Development of the Case-Based Learning Model in Improving the Critical Thinking Skills of Citizenship Course Students

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Keywords: Critical Thinking Skills, Citizenship.

Abstract: This study aims to see how the development of a Case-Based Learning (CBL) model in PKn courses shows that the critical thinking skills of medical informatics students are still low, because civic learning that should emphasize the active involvement of students by presenting the real world has not been carried out optimally. An effort to overcome this problem was developed by developing a CBL model in civic learning. This study uses a plomp development design consisting of preliminary research, prototyping phase, assessment phase. The preliminary research stage was carried out to analyze the characteristics of the civic learning model, curriculum analysis, analysis of student characteristics, and analysis of learning materials. The results of the preliminary research stage on the analyzis of the characteristics of the civic. The results assessment phase research in the validity test were obtained with the average percentage of each aspect in the model book, lecturer's book, and student book respectively at (86,55); (90,69); and (89,04) with very valid criteria. The results of the analyzis of the model practicality test based on the observation of learning implementation were obtained on average 87,51, the model practicality questionnaire according to lecturers 87, 65, and the practicality questionnaire according to students 81,35 with very practical criteria. Furthermore, the results of the effectiveness test through descriptive analysis, are effective in improving students' critical thinking, knowledge aspects, and motivation.

1 INTRODUCTION

The importance of thinking skills for students is one of the abilities that must be had by understudies within the 21st century in obtaining information and data (Komalasari, 2019). Because if students do not have critical thinking skills, it causes them to be unable to explore the knowledge that exists in them. As the results of research conducted by (Abdulah et al., 2023) Stated that students' critical thinking skills are skills that should be possessed by students by thinking critically, students are able to convey their ideas and ideas and are able to utilize existing technology more wisely, students can acquire knowledge and skills. As well as gaining knowledge from various sources available on the Internet (Lautrup et al., 2019; Thornhill-Miller et al., 2023).

Several previous studies have shown that the CBL model is able to improve students' critical thinking, as was done (Ernawati et al., 2022; Heliawati et al., 2022; Kibe et al., 2022). The researcher identified that the elements that form the CBL model are able to improve students' skills in analyzing cases, and findings that can improve students' critical thinking. Critical thinking encourage students to collaborate in discussions in analyzing cases, scientifically and innovatively. In line with the research conducted by (Arisoy & Aybek, 2021) stated lecturers are expectation to be able to create learning that builds students' creativity which will later be able to

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Abdulah, , Atmazaki, and Khaidir, A.
Development of the Case-Based Learning Model in Improving the Critical Thinking Skills of Citizenship Course Students.
DOI: 10.5220/0013407900004654

In *Proceedings of the 4th International Conference on Humanities Education, Law, and Social Science (ICHELS 2024)*, pages 574-579
ISBN: 978-989-758-752-8

understand the learning material independently through cases in each class meeting.

Results of observations in medical informatics study program of the Faculty of Medicine, Universitas Muhammadiyah Muara Bungo found that the percentage of students still has low critical thinking skills, showing that more than 50% of students said that they do not have critical thinking skills. This is certainly not a good impact on learning where students must be able to think critically. As conveyed by (Koehler et al., 2020; Syaifullah et al., 2021) It generally occurs in today's world, where critical thinking skills, analyzing cases in depth, to gain new knowledge and continue to develop self-competence are needed by students in learning. The application of case-based learning is one of the effective learning models in developing students' critical thinking skills. This is because this model can provide opportunities for students to play an active role in learning, analyzing problems, and developing effective solutions. Students can practice expressing their ideas clearly, actively listening to others, and providing useful criticism to their peers through group discussions and presentations (Kirpalani et al., 2020). In addition to improving the educational process, this cooperative model prepares students for real-world scenarios where communication and teamwork are essential (Acharya et al., 2023; Khaidir et al., 2024). And CBL allows students to establish effective communication (Kanehara et al., 2020). Furthermore, case-based learning provides students with the opportunity to investigate many different points of view, resulting in a more comprehensive understanding of the subject (Walker, 2020).

