Improving the Quality of Blended Learning Lectures Through the Application of the Case Method Model

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Abstract. The purpose of this study in general is to see the effectiveness of the application of the Case Method model in the blended learning lecture process carried out in the Department of Primary School Teacher Education, Faculty of Education, Medan State University. Study Program. This is based on conditions in the field that: 1) In the lecture process, the main task of lecturers is to condition the environment to support behavior change for students; 2) The implementation of the case method is one of the key performance indicators (IKU) of state universities and higher education institutions implemented by the Ministry of Education, Culture, Research and Technology declare; 3), Since 2020 until now, the lecture process at the Department of Primary School Teacher Education, Faculty of Education, Medan State University. Study Program still applies the blended learning method. This research uses a quantitative approach with a quasi-experimental design (Quasi Experiment). The benefit of research for lecturers and students is to improve the quality of lectures in the post-pandemic period so that learning objectives can be achieved in accordance with CPL and CPMK.

Keywords: Case Method, Lecture Quality, Blended Learning

1 Introduction

Teachers' accuracy in creating learning designs determines their capacity to facilitate learning. Enhancing learning design is a prerequisite for raising the caliber of learning. Efforts to raise the standard of learning can begin with the development of a learning plan. For practical learning that demands psychomotor skills and knowledge, appropriate learning strategies are needed.

To achieve student competence in the lecture process, several lecture model approaches are used. The learning model that has been carried out so far is with conventional learning models. This model is often referred to as Teacher Centred Learning which positions lecturers as actors / subjects and students as objects. The quick advancement of information technology lends credence to the ideas of replacing teacher-centered learning with student-centered learning. The goal of student-centered learning is to put the learner at the center of the process. Students are expected to be responsible, proactive, and self-aware in identifying their own learning needs, finding the information they need to meet those needs, and developing and presenting their knowledge in light of those needs and the sources they consult. Conversely, lecturers become facilitators and learning partners in addition to teachers (moving from being the mentor in the middle to the side guide).

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Lecturers implement the learning process in the educational process, particularly in the lecture format, by taking into account the use of learning models that align with the course's requirements. The quality and learning results are impacted by the choice of learning models employed. A successful learning system must evolve, improve, and alter over time.

The competencies that every single student must have in the 21st century are the ability to think creatively, think critically, communicate and collaborate. These four competencies commonly referred to as the 4Cs should be applied in lectures so that students as prospective teachers have abilities that are certainly needed in the future. Education academics, to enter the ASEAN market must have 4C skills, namely critical thinking, collaborative, communication and creativity. Students as one of the elements in education should already have this 4C ability. It is necessary to introduce the 4Cs in lectures, assignments or exercises that lead to the 4Cs and the development of student experience on the 4Cs. The ability to think critically and creatively provides many benefits in various fields, ranging from solutions and decision making. Creative thinking is the use of imagination to come up with the most effective solution to a learning task in solving a problem. Critical thinking is a way of rational thinking focused on deciding what to believe and what to do. Furthermore, the third 4C ability is communication, where communication is at the heart of every activity, everything produced from the workspace, lecture place or classroom is produced from communication. Good writing, reading, communication, and listening skills are essential for cognitive abilities. Communication skills in working together (collaborative) are very necessary. Involving students in learning and helping each other in group assignments given in solving a case

Learning methods that can train critical thinking skills so as to make students more active in learning are case solving learning methods or case methods. The case method's goal is to help students enhance their capacity for intellectual growth, critical thinking , and problem solving. The purpose of using the case approach in mathematics instruction is to help students become more proficient in mathematical critical thinking. The case method is an instructional approach that teaches students to actively confront challenges—that is, real-world problems—and come up with solutions. In addition, the case method is defined as an interactive, discussion-based teaching approach that helps students develop their communication, critical thinking, and group dynamics abilities. Because the teaching approach is problem-based, students can explore topics from several angles and have a better understanding of them.

Learning to solve cases is how to apply the scientific method by thinking systematically and logically. The goal is to develop cognitive abilities and problem-solving skills that are rational, easy and systematic. Furthermore, an understanding of the case method, namely the learning method by relating various cases in the material, can make learning more effective and interesting. This allows you to stay active as well as be able to think creatively and critically when discussing cases with real-life events. Therefore, this method can be applied to expand and develop knowledge and thinking skills to solve problems faced by students.

