



## Effectiveness of Using Critical Discussion Techniques on Learning Outcomes Regarding Immunization in Diploma III Midwifery Students

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### ABSTRACT

Immunization is one of the preventive efforts that provides immunity against certain diseases. As an educated generation, students play a key role in improving public understanding of immunization. Learning outcomes are influenced by the learning techniques used, and critical debate is a technique that can enhance these outcomes. The aim of this study was to evaluate the effectiveness of critical debate techniques on learning outcomes regarding immunization among DIII Midwifery students. This research used a quantitative approach with a quasi-experimental one-group pretest-posttest design. The sample consisted of 30 DIII Midwifery students selected through purposive sampling. The research instrument was a questionnaire, and data were analyzed using the Paired Samples T-Test. The statistical results showed an increase in the average score of student learning outcomes, from 53.13 before the intervention to 57.43 after applying critical debate techniques. The increase was statistically significant ( $p = 0.004$ ). In conclusion, the application of critical debate techniques was effective in improving learning outcomes regarding immunization in DIII Midwifery students. This study provides a strong scientific foundation for incorporating critical debate techniques as an alternative learning method to enhance student learning outcomes

## **INTRODUCTION**

Immunization is one of the preventive efforts an important government program to be implemented by providing immunity against certain diseases by administering vaccines or toxoids. The vaccine or toxoid contains substances similar to the pathogen that causes the disease, but is harmless (Kemenkes RI, 2022). AIPKIND, as the forefront of midwifery, plays an active role in developing human resources in this field. Through the Diploma III Midwifery Education program, AIPKIND equips students with the skills and knowledge to practice midwifery independently in both healthcare facilities and the community. This program prepares graduates to work professionally, supporting the improvement of maternal and child health quality in Indonesia.

The Diploma III Midwifery study program must meet the standards set by the government. These standards consist of three standards, namely content standards, process standards, and assessment standards. Process standards include learning approaches and methods used in the learning process (Kemenkes RI, 2023). Based on the Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 3 of 2020 concerning National Higher Education Standards Article 11, the learning process in higher education must be student-centered. This means that graduate learning outcomes must be achieved through a learning process that prioritizes the development of creativity, capacity, personality, and student needs, as well as developing independence in seeking and finding knowledge.

The student-centered learning process is expected to produce Diploma III Midwifery education graduates who are competent in midwifery practice, including critical thinking and problem solving. Currently, Diploma III Midwifery Education uses a competency-based curriculum that emphasizes the development of student competencies. These competencies include aspects of attitude, knowledge, and skills. The competencies developed are expected to be felt by students, in the form of mastery and achievement of certain predetermined competency standards. Lecturers act as designers, triggers, facilitators, and motivators of learning for students so that the specified course competencies can be achieved (Junaidi, 2020).

Aslamiah et al. (2022) mentioned that the right learning strategy can help students learn effectively and efficiently, so as to achieve learning objectives. To have an effective learning strategy, lecturers must master presentation techniques, or what is commonly called learning methods. Lecturers must be able to choose learning methods that are appropriate and easily accepted by students. The right learning method can encourage students to be more active in learning and improve their learning outcomes.

Students who are passive in the learning process will make their thinking skills unable to develop (Novianti et al., 2020). The results of Diandra et al. (2020) research, prove that educators need high creativity because the ability of educators to manage student learning affects learning outcomes. Based on the results of preliminary studies through observations of 10 D III Midwifery students at STIKes X Cirebon, it was found that students had difficulty in understanding the material delivered by lecturers using the lecture method. This

is evidenced by the attitude of students who are passive and unable to express their opinions on phenomena in the community about the pros and cons of immunization.

Immunization is an important effort to prevent disease, especially in infants and mothers. Immunization material must be studied by midwifery students to equip them with the knowledge and skills needed to provide immunization. Immunization works by providing immunity against certain diseases. This is done by administering vaccines or toxoids, which contain substances similar to disease-causing pathogens, but are harmless. Students have an important role in efforts to increase public understanding of the importance of immunization. They can be agents of change who can educate the public about the benefits of immunization and how to protect themselves from disease (Kemenkes RI, 2022).