The urgency of students' critical thinking skills in citizenship education courses in order to create students who are capable of analyzing citizenship issues. This course also wants students to have a love for the Indonesian nation and have a national spirit in accordance with the goals of citizenship education in higher education (Abdulah et al., 2023). The application of the CBL model to Civics learning encourages students to think more critically, this model has a good impact on Civics learning.

This study aims to prove that the CBL model is effective in improving critical thinking skills of students aged 18-22 years. Knowing students' critical thinking skills is done by looking at student development, by conducting daily assessments at the time of study. The implementation of CBL learning can be seen from the level of achievement of critical thinking skills of medical informatics students. On this basis, it is necessary to apply the CBL model at the University of Muhammadiyah Muara Bungo in group learning activities. There is also a question in this study is how to design a CBL model to improve students' critical thinking skills.

2 METHOD

2.1 Research Design

The type of research conducted is Research & Development (R&D) with the aim of producing products through certain stages. This research was conducted to develop a product in the form of a CBL model book that aims to improve students' activities and critical thinking skills. This model book is used as a support for civic learning. The development model used in this study is a model adjustment. This model consists of three stages, namely, preliminary research (needs analysis, student analysis, curriculum analysis, concept analysis, learning goal formulation analysis), prototyping stage (product design and validation), assessment stage (product trial to determine product value), practicality and effectiveness) (Ramadhan et al., 2021). This research produces a learning model book based on the syntax of the model that is renovated in advance according to the needs and students and learning situations. This product was developed based on the OBE curriculum.

2.2 Sample

The sampling technique uses Slovin with a significance of 5% with a total population of 106 students from four study programs. In accordance with the research implementation permit from the Dean No. 111/II.3.AU/III.2/2024, this research has been carried out well. According to the 2016 CIOMS Guidelines, research is considered ethically acceptable in accordance with the following seven WHO standards, including: i) social values; ii) scientific values; iii) fair assessment and benefits; iv) risks; v) persuasion/exploitation; vi) confidentiality and privacy; and vii) informed consent. This is shown by the fulfillment of the indicators of each standard. The research participant has given permission for his or her data to be used to publish the research article. The number of samples with the purposive technique from Slovin formula produced a total of 22 samples: Faculty of Teacher Training and Education. The following are the details of the sample of the four study programs in data collection described in Table 1.

Table 1. Sample.

Department	Respondent
Primary teacher education	38
English language education	24
Healthy physical and recreation	22
Medical informatics	22

Source: Dean of FKIP

3 RESULT AND DISCUSSION

3.1 Result

3.1.1 Descriptive Analysis

The results of the measurement of critical thinking skills will provide an overview of benchmarking and categorization of the level of critical thinking skills of each respondent. The categorization was carried out by calculating the distance at the standard deviation from the data used, which was with a standard deviation of 3.81. The results of the descriptive analysis for categorization showed that students with "low" critical thinking skills were 27 or 14%, while with the category of "moderate" critical thinking skills of 81 or 40%, and the category of "high" critical thinking skills of 92 or 46%. It can be concluded that the categorization of students' critical thinking skills has been included in the "moderate" criterion with a total average of 46,08. From these data, the application of the CBL model makes a good contribution in improving the critical thinking of medical informatics students,It can be concluded that the ability of students to think critically supports the learning process to optimize the process at UMMUBA.

3.1.2 CBL Model Design

Development of case-based learning model design. Based on the results of the needs analysis, an innovative and interactive learning model is needed that suits the needs and situations of students. This learning model can be used as an alternative that can be used in civic learning. The learning model is developed using a learning model that contains learning materials. The CBL learning model is developed by applying the case method and the use of the CBL model to support the learning process (Procentese et al., 2019). The model is in the form of learning materials made using cases related to citizenship issues. The learning process directly uses cases for the interaction process between lecturers and students and students. Here's the design according to (Sterman et al., 2019). The CBL model can be seen in Figure 1.