The effectiveness of this case-solving method is strengthened by several previous studies. The application of case methods in learning can affect the interest, motivation, and learning outcomes of students. Case methods can influence students' motivation and critical thinking. Then previous research also stated that case method learning can improve learning outcomes, interest in learning, and is able to train critical thinking skills because in its application cases are presented that occur around and are associated with the material presented so that creative and

critical thinking skills are needed to find solutions to the cases presented. Based on this presentation, the purpose of this study is to describe how the effectiveness of the case solving learning method (case method) is viewed from the students' critical thinking skills

The case solving learning method basically trains the ability to think systematically, logically, regularly, and meticulously on real-world problem cases. Problem-based learning objectives to help develop students' critical thinking skills and problem-solving skills. Learning using the case method is expected to train students' critical thinking skills where the ability is a process of mental activity that includes various abilities including the ability to formulate problems, argue, report, evaluate, make decisions, act, and interact with others to find solutions to problems in the case to be faced.

One of the benchmarks for the quality of human resources comes from their educational background, so that in an effort to develop quality human resources, the world of education is the main focus. The world of education is expected to prepare human resources who are critical, innovative, and not only capable, but also agile in solving the problems they face every day. To produce quality and character human resources, lecturers as the spearhead of learning at the university level must be good at designing learning scenarios that can stimulate the improvement of student character and skills. One way is to use quality learning methods and based on the students themselves.

Within the address prepare, the most assignment of speakers is to condition the environment to support behavior alter for understudies. The learning handle must be done charmingly but still at a foreordained objective. This of course requires the action and inventiveness of speakers in making a conducive environment. The learning handle is said to be viable if all understudies are effectively involved mentally, physically, and socially. Each lecture process, the most target is how to realize learning objectives well. Therefore, to realize the expecting objective, the address handle must have tall quality, meaning that teachers have to be make the most excellent utilize of learning components.

One of the Key Execution Pointers (IKU) of State Colleges and Higher Instruction Advantage Teach, carried out by the Benefit of Instruction and Culture by Proclaim Number 3/M/2021, is the utilize of case methodology and team-based learning. In it, it emphasizes the significance of collaborative learning and genuine encounter to understudies so that it can be seen to move forward the quality of learning and the significance of information gotten at the higher instruction level

The case strategy includes educating understudies to move forward their basic considering abilities, unravel issues, discover arrangements, and create communication abilities. This learning is additionally valuable for teachers as instructing staff to upgrade their capacities and aptitudes. Concurring to Nursulistyo [8] case-based learning (case procedure) is able to energize understudies to be able to think essentially at distant better;a much better;a higher;a stronger;an improved" an improved level, and prevalent get it learning substance. Usually since understudies must analyze issues, propose arrangements, assess arrangements, unravel issues, and make choices.

According to Liu [6], case solving is one of the learning methods with a case study approach that investigates through cases of marvels that happen so as to investigate the conceivable impacts of learning and educating, as an observational and all encompassing examination. Meanwhile, according to Nursulistyo [8], the *case method* is a student-centered learning strategy that can

provide them with critical thinking, communication, and interpersonal skills. Cases in this case can be presented in various forms, such as completed cases based on facts (for analytical purposes), unfinished open cases (for the purpose of predicting, making suggestions, and conclusions), fictional cases, or original documents (news articles, reports, data sets, ethnography). In its application, lecturers must be able to guide students through the process with meaningful questions and answers at each stage.

Graham & Cline [3] break down the reason of the case strategy into four parts, specifically: (1) loaning reality to roundabout involvement; (2) center on concrete issues; (3) create decision-making abilities; and (4) offer assistance guarantee that understudies see different focuses of see. Not all cases can be used as material in the application of *case methods* in learning. There are a number of characteristics that must be met, including: (1) cases must be gaps, difficulties, constraints or obstacles in aspects of life; (2) relevant to CPL and/or study materials; (3) is a concrete problem that supports the concept of *authentic* and *contextual learning;* and (4) can be solved/found solutions individually/in groups.

The stages of activity in case solving (*case method)* are (1) preparation, including identifying and compiling cases and determining case solving procedures; (2) introduction, including group division, explaining learning objectives and distributing cases per group; (3) core activities, including discussions that include identifying facts, concepts in cases, linking information sharing, factor analysis related to cases, concluding problems, finding alternative solutions to problems and establishing problem solving; (4) closing, including the presentation of problem solving and the conclusion of case study results. problem solving and conclusion of case study results.

