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Pedagogical Content Knowledge (PCK) Analysis for Teachers: A Case Study of Pancasila and Citizenship Education (PPKn) Teachers on Bhinneka Tunggal Ika Material

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ABSTRACT

Pancasila and citizenship education (PPKn) plays an important role in cultivating the values of Bhinneka Tunggal Ika in students. The PPKn teacher's ability to convey this material is very important. This research aims to analyze the pedagogical content knowledge (PCK) of PPKn teachers at SMA Negeri 5 Metro on Bhinneka Tunggal Ika material. This research uses a qualitative method with a case study of two class XII PPKn teachers. Data was collected through learning observations, interviews, and documentation studies. Data analysis was carried out using the Miles and Huberman technique. The research results showed that the first teacher showed PCK with good criteria in all components (teaching knowledge, student knowledge, and content knowledge). The second teacher showed PCK with fairly good criteria in all components. In general, both teachers have quite good PCK in teaching Bhinneka Tunggal Ika material. The first teacher showed better PCK than the second teacher.

1. Introduction

Pedagogical content knowledge (PCK) is the essential knowledge that teachers have to teach effectively. PCK combines a deep understanding of subject matter content with pedagogical knowledge of how to teach effectively. Teachers with strong PCK are able to translate material content into meaningful learning experiences for students. PCK plays an important role in the teaching and learning process. Teachers with good PCK are able to choose and use appropriate learning strategies to achieve learning goals, adapt learning materials to student needs and characteristics, explain complex concepts in a way

that is easy for students to understand, build student enthusiasm and motivation to learn, and create a learning environment. conducive and effective (Magnusson; 1991; Mishra, 2006; Shulman, 1986).

The Bhinneka Tunggal Ika material in Pancasila and Citizenship Education (PPKn) has an important role in fostering a sense of nationalism and national unity amidst diversity. PPKn teachers with good PCK regarding this material are able to explain the concept of Bhinneka Tunggal Ika clearly and easily understood by students, foster a sense of tolerance and appreciation for differences among students, build students' character with a national perspective and



love of the country and prepare students to become citizens. an active and responsible country (Beisel, 2000; Gess-Newsome, 1999; Sutopo, 2018). This research aims to analyze the pedagogical content knowledge (PCK) of case study PPKn teachers at SMA Negeri 5 Metro on the Bhinneka Tunggal Ika material.

2. Literature Review

Definition of PCK

Pedagogical content knowledge (PCK) is the knowledge that teachers have about how to teach subject matter by considering the characteristics of the material and students. PCK was first introduced by Lee Shulman in 1986. Shulman defined PCK as "a combination of content and pedagogy into an understanding of a particular topic, problem, or issue that is organized, represented, and adapted to the diverse interests and abilities of learners presented for learning."

PCK components

In 1986, Lee Shulman introduced the concept of pedagogical content knowledge (PCK) as essential knowledge for teachers to teach effectively. PCK is a combination of content and pedagogy that integrates an understanding of certain topics, problems, or issues that are organized, represented and adapted to the various interests and abilities of students presented for learning. Shulman stated that PCK consists of three main components: 1. Knowledge of content: in-depth knowledge of the subject matter to be taught. Teachers must have a deep understanding of the key concepts in the subject matter to be taught. Teachers must understand how these key concepts are interrelated and how they form the structure of the discipline. Teachers must understand the way experts in that discipline think. 2. Pedagogical knowledge: knowledge about effective learning strategies and methods. Teachers must be able to design learning that is appropriate to the learning objectives, characteristics of the subject matter, and students'

learning needs. Teachers must be able to choose and use appropriate learning media to help students learn. Teachers must be able to assess student learning outcomes objectively and fairly. 3. Knowledge of students: knowledge about students' characteristics and learning needs. Teachers must understand the level of physical, cognitive, emotional, and social development of students. Teachers must understand students' learning styles, such as visual, auditory, or kinesthetic. Teachers must understand students' cultural backgrounds and how this can influence their learning process (Gess-Newsome, 1999; Hashweh, 2005; Voogt, 2013).