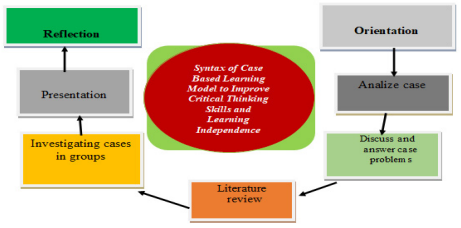

Figure 1: CBL Model Design.

Based on the figure above, the design of the case-based learning model shows the steps: the first is orientation in learning carried out by lecturers, the second is case analysis by students, the third students are divided into several groups to discuss and find answers to problems, the fourth is looking for literature reviews, the fifth is conducting group investigations, the sixth is presenting the results of group discussions in front of the class and the seventh lecturer and students are reflecting on the the results of the discussion that has been carried out by students. With this syntax, students can carry out discussions because the CBL steps make students independent in analyzing cases.

3.1.3 Practicality of Learning Models

After the preliminary research stage and the prototyping phase are completed, the product is validated first. Based on the validation results, it was found that the learning model was valid and the lecturer's response was positive with the model. After that, an assessment stage is carried out to test the developed learning model. The assessment stage is carried out to determine the practicality and effectiveness of the learning model when used during learning. To find out the practicality of the learning model, lecturers assess learning activities by filling out a questionnaire that has been given by the researcher. The questionnaire is filled out after the learning process is complete. The practicality questionnaire contains statement items developed based on the practicality indicators of the learning model. The practicality of the learning model was assessed by four lecturers. The results of the analysis based on the questionnaire on the practicality of the learning model by lecturers can be seen in Table 2.

Table 2: Practicality of Learning Models by Lectures.

Assessment aspects	Practicality (%)	Criteria
Ease of following a case-based learning model to improve critical thinking skills and learning independence in civic learning	84,72	Very Practical
Benefits of a case-based learning model to improve critical thinking skills in civic learning	86,46	Very Practical
Use of student books in learning	83,33	Very Practical
The role of lecturers in learning	87,50	Very Practical
Average	85,50	Very Practical

The results of the table above show that the CBL model is easy to use in learning so that there is an increase in critical thinking with a percentage of 84.72 very good criteria, the CBL model is useful for improving critical thinking with a percentage of 86.46 very good criteria, as well as the CBL model book is also used by students with a percentage of 83.33 very good criteria, the role of lecturers in Pkn learning is good with a percentage of 87.50 with very good criteria, so that the overall result of the CBL model pragmatism percentage is 85.50. The practicality of the learning model by students is collected after the civic learning activities using the case-based learning model are completed. Practicality data collection is carried out through filling out questionnaires by students. Through filling out questionnaires, students provide their assessments and opinions about the learning models that have been used in the learning process. The practicality of the learning model assessed by students includes aspects of comfort and practicality of time. This practicality questionnaire was filled out by 22 students. After students fill out the questionnaire, a recapitulation and calculation are carried out to find out the practical value. Furthermore, an analysis was carried out based on the items of the statement, and an overall analysis was carried out. The results of this analysis can be seen in Table 3.

The results of the table above show that the CBL model is easy to use in learning so that there is an increase in critical thinking with a percentage of 85.19 very good criteria, the CBL model is useful for improving critical thinking with a percentage of 85.7 very good criteria, as well as the CBL model book is also used by students with a percentage of 81.79 very good criteria, the role of student in Pkn learning is good with a percentage of 82.29 with very good criteria, so that the overall result of the CBL model pragmatism percentage is 83.58. For this practical value, in addition to filling out questionnaires by lecturers and students, observations are also made on learning activities carried out by lecturers and assisted by researchers. Student learning activities are obtained through observation using observation sheets of student learning activities. The observation sheet consists of statement items related to student learning activities using the stages of the learning model developed using the learning model, namely the case-based learning model. Data on student activities are collected by lecturers as the first observer, and researchers as the second observer. This observation aims to see the suitability of activities that are expected to appear in students who study citizenship. Application of the syntax of the case-based learning model, Utilization of the support system of the case-based learning model, Student Involvement in Learning, Achievement of instructional and companion impacts through the case-based learning model, Closing Activities. After the data is obtained, the analysis is carried out based on the results of the observations made. The results of the observation of the learning process using the developed learning model can be seen in Table 4.