The term mixed learning or mixed learning has gotten to be well known in higher instruction since the COVID-19 pandemic. In common, dull learning has three implications, which are: (1) the combination/integration of conventional learning with web-based online approaches; (1) the combination/integration of customary learning with web-based online approaches. (2) the combination of media and contraptions (e.g., perusing fabric) utilized inside the online learning environment and (3) the combination of many educating - learning procedures, in any case of the sort of development Which development is utilized? Blended learning is the combination of two learning situations. There's face-to-face learning in a conventional environment. On the other hand, there's a conveyed learning environment that's beginning to develop and extend exponentially as unused advances expand the possibilities for dispersing communication and interaction. In any case, in general, blended learning could be a combination of online innovation and face – to - face learning that's moderately reasonable but successful in conferring information in a globalized world. Right now, there's no agreement on a single definition of mixed learning. Moreover, the terms blend demonstrate and blend demonstrate are used interchangeably in these most recent investigate distributions. In this think about, the mixed learning strategy is connected by joining face-to-face instructing and learning strategies with online strategies. This can be in line with the definition that states mixed learning is difined as a blend conventional confront to fece instruction and e-learning [5].

Mixed learning isn't online learning that totally replaces face-to-face classroom learning, but it points to supplement and overcome fabric that's not communicated amid the learning prepare when understudies consider in course. Instructors use computer innovation with Web get to supply data, perusing materials, and learning materials to understudies Many instructors allow understudies to associated with each other utilizing strange and synchronous communication

advancement. Nonconcurrent communication is characterized as educating or communication that takes put at assorted times and totally diverse places [1], while synchronous communication is characterized as teaching teaching or communication that happens completely distinctive substances where understudies and teaches are inside the same put at the same time and most likely from various unmistakable zones.

Applying a mixed learning strategy can deliver understudies an intrigued in autonomous learning since they can collect a part of overhauled data through the Internet. This strategy is exceptionally successful since in expansion to permitting understudies to talk about straightforwardly with the educator in course, they can too get to materials given online from anyplace. Mixed Learning is supportive in creating and locks in understudies in instructed courses since understudies must effectively screen the happenings on campus. Changes in behavior arising from lectures are a form of change in understanding behavior, perception, motivation, or a combination of all and the quality of a person's learning is determined by the experiences he gains when interacting with the surrounding environment.

2 Research Method

The stages of inquire about to be carried out are as takes after: (1) select subjects who have the same foundation (homogeneous) through non-random choice; (2) arbitrarily, each subject was relegated to the exploratory bunch or to the control gather; (3) deliver a pretest to get a Y1 score; (4) treat exploratory and control bunches; (5) give a post-test to get a Y2 score in both exploratory and control bunches; (6). Calculates the contrast between the normal pre-test scores. This ponder utilized a quasi-experimental plan with a pre-test-post test control bunch plan. Information was collected utilizing understudy Address Quality tests. The investigate rebellious utilized in this ponder were approval sheets, understudy action perception sheets, understudy reaction surveys and understudy address quality tests. Before conducting treatment by applying the *Case Method* Model, researchers first conduct a *pre-test* about the quality of student lectures. The goal is to see the quality of students' lectures before being given treatment.

3 Result and Discussion

Data collected by researchers through research activities are then synthesized according to the data analysis needs listed in the research plan. This activity aims to describe the overall distribution of research data. This study is an empirical study comparing the quality of subjects taught by students according to the sample case method hereinafter referred to as "group A" with the quality of subjects taught by students according to the following conventional model. This is called “group B”.

The following is presented *pre-test* data on the quality of student lectures in group A.

Table 1. *Pre-Test* Quality of Lectures for Group A Students

Interval	Frequency	Percentage
40-46	1	4%
47-53	2	8%
54-60	12	48%
61-67	5	20%
68-74	3	12%
75-81	2	8%
Sum	25	100%

Based on the table, the student's least score is 40, the most elevated score is 76, and the normal score is 61; middle is 60; and mode is 60; standard deviation 8.30; and a variety of 68. 96. In expansion, the over recurrence dissemination information can be delineated as the taking after histogram.