Model PCK

Pedagogical content knowledge (PCK) is the knowledge that teachers have about how to teach subject matter by considering the characteristics of the material and students. Since its introduction by Lee Shulman in 1986, the PCK concept has developed and given rise to various models that attempt to explain the complexity of this knowledge.

Shulman model (1986)

The Shulman model is a classic PCK model that describes PCK as a combination of three main components: 1. Knowledge of content: in-depth knowledge of the subject matter to be taught. This includes knowledge of key concepts, the structure of the discipline, and ways of thinking within the discipline. 2. Pedagogical knowledge: knowledge about effective learning strategies and methods. This includes knowledge about how to design learning, select and use learning media, and assess learning outcomes. 3. Knowledge of students (knowledge of students): knowledge about students' characteristics and learning needs. This includes knowledge of students' developmental levels, learning styles, and their cultural backgrounds. Shulman's model emphasizes that PCK is not just a combination of these three components but is the interaction and



transformation of these three components. Teachers with good PCK are able to combine these three components to teach effectively and produce meaningful learning for students.

Mishra and Koehler model (2006)

Mishra and Koehler's model adds two components to Shulman's model, namely: 1. Knowledge of technology: knowledge about how to use technology to support learning. This includes knowledge of different types of educational technology, how to use technology for teaching and learning, and how to integrate technology into learning. 2. Knowledge of context: knowledge about the context in which learning takes place. This includes knowledge of school culture, community, and society, as well as other factors that may influence learning. Mishra and Koehler's model reflects the rapid development of technology and its impact on learning. This model shows that teachers with good PCK need to have knowledge of technology and context to teach effectively in the digital era.

Magnusson et al. model (1999)

Magnusson, et al.'s model, describes PCK as a continuous cycle where teachers continue to learn and develop their PCK through teaching experiences. This cycle consists of four stages: 1. Knowledge: this stage involves acquiring knowledge about content, pedagogy, students, technology, and context. 2. Understanding: this stage involves understanding how this knowledge can be applied in teaching practice. 3. Application: this stage involves applying knowledge and understanding in teaching practice. 4. Reflection: this stage involves reflecting on teaching practice to identify what is working and what is not and to then make changes and improvements. The model of Magnusson et al. shows that PCK is not static knowledge but is knowledge that is dynamic and continues to develop. Teachers with good PCK need to continue learning and reflecting to develop their knowledge and skills in teaching.

3. Methods

This research uses a qualitative approach with a case study of two class XII PPKn teachers. A qualitative approach was chosen because this research aims to understand in depth the PCK of PPKn teachers in teaching Bhinneka Tunggal Ika material. Research data was collected through three techniques, namely: 1. Learning observations: Learning observations are carried out to observe how teachers apply PCK in teaching practice. Observations were carried out using the Danielson observation sheet, which consists of 3 PCK components: Teaching Knowledge includes the teacher's ability to explain key concepts, the teacher's ability to choose and use appropriate learning strategies, and the teacher's ability to use learning media. Student knowledge includes the teacher's ability to understand student characteristics and the teacher's ability to adapt learning to student needs. Content knowledge includes the depth of the teacher's knowledge about Bhinneka Tunggal Ika material as well as the teacher's ability to connect the material with real life. Observations were carried out during two learning meetings on the Bhinneka Tunggal Ika material. 2. Interview: Interviews were conducted with teachers to dig deeper into their PCK in teaching Bhinneka Tunggal Ika material. Interviews were conducted using prepared interview guidelines. The questions in the interview guide include teachers' understanding of PCK, strategies teachers use to implement PCK in learning, obstacles teachers face in implementing PCK, and teacher suggestions for improving PCK. 3. Documentation study: Documentation studies are carried out to collect data about the syllabus, lesson plans and teaching materials used by teachers. This data is analyzed to see how teachers plan learning by considering PCK.

Data analysis was carried out using the Miles and Huberman technique, namely: 1. Data reduction: Data obtained from observations, interviews, and documentation studies were reduced by selecting data that was relevant to the research focus. 2. Data



presentation: Data that has been reduced is then presented in the form of tables, graphs, or narratives.