Critical debate is one of the learning techniques that can be used to improve learning outcomes. The essence of the critical debate learning technique is that the lecturer presents a material, then the students join in groups of four or five people to resolve a contradiction given by the lecturer about a lecture material such as the issue of immunization controversy between the pros and cons. This technique encourages students to think critically and analyze information in depth (Shafwan et al., 2023).

Rasyid et al. (2023) explained that critical thinking is the ability to assess information objectively and rationally. Critical thinking skills are very important for students to have, because it can help them to understand information about immunization better and make the right decisions. In-depth information analysis is the ability to understand information as a whole and interpret the information meaningfully. The ability to analyze information in depth is very important for students to have, because it can help them to understand complex concepts in learning materials about immunization.

The application of critical debate techniques in learning about immunization can provide various benefits for students including improving critical thinking skills about immunization, improving the ability to analyze information in depth about immunization, improving communication and argumentation skills about immunization, improving problem solving skills about immunization, and increasing creativity and innovation in educating the public about immunization (Shafwan et al., 2023).

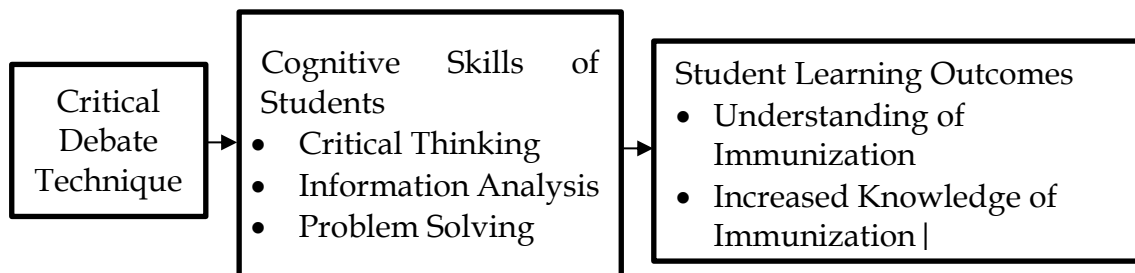
The previous research conducted by Suryaningsih & Mu'minah (2022) showed that the application of the active debate method was proven to be effective in increasing student participation and creative thinking skills, enabling students to argue and express their ideas, with  $p < 0.05$ . Another study conducted by Mashudi & Kholis, (2015) proved that the active debate mode supports the improvement of electrical engineering learning outcomes. The results of another study found that the debate method is an effective teaching strategy for developing critical and argumentative thinking skills, and has the potential to be

Based on this background, the researcher is interested in conducting research with the title “The Effectiveness of the Application of Critical Debate Techniques on Learning Outcomes About Immunization in DIII Midwifery Students”.

## LITERATURE REVIEW

Immunization is a vital health measure to protect individuals, especially infants and mothers, from infectious diseases. Midwifery students play a key role in educating the public about vaccines, and their education includes learning about immunization (Kemenkes RI, 2022). The Diploma III Midwifery program focuses on student-centered learning, developing competencies in attitudes, knowledge, and skills crucial for effective practice (Kemenkes RI, 2023; AIPKIND, 2018). This approach promotes critical thinking and problem-solving, necessary for addressing health issues like immunization (Junaidi, 2020).

Active learning methods, such as debates, engage students and enhance critical thinking. Studies by Aslamiah et al. (2022) and Shafwan et al. (2023) show that debates improve students’ understanding and communication skills, while passive methods like lectures often result in lower learning outcomes (Diandra et al., 2020). This study hypothesizes that the application of critical debate techniques will improve learning outcomes on immunization among DIII Midwifery students.