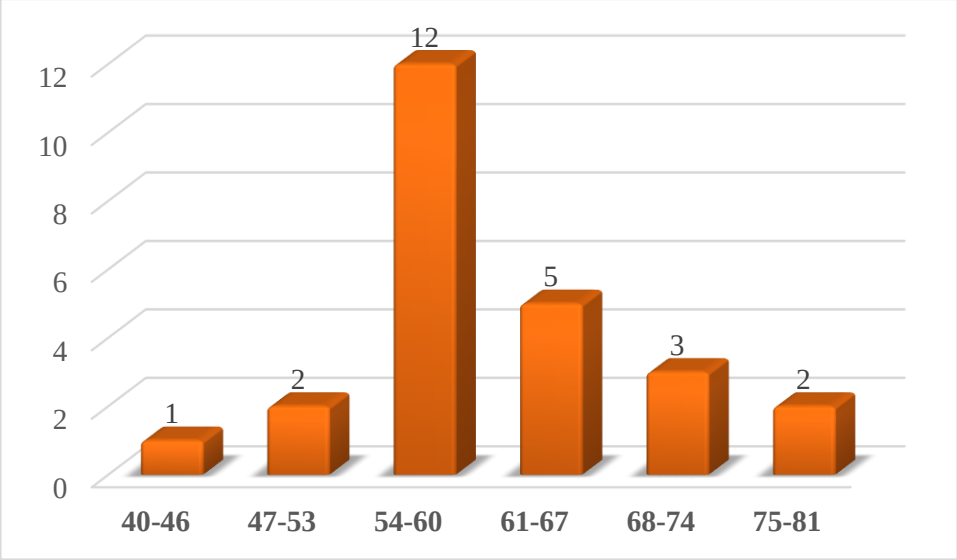

Fig. 1. Histogram *Pre Test* Quality of Group A Students

Based on the figure, it can be seen that the pre-test results of group A have the largest number of frequencies located in the class about 54-60, while the fewest frequencies are in the class about 40-46.

3.1 Pre-Test of Lecture Quality of Group B Students

The same thing is also done for group B students, namely conducting *a pre-test* on the quality of student lectures. The goal is the same, which is to see the quality of students' initial lectures in Mathematics subjects. The following is presented *pre-test* data on the quality of student lectures in group B.

Table 2. *Pre Test* Quality of Class B Student Lectures

Interval	Frequency	Percentage
36-43	1	4%
44-51	2	8%
52-59	9	36%
60-67	7	28%
68-75	4	16%
76-83	2	8%
Sum	25	100%

Based on the table, the student's most reduced score is 36, the most elevated score is 80, and the normal score is 60; middle is 64; and mode is 60; standard deviation is 10.33; and the fluctuation is 106.67. In expansion, the over recurrence conveyance information can be delineated as the taking after histogram.

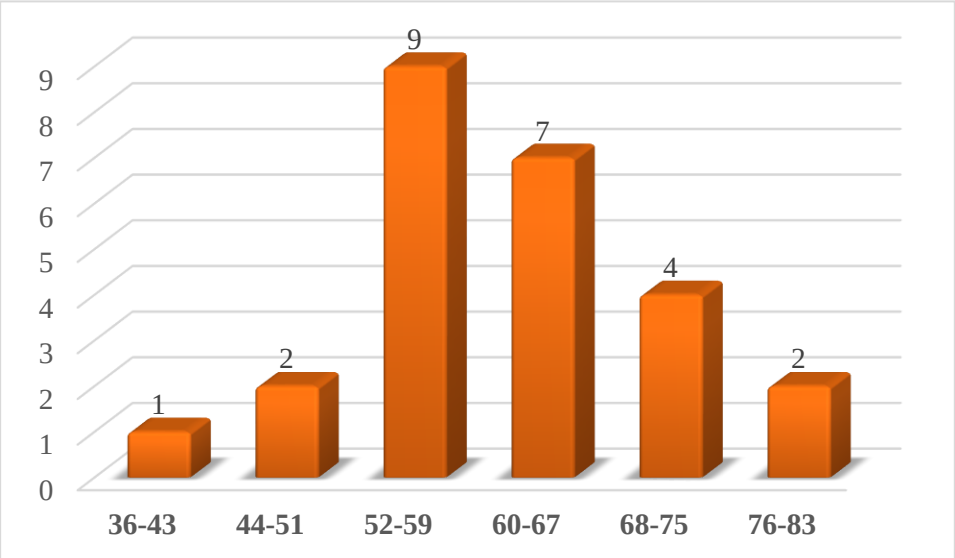

Fig. 2. Histogram *Pre Test* Quality of Group B Students

Based on the image, it can be seen that the quality of the lessons of group B students with the highest learning frequency is in grades 52-59, while the class with the least frequency is in grades 36-43.