3. Drawing conclusions. Conclusions are drawn based on the results of data analysis. This conclusion should answer the research question posed. To ensure the validity of the data, this research uses several techniques, namely: Triangulation: data is collected from various sources (observation, interviews, and documentation studies) to ensure the validity of the data. Diligence: researchers carry out repeated observations and interviews to ensure the data obtained is accurate and complete. Sophistication: researchers use observation and interview guides that have been tested for validity. This research was conducted with due regard to research ethics. The researcher explained the purpose of the research to the teachers and asked for their consent to participate in the research. Data obtained from teachers is kept confidential and is only used for research purposes. Researchers try to be objective in analyzing data and drawing conclusions.

4. Results and Discussion

Table 1 shows several striking differences between the two research subjects. Subject 1 is 2 years 4 months older than subject 2. This age difference can influence the perspective and approach of both subjects in teaching. Subject 1 has a master's education, while subject 2 has a bachelor's education. This difference in educational levels can influence both subjects' knowledge and understanding of subject matter and pedagogy. Subject 1 had a much longer working period (17 years) than subject 2 (2 years 11 months). Longer teaching experience can give Subject 1 an advantage in terms of mastery of learning strategies and classroom management. These differences could be factors that influence the PCK of the two research subjects. The research questions raised previously, such as the influence of age, highest level of education, and length of service on PPKn teachers' PCK, can be answered by carrying out further data analysis.

Table 1. Research subjects.

Subject	Age	Last education	Working time as a teacher	Employment status
1	55 years 3 months	Master (2015)	17 years	Civil servants
2	52 years 10 months	Bachelor of civics education (1994)	2 years 11 months	Civil servants

Table 2 shows the calculation of the final PCK score and PCK criteria for two research subjects, namely subject 1 and subject 2. Calculations are carried out based on PCK scores on three components: Teaching knowledge, student knowledge, and content knowledge. In the teaching knowledge component, subject 1 got a score of 3.37, while subject 2 got a score of 2.53. This shows that Subject 1 has a better understanding of learning strategies, selection of learning media, and assessment of learning outcomes compared to subject 2. In the Student Knowledge component, subject 1 again got a higher score (4.51) than subject 2 (3.65). This score shows that subject 1

better understands the characteristics and learning needs of students and is able to adapt learning to student needs. In the content knowledge component, subject 1 got a score of 1.11, while subject 2 got a score of 0.89. The difference in scores on this component is not very significant, indicating that both subjects have sufficient knowledge about the Bhinneka Tunggal Ika material. The final PCK score is calculated by adding up the scores on the three components and dividing it by 3. Subject 1 gets a final score of 3.11, while subject 2 gets a final score of 2.40. Based on the final PCK score, subject 1 is categorized as good, while Subject 2 is categorized as good enough.



Table 2. Comparison of PCK scores between research subjects.

PCK criteria	Subject 1	Subject 2
Teaching knowledge	23,58 / 7 = 3,37	17,69 / 7 = 2,53
Student knowledge	13,53 / 3 = 4,51	10,94 / 3 = 3,65
Content knowledge	3,33 / 3 = 1,11	2,66 / 3 = 0,89
Final score	(3,37 + 4,51 + 1,11) / 3 = 3,11	(2,53 + 3,65 + 0,89) / 3 = 2,40
PCK criteria	Good	Good enough

Teachers' formal educational background plays an important role in improving pedagogical content knowledge (PCK) performance. Formal education provides teachers with in-depth knowledge of the subjects they teach. This knowledge is important for building a strong understanding of the concepts, principles, and structure of scientific disciplines. Teachers with strong content knowledge can explain material more clearly, choose appropriate examples, and answer student questions more effectively. One study states that teachers with a master's degree in education have a greater impact on student learning outcomes than teachers with just a bachelor's degree. This suggests that formal education can improve teachers' content knowledge and, in turn, improve their PCK performance. Formal education introduces teachers to a variety of learning strategies and pedagogical theories. This understanding helps teachers choose the most appropriate methods and approaches to teach subject matter to students with various backgrounds and learning styles. A study states that teachers with strong pedagogical knowledge are more effective in teaching their students than teachers with weak pedagogical knowledge. This suggests that formal education can improve teachers' pedagogical understanding and, in turn, improve their PCK performance. Formal education encourages teachers to reflect on their teaching practices and look for ways to improve them. Reflection helps teachers to identify areas that need improvement and develop new strategies to teach more effectively. A study shows that reflection is an important tool for professionals, including teachers, to

