completion of the case, students are in a discussion room that helps them construct knowledge of the problems they face. Furthermore, according to Bloom's taxonomy, the process helps students achieve higher cognitive levels, namely analysis (C5) and evaluation (C6) [3].

In learning in other courses, the same approach can be adapted according to the characteristics of the lessons being taught. The virtue of the case method lies in the demands of analytical learning so that the technical design of this learning is not rigid and standard. However, lecturers are still required to have creativity in developing cases and formulating technical solutions following learning outcomes and skills targeted at students. Therefore, in addition to teaching students, this design requires lecturers and teachers to continue developing their pedagogical skills and professional knowledge to master learning design, overcome student learning problems and follow up on student learning developments when taught using the case method.

5 Conclusion

This study found that the Case Method practiced in financial management courses affected accounting students' academic performance at the Faculty of Economics, Medan State University. The achievement of the research objectives will produce theoretical and practical benefits for learning in higher education. First, the conception of the case method in the accounting field can further develop and be widely implemented in the related subject. It is represented by the empirical evidence of this research that found the case method is effective in generating better student academic performance. Therefore, other lecturers can use it as a reference to adapt and modify the designs following the characteristics of other allied subjects. Second, this research has enriched knowledge related to case study learning designs that apply to economics and business undergraduate programs. Third, this research can be a bridge of

understanding for further research to innovate higher education learning in economics and business.

This study has limitations on the small sample size and the il-structure design that has minimal intervention from the lecturer in developing the case design. This impacts the management and adjustment of the less systematic learning stages between the learning objectives and the case material to be solved. Further research can innovate learning with structured case designs. The design is thought to produce learning that leads to the specific goals of the targeted learning outcomes.

Acknowledgement

References

[1]   Kemdikbud, (2020). Keputusan Menteri Pendidikan dan Kebudayaan Republik Indonesia Nomor 754/P/2020 Tentang Indikator Kinerja Utama Perguruan Tinggi Negeri dan Lembaga Layanan Pendidikan Tinggi di Lingkungan Kementerian Pendidikan dan Kebudayaan Tahun 2020.

[2]   Boehrer, J. and Linsky, M. (1990). Teaching with cases: Learning to question, *New Dir. Teach. Learn.*, vol. 1990, no. 42, pp. 41–57, doi: 10.1002/tl.37219904206.

[3]   Anderson, L. W., Bloom, B. S. and others. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. Longman.

[4]   Herreid, C. F. (1994). Case studies in science-A novel method of science education. *J. Coll. Sci. Teach.*, Vol. 23, p. 221.

[5]   Knoop, R. (1984). Case studies in education. *St Cathar. Ontario, Canada Praise Publ.*,

[6]   Zainal, A. G., Sagala, H. and Silalahi, S. A. (2021). Do learning approaches matter on setting the time spent for pre-service teachers?. *Cakrawala Pendidik.*, Vol. 40, no. 3.

[7]   Christensen, C. R. And Hansen, A. J. (1987). Teaching and the Case Method Harvard Business School: Boston. MA.

[8]   Dori, Y. J. and Herscovitz, O. (1999). Question-posing capability as an alternative evaluation method: Analysis of an environmental case study. *J. Res. Sci. Teach. Off. J. Natl. Assoc. Res. Sci. Teach.*, vol. 36, no. 4, pp. 411–430.

[9]   Flynn, A. E. and Klein, J. D. (2001). The influence of discussion groups in a case-based learning environment. *Educ. Technol. Res. Dev.*, vol. 49, no. 3, pp. 71–86.

[10]   Knechel, W. R. (1992). Using the case method in accounting instruction. *Issues Account. Educ.* vol. 7, no. 2, pp. 205–217.

[11]   Healy, M. And McCutcheon, M. (2010). Teaching with case studies: An empirical investigation of accounting lecturers' experiences. *Account. Educ. an Int. J.*, vol. 19, no. 6, pp. 555–567.

[12]   Stewart, J. P. and Dougherty, T. W. (1993). Using case studies in teaching accounting: A quasi-experimental study. *Account. Educ.*, vol. 2, no. 1, pp. 1–10.

[13]   Creswell, J. W. and Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

[14]   Sekaran, U. and Bougie, D. (2021). *Research Methods For Business : A Skill Building Approach.* John Wiley & Sons Inc, New York, United States.

[15]   Field, A. (2009). *Discovering Statistics Using SPSS*, 3rd Edition. Sage Publications.

[16]   Vygotsky, L. S. and Cole, M. (1978). *Mind in society: Development of higher psychological processes*. Harvard university press.