3.2 Post-test of Lecture Quality Students Taught with Case Method Model and Team Based Project

Based on the information gotten and the comes about of factual calculations, it is known that in terms of course quality, understudies instructed utilizing the case strategy have the least score of 68 and the most elevated score of 100, with a normal score of 86; The change is 69.49 and the standard deviation is 8.34. The frequency distribution of course quality scores for students taught using the case method model is shown in the following table.

Table 3. Frequency Distribution of Ma Lecture Quality Students Taught with Model Case Method and Team Based Project

Group A		
Interval	**Frequency**	**Percentage (%)**
68-73	3	12%
74-79	3	12%
80-85	2	8%
86-91	11	44%
92-97	4	16%
98-103	2	8%
Sum	**25**	**100%**

From the frequency distribution table of course quality of students taught using the case method model, it shows that 3 out of 25 students have lower course quality than KKM (75), while the other 22 students have scores lower than KKM. The frequency distribution of course quality scores of students taught using the case method model is shown visually in the following graph:

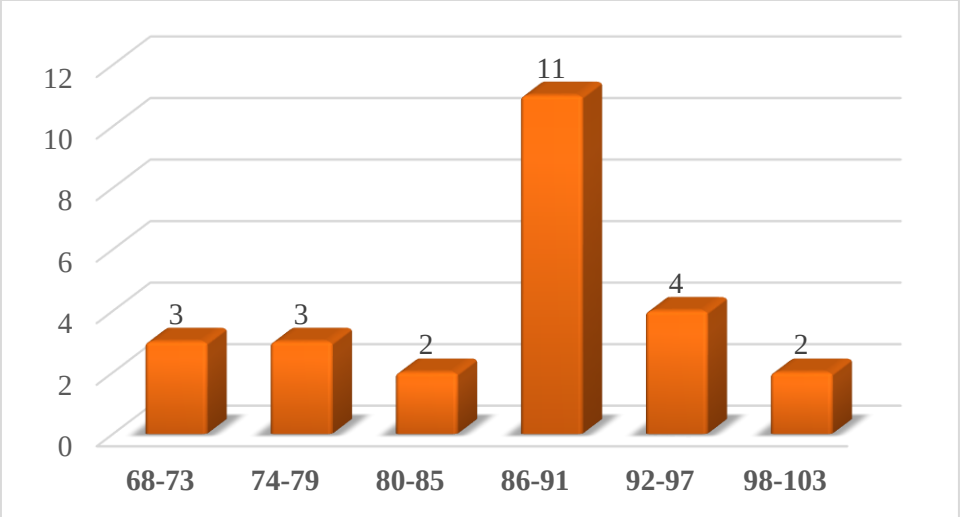

Fig. 3. Histogram of Student Lecture Quality Taught with Case Method Model

Figure 4.5 clearly shows the quality of students' lessons taught using the model case method. The largest number of frequencies is in layers about 86-91, while the smallest number of frequencies is in layers about 80-85 and 98-103.

3.3 Post-test Lecture Quality of Students Taught with Conventional Learning Model

From the information gotten and the comes about of measurable calculations, it is known that the quality of subjects instructed by understudies agreeing to the customary demonstrate accomplished the most reduced score of 68 and the most elevated score of 96, with a normal score of 81; The fluctuation is 54.67 and the standard deviation is 7.39. The recurrence dispersion of quality scores of courses for understudies taking after the customary learning show appeared within the taking after table.

Table 4. Frequency Distribution of Course Quality Students Taught with Learning Model Conventional

Group B		
Interval	Frequency	Percentage (%)
68-72	5	20%
73-77	7	28%
78-82	0	0%
83-87	6	24%
88-92	6	24%
93-97	1	4%
Sum	25	100%

From the table, the frequency distribution of student lecture quality taught with conventional models can be seen that 5 out of 25 students who still have lecture quality below KKM (75), while 20 other students have scores above KKM. The frequency distribution of the Mathematics Lecture Quality score of students taught with the Conventional learning model is visually shown in the form of the following histogram:

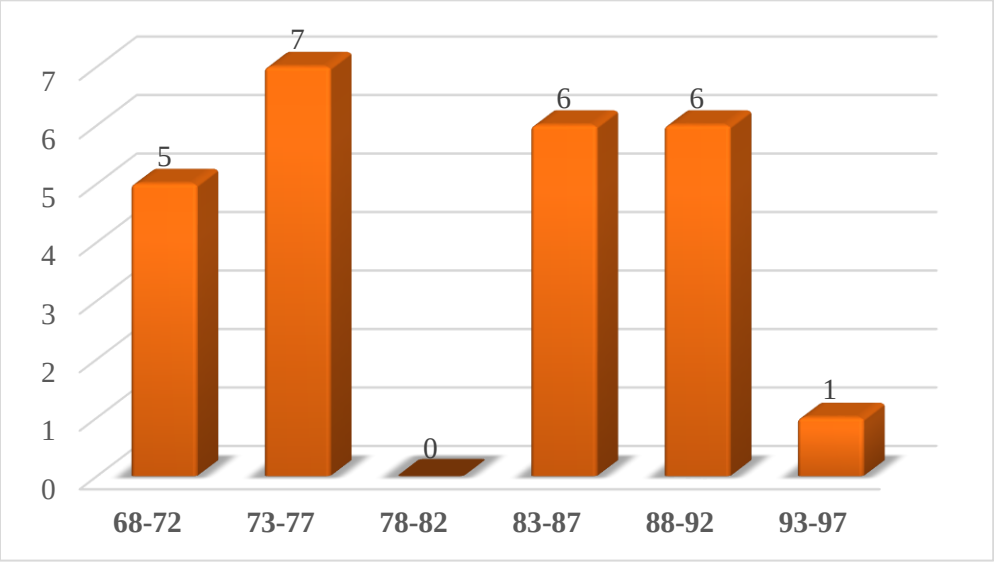

Fig. 4. Histogram of Student Lecture Quality Taught with Conventional Model

Figure 4.6 clearly shows that the quality of lectures Students taught with the conventional model have the highest number of frequencies at interval classes 73-77, while the least number of frequencies is in interval classes 78-82.

Based on the output in Table 4.15 about the Quality of Student Lectures based on the learning model, it is obtained that the value of F is $_{calculated}$ = 7.446 and the probability value or significant value of the learning model is 0.009 < 0.05. So that the results of hypothesis testing are rejecting H $_{o}$ and accepting H_a. With the conclusion that there's a critical distinction between the normal address quality of understudies instructed with the Case Strategy Show compared to customary learning models.

The quality of Mathematics lectures of students taught with the Case *Method* Model is 86,455. While the quality of student lectures taught with conventional learning models is 80,769. This indicates that the average Lecture Quality of students taught with the *Case Method* Model is higher than the average Quality of Mathematics Lectures of students taught with conventional models. In other words, the quality of lectures of students taught with the *Case Method* Model is higher than the conventional model.

The learning model is one of the factors that can affect the quality of student lectures. A learning model is a conceptual framework that describes a systematic process for organizing

learning experiences to achieve specific learning goals and serves as a guide for teachers in designing and perform learning activities. The more appropriate you choose a learning model, the more effective it is in achieving learning objectives. Therefore, it is important for teachers to choose a suitable and appropriate learning model by taking into account learning objectives, student development characteristics, student needs, subject matter, and available learning resources. Currently, the *Case Method* Model for Lecture Quality still uses a direct learning model characterized by learning exercises carried out repetitively by the educator so that the learning prepare is still centered in one course (instructor).

This can be known through learning completeness standards that have not been achieved perfectly (maximum). As one arrangement to move forward the quality of understudy addresses, specifically by employing a learning show that's in understanding with the character of the fabric instructed, specifically the Case Strategy Demonstrate. The application of the Case Strategy Show looks for to make strides the quality of understudy addresses through exercises that make each understudy to unravel a issue who is able to get it the fabric and pass on it to his companions.

This is in line with Afriyana who emphasized that the Case Strategy Show encompasses a positive affect on the progression of learning which is marked by expanding the quality of understudy addresses, conjointly appears that Ha is acknowledged meaning that there's a noteworthy impact within the application of the Case Strategy Demonstrate and Group Based Extend on the quality of learning.

4 Conclusion

Based on the dialog portrayed prior, it can be concluded that there's a noteworthy contrast between the quality of students' science lessons instructed utilizing the case strategy show compared to customary models (Fcount = 7.446 and esteem sig. 0.009 < 0.05).

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