Picture 1. Conceptual Framework

## METHODOLOGY

This study employs a quantitative approach with a quasi-experimental one-group pretest-posttest design to evaluate the effectiveness of applying critical debate techniques on learning outcomes related to immunization among D III Midwifery students at STIKes X Cirebon. This design was selected because it enables the researcher to observe changes in learning outcomes before and after the intervention without the necessity of an equivalent control group (Notoatmodjo, 2018). Given the constraints in resources, challenges in controlling external variables, and the impracticality of utilizing a randomized control group, this approach is considered appropriate for assessing the impact of critical debate techniques within a single group. However, future studies could consider incorporating a randomized control group to enhance external validity and minimize potential biases.

The study's population consisted of 64 second-semester D III Midwifery students at STIKes X Cirebon. A purposive sampling technique was employed, yielding a sample of 30 respondents. Data analysis was conducted using the Paired Samples T-Test to compare pretest and posttest results and assess the significance of the intervention's impact on immunization learning outcomes.

## RESULTS

### *Learning Outcomes About Immunization Before the Application of Critical Debate Technique*

Table 1. Frequency Distribution of Learning Outcomes Before Critical Debate

Learning Outcomes (Pretest)	F	%
Good	5	16,7
Fair	13	43,3
Less	12	40,0
Total	30	100

Based on Table 1, it can be seen that the learning outcomes about immunization before the application of the critical debate technique obtained through the pretest were mostly sufficient, namely 13 respondents (43.3%).

### *Learning Outcomes About Immunization After the Application of Critical Debate Techniques*

Table 2. Frequency Distribution of Learning Outcomes After Critical Debate Technique

Learning Outcomes (Posttest)	F	%
Good	11	36,7
Fair	10	33,3
Less	9	30,0
Total	30	100

Based on Table 2, it can be seen that the learning outcomes about immunization after the application of critical debate techniques obtained through pretest are mostly good, namely 11 respondents (36.7%).

### ***Average Improvement in Learning Outcomes After the Application of Critical Debate Technique***

Table 3. Average Improvement Learning Outcomes

Learning Outcomes (Posttest)	F	%
Good	11	36,7
Fair	10	33,3
Less	9	30,0
Total	30	100

Based on Table 3, it shows that the results of statistical tests using the Paired Samples T-Test test have significantly improved learning outcomes about immunization with a p value of  $0.004 < 0.05$ , which means there is a difference, it is known from the average learning outcomes about immunization before the application of critical debate techniques is 53.1 and after the application of critical debate techniques increased to 57.4. This shows that the application of critical debate techniques is effective on learning outcomes about immunization in DIII Midwifery STIKes X Cirebon students.

## **DISCUSSION**

### ***Learning Outcomes About Immunization Before the Application of Critical Debate Techniques***

The learning outcomes of DIII Midwifery students about immunization before the application of critical debate techniques are still in the sufficient category. Based on the findings of the research that has been carried out, the learning process uses the lecture method, most students are less active in the learning process which has an impact on students quickly getting bored and not excited about learning. The lecture method causes students to only pay attention and understand what is conveyed by the lecturer, without the opportunity to express opinions and discuss.

According to Sukirman & Solikin (2020), the lecture learning method can be said to be a lecturer-centered learning method. In this method, the lecturer acts as the only source of information and provider of learning materials. Students only act as recipients of information. This causes students to be passive in the learning process.

One proof that the lecture learning method makes students passive is when the lecturer throws questions. Only a small number of students dared to ask questions or express opinions. Most students choose to remain silent. This is because students feel afraid of being wrong or not knowing the answer. To prove whether students understand the learning material or not, lecturers usually provide exercises. However, the results of the exercise show that there are still many students who score below 50. This shows that students still do not fully understand the learning material.

The lecture learning method has several weaknesses, namely making students passive in the learning process, not providing opportunities for students to express opinions and discuss, it is difficult to know whether students understand the learning material or not (Magribi, 2023).

Therefore, the lecture learning method should be balanced with other more active learning methods, such as discussion methods, problem-based learning methods, or project-based learning methods. These learning methods can encourage students to be more active in the learning process and improve their understanding of learning materials (Hasbullah et al., 2023).