Table 3: Practicality of Learning Models by Students.

Assessment aspects	Practicality (%)	Criteria
Ease of following a case-based learning model to improve critical thinking skills and learning independence in civic learning	85,19	Very Practical
Benefits of a case-based learning model to improve critical thinking skills in civic learning	85,07	Very Practical
Use of student books in learning	81,79	Very Practical
The role of students in learning	82,29	Very Practical
Average	83,58	Very Practical

Table 4. Student Learning Activities.

Assessment	Average result	Criteria
Aperception and Motivation	83.33	Very Practical
Competency delivery, activity plans and assessments	90.10	Very Practical
Application of the reaction principle of the CBL model	87.50	Very Practical
Application of CBL model syntax	89.58	Very Practical
Utilization of the support system for the CBL model	87.50	Very Practical
Student involvement in learning	89.58	Very Practical
Achievement of instructional and companion impact through a CBL model	95.83	Very Practical
Closing activities	91.67	Very Practical
Average	89.38	Very Practical

The results of table 4 explain that Aperception and Motivation got a percentage of 83.33 very good criteria, Competency delivery, activity plans and assessments got a percentage of 90.10 with very good criteria, Application of the reaction principle of the CBL model with a percentage of 87.50 very good criteria, Application of the reaction principle of the CBL model got a percentage of 89.58 with very good criteria, Application of the reaction principle of the CBL model with a percentage of 87.50 very good criteria, Student involvement in learning with a percentage of 89.58 very good criteria, Achievement of instructional and companion impact through a CBL model with a percentage of 95.83 very good criteria, Closing activities with a percentage of 91.67 very good criteria. The overall result was 89.38 with very good criteria.it is concluded that the learning model developed is practically used to improve student learning activities

3.2 Discussion

Based on the results of the research conducted, it was found that a practical CBL model is used in civic learning to improve critical thinking skills. It can be seen that students are active in the learning. The use of case-based learning models has been widely used in the learning process based on previous research such as those conducted by (Chen et al., 2022), There are also cases that are used with the CBL model, such as national integration material where students conduct discussions related to national integration topics, for example about the Aceh Independence movement, students are asked to analyze the substance of the problem in the case, what students think about the case and how to solution so that this case does not happen again. Furthermore, research conducted by (Sari et al., 2021). Stating that through a case-based and student-engaging learning model, encouraging students to think critically through mental activities, therefore the use of case-based learning can support students to develop their ability to respond to the information received by considering all aspects related to the information. Furthermore, the research conducted (Roza et al., 2022) The CBL model in the Service Marketing course using the case method can improve students' critical thinking, this condition is very necessary in the current uncertain conditions.

4 CONCLUSIONS

The development of a CBL model to improve the critical thinking of students of the University of Muhammadiyah Muara Bungo, effective in stimulating critical thinking skills, is evidenced by the average difference in the practicality of the model. The implementation of the assessment is carried out through observation activities when students carry out the learning process, assessment of observations from the results of activities when analyzing cases, and assessment with a checklist. From the results of the evaluation, it can be seen that the standard level of achievement of critical thinking skills can develop

as expected so that an average of 89% of all aspects of assessment after using CBL to improve critical thinking. Application of the CBL can create active group learning so that it can improve students' critical thinking. Case activities carried out by students develop student potential and creativity as well as conceptual understanding can be realized through problem solving along with case activities within a specified period of time. Cases related to PKn material such as national integration, the constitution and rights and obligations become easier for students to understand Case-based learning carried out by students in group activities can increase learning independence and be responsible for the tasks given, so that students develop and are stimulated optimally.

ACKNOWLEDGEMENTS

Thank you to the promoter and co-promoter who have guided very well in completing this article, and also thank you to LPPM UNP and the Ministry of Education and Culture, Research, Technology and Higher Education in completing the dissertation.

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