improve their practice. Formal education can help teachers develop reflection skills that are important for improving their PCK performance. The teacher's formal educational background is an important factor in improving PCK performance. Formal education provides teachers with in-depth content knowledge, strong pedagogical understanding, and reflection skills that are essential to teaching effectively (Adedoyin, 2016; Hill, 2005; Mishra, 2007; Sutopo, 2018).

The duration of teaching experience is an important factor that can improve teacher PCK (Pedagogical Content Knowledge) performance. PCK is the knowledge that teachers have about how to teach material effectively to students. Teachers who have high PCK are able to understand student characteristics, choose appropriate learning strategies, and use effective learning media. The longer teachers teach the more experience they gain in interacting with students. This experience helps teachers to understand different student characteristics, such as learning styles, ability levels, and learning interests. By understanding student characteristics, teachers can choose appropriate learning strategies and adapt learning materials to student needs. Experienced teachers have more knowledge about various learning strategies that can be used to teach material. They also have experience in implementing different learning strategies and know which strategies are most effective for students with certain characteristics. Experienced teachers have more knowledge about various learning media that can be used to attract students' attention and improve



their understanding of learning material. They also have experience in using different learning media and know which media are most effective in achieving learning goals. Several studies show that the duration of teaching experience has a positive relationship with PCK performance. The study found that teachers who had longer teaching experience had higher PCK compared to teachers who were new to teaching. Another study found that PCK is complex knowledge and takes time to develop. Experienced teachers have more time to develop their PCK compared to new teachers. The duration of teaching experience is an important factor that can improve PCK performance. Experienced teachers have more knowledge about student characteristics, learning strategies, and learning media. This helps them to teach students more effectively and interestingly (BeiJing, 2013; Harter, 2012; Haryanto, 2019)

Motivation and commitment are two important factors that can improve teacher PCK (pedagogical content knowledge) performance. PCK is the knowledge that teachers have about how to teach subject matter in an effective and contextual way. Teachers who are highly motivated and committed will be more proactive in developing their PCK. Motivated teachers will have a strong desire to learn and develop their PCK. They will look for opportunities to take part in training, workshops, and seminars related to PCK. They will read books, journals, and articles about PCK. PCK development requires time and effort. Teachers who are highly committed will be persistent in facing various challenges in the PCK development process. They will not give up easily when facing difficulties. Teachers who are motivated and committed will be more creative in teaching. They will develop innovative and engaging learning strategies to help students understand the subject matter. They will use various learning media to make learning more effective. Teachers who are motivated and committed will be more open to collaborating with other teachers. They will share ideas and experiences about PCK. They will

learn from each other and improve PCK together. A study found that there is a positive relationship between motivation and teacher PCK. Teachers who have high motivation have better PCK. Another study found that teachers' commitment to professional development contributed to increased PCK. Motivation and commitment are important factors that can improve teacher PCK performance. Teachers who are highly motivated and committed will be more proactive in developing their PCK. This will have a positive impact on the quality of learning and student achievement (Borko; 2007; Haryanto, 2019; Loughran, 2006; Moeller; 2008).

5. Conclusion

The PPKn teacher's pedagogical content knowledge (PCK) in the Bhinneka Tunggal Ika material at SMA Negeri 5 Metro has met the PCK criteria, which consist of knowledge about teaching, knowledge about students, and content knowledge. The importance of pedagogical content knowledge for PPKn teachers is a form of success in building students' understanding of the overall material and values contained in Pancasila and citizenship education by establishing effective communication with students and good mastery of the material according to their level of understanding, and complexity of learning material.

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