Students often find it difficult to understand lecture or lecture material. This is caused by several factors, including student dependence on broadcast materials. Students feel that it is enough to record the material in the broadcast material, so there is no need to understand the material in more depth. In addition, there is a lack of motivation to listen. Students feel that they do not need to listen to the material carefully, because the broadcast material can be obtained from the lecturer. As a result of this habit, students become passive. They only rely on the material provided by the lecturer, without trying to understand the material independently. Students are also less able to think critically. They are not trained to analyze and evaluate the material studied (Rahim, 2020).

According to Anas, (2021), the pattern of active lecturer learning process with passive students has low effectiveness and cannot foster the process of active participation in learning. This is because students do not have the motivation to actively participate in learning. They have no expectation to benefit from their participation.

Students also do not have the ability to follow the learning process actively so they do not have the critical thinking and problem solving skills needed to actively participate. In addition, students do not have the opportunity to apply the learning material in the real world. They do not have the opportunity to apply the knowledge and skills they learn in their daily lives. As a result of these factors, students are only active in learning when they are approaching exams. They only collect material for exams without understanding the material deeply. As a result, the quality of the material and learning process is difficult to assess. Lecturers become the center of the role in achieving learning outcomes and seem to be the only source of knowledge (Anas, 2021)

#### ***Learning Outcomes About Immunization After the Application of Critical Debate Techniques***

Learning outcomes of DIII Midwifery students about immunization after the application of critical debate techniques in the good category. Critical debate learning techniques include collaborative discussion learning techniques where there is an exchange of information, ideas, and opinions in open and provocative discussions. A good give and take discussion can produce an incomparable learning experience as students articulate their ideas, respond to the thoughts of their classmates, and build skills in evaluating their own evidence and the positions of others.

Shafwan et al. (2023) explained that the critical debate technique can activate the whole class because students are divided into two groups of pros and cons, and each group member is asked to prepare arguments to defend and defend the group's opinion.

### ***Improved Learning Outcomes About Immunization After the Application of Critical Debate Technique***

The results of statistical tests show that there is a significant difference in learning outcomes about immunization before and after treatment in the form of applying critical debate techniques with a p value of  $0.004 < 0.05$  so that it can be said that the application of critical debate techniques has proven effective on learning outcomes about immunization in DIII Midwifery students with the average value of learning outcomes about immunization in DIII Midwifery students showing before treatment 53.1 and after treatment 57.4 with an average difference in the increase in learning outcomes about immunization 3.7 can be stated that there is an increase in learning outcomes about immunization after treatment.

The results of this study are in line with the research of Wijayanto et al. (2017) showed that the application of active debate method in geography learning showed a significant increase in student activeness. The percentage of student activeness at the first meeting was 81.6% (good category) increasing to 91% (very good category) at the second meeting, with an average increase of 9.4%. This increase was due to the increasing percentage in several aspects, including attendance, seriousness in participating in learning activities, individual participation in groups, discussions and debates in class, as well as seriousness and timeliness in submitting assignments. In the third meeting, the percentage of student activeness decreased to 86.8%, but was still in the very good category. This decrease was caused by a decrease in the percentage in several aspects, including attendance, seriousness in participating in learning activities, individual participation in groups, discussions and debates in class, as well as seriousness and timeliness in collecting assignments. Based on the average percentage of all meetings, the result was 86.4%. This value indicates that the effectiveness of the application of active debate method in geography learning is very good.

Wibowo, (2015) learning outcomes are changes that occur in learners after participating in learning. These changes can be in the form of mastery of knowledge, skills, or attitudes. Learning outcomes are very important to determine the extent of student success in following learning. Learning outcomes can be known through evaluation, which is the process of measuring and assessing student learning outcomes.

Learning outcomes are influenced by internal and external factors. Internal factors include the physical, psychological, and social conditions of students. Good physical condition, high intellectual ability, stable emotions, and good socialization skills will support student readiness, process, and learning outcomes. External factors include material difficulty, place of study, climate, environmental atmosphere, and community learning culture. These factors will also affect students' readiness, learning process and outcomes (Nurhayati & Nasution, 2022).

The immunization material debated in this study is the pros and cons of immunization. Supporters believe that immunization is a powerful shield to prevent infectious diseases, while the other side voices the potential side effects. Immunization is one of the most effective ways to prevent a disease. Immunization works by stimulating the immune system to produce antibodies against certain diseases. These antibodies will protect the body from infection with the disease if exposed to it in the future (Kemenkes RI, 2023). The purpose of immunization is to prevent the occurrence of disease, reduce the severity of disease, and prevent the spread of disease. The national immunization program aims to protect the entire community from immunization-preventable diseases, such as dysentery, tetanus, pertussis, measles, polio, and tuberculosis (Satiti et al., 2023).

Immunization advocates argue that even healthy-looking babies can still be infected with dangerous diseases. Therefore, bringing babies to the posyandu or other health services to get basic immunizations on schedule is a form of love and responsibility to protect the baby (Maiyanisa & Putri, 2023). Early in life, infants are highly susceptible to dangerous diseases, such as acute gastrointestinal diseases, polio, liver damage, tetanus, and measles. Children affected by these diseases have a high risk of death. If not dead, the attack of the disease virus can cause prolonged physical and mental suffering, even disability (Sofiawaty et al., 2023).

The benefits of immunization are not only felt by the child, but also the family and the country. For children, immunization can prevent physical and mental suffering caused by disease, and prevent disability or death. Immunization can also improve a child's quality of life by reducing the risk of disease complications. For families, immunization can reduce anxiety and the burden of medical expenses. Immunization can also encourage family formation as parents feel confident that their child will have a healthy and happy childhood. For the country, immunization can improve the level of public health and the quality of human resources. Immunization can also reduce the burden of health costs and increase community productivity (Maiyanisa & Putri, 2023).

The argument for those who are pro-immunization is that immunization is an effective way to prevent diseases, especially infectious diseases. Immunization is also important to prevent outbreaks. Although there is a risk of side effects, immunization side effects are generally mild and treatable. Negative issues about immunization circulating in the community are often unclear and not supported by scientific evidence. Developed countries continue to immunize, although there is freedom of choice to immunize or not. Immunization has also been declared halal and allowed by MUI (Wahyuni & Hadi, 2022).

The argument for those who oppose immunization is that immunization is considered haram, dangerous, unnecessary, and a conspiracy of western countries. Immunization is also considered a big business and eliminates traditional methods of treatment and prevention. There are also reports that non-immunized children are healthier than immunized children. Many scientists have also researched and concluded that immunization has a harmful impact on health (Pitriani et al., 2023). The critical debate technique cooperative learning

model is a learning model that involves working together in small groups to solve problems. This learning model can help students improve positive attitudes towards immunization and build confidence in solving immunization problems (Shafwan et al., 2023).

Cooperative learning of critical debate technique can also encourage students to participate more actively in learning and expressing ideas. This provides an opportunity for students to utilize immunization knowledge and skills comprehensively (Shafwan et al., 2023). When students conduct critical debate discussions about immunization, they will be encouraged to think more critically and creatively. This can increase the intelligence and psychomotor of immunization in students so that students will more easily achieve good learning outcomes.

## **CONCLUSIONS AND RECOMMENDATIONS**

The application of critical debate techniques is effective on learning outcomes about immunization in DIII Midwifery students. It is hoped that this study can provide a deeper understanding of the effectiveness of the application of critical debate techniques on learning outcomes about immunization in DIII Midwifery students. The results of this study can be the basis for the development of the learning process with the Critical Debate Technique as an alternative to improve the effectiveness of immunization learning outcomes in particular and other midwifery materials in general.

## **FURTHER STUDY**

The limitations of this study include the short duration of the critical debate intervention, which may not be sufficient to observe long-term effects, as well as the absence of a control group, limiting the ability to attribute changes in learning outcomes solely to the intervention. The small sample size and the use of purposive sampling also restrict the generalizability of the findings. Variations in student participation in the debates could have influenced the results. Future research is recommended to involve a larger sample, a control group, a longer intervention duration, and more randomized participant selection.

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