Analysis Of Technological Pedagogical Content Knowledge (TPACK) of Elementary School Teacher Education Students In Developing Merdeka Curriculum Lesson Plans

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Abstract

The change in the curriculum demands that students as prospective teachers must be able to master all components of the curriculum. One of the mandatory skills to possess is the ability to develop teaching materials. Initial observation indicates that students still have difficulty understanding the content and technology integration in the independent curriculum, even though TPACK is the main capital that teachers must possess in the 21st century. This research aims to describe the TPACK abilities of students in developing teaching materials for the independent curriculum. This study is qualitative research. The subjects of this study are 21 fourth-semester PGSD UNISBA students. Data collection is conducted through observation, interviews, field notes, and documentation. The results of the study show that the TPACK abilities of students in developing independent curriculum teaching materials are: TK component with a good percentage of 81%, CK component 76%, PK component 71%, PCK component 57%, TPK component 67%, and TCK component 57%. The ability of students to develop teaching materials for the independent curriculum shows that their PCK and TCK abilities are constrained by their low understanding of the process and principles of the Merdeka curriculum.

Keywords: *TPACK, learning tools, kurikulum merdeka*

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1. INTRODUCTION

Education is an essential part of the development, progress, and dignity of a nation. The rapid development in the field of Education shows how successful the collaborative role of government, society, and also all actors in the educational process is. All educational activities can not be separated from the participation of the government as part of the guarantor of equitable education through policy formulation to monitoring evaluation (Nurjanah, 2014). The role of educators as implementers of technical education policies, as well as the community through participation in determining the final results of the implementation of Education. As a form of government commitment to provide equitable education and quality of Education, the curriculum continues to evolve and change into an ideal curriculum by the challenges of the Times.

The curriculum shift that has occurred in the educational process in Indonesia is a manifestation of a commitment to improving the quality of Education. As has been experienced in Indonesia, there have been several changes in the curriculum. Starting from the 1994 curriculum, KBK curriculum, KTSP, 2013 curriculum, emergency curriculum, to independent curriculum. Curriculum changes occur, not only in name but also in the achievement component and also in the implementation and evaluation in it. The curriculum is a lesson plan, teaching materials, and learning experience designed by the government as a benchmark for the implementation of Education (Manalu, Sitohang, and Turnip :2021). Through the curriculum of Education implementers, teachers can develop teaching tools to achieve the competency standards that have been determined.

An Independent curriculum is a curriculum that is currently used as a curriculum at all levels of Education Units. The independent curriculum is an idea proposed by the Indonesian Minister of Education Nadiem Makarim in the policy of changing the concept of Education to be free to learn and free to teach. Kurikum Merdeka is the result of the evaluation and reconstruction of the design of educational concepts based on the implementation of the previous curriculum 2013. The impact of covid has caused the implementation of learning to not be maximized so that learning loss occurs in students (Donnelly and Patrinos, 2021). Based on the main evaluation studies and learning processes that have occurred in Indonesia over the past 3 years, the Merdeka curriculum offers new learning as a fulfillment of abilities that have not been received by students. Through this curriculum concept, educational activities, namely teaching, and learning, become self-awareness and according to self-needs. This concept is the flagship of the independent curriculum. Learning independence presented by this curriculum not only requires students to

master the material or content, but students can master these competencies according to cognitive, affective, and psychomotor development.

The independent curriculum has a fundamental difference from the previous curriculum, if the previous curriculum presents identical learning with related themes at each grade level. In the independent curriculum, students are not divided into class levels but in the form of phases. Fase is the stage of student ability. The phases in this curriculum are Fase a (Grade 1-2), Fase B (Grade 3-4), Fase C (grade 5-6). Through this phase, students are not only required to master the material in each class but also pay attention to the level of cognitive development and self-readiness. In addition to changes in the level of achievement into phases, other changes that must be adjusted are core competencies or mastery achievement into learning achievement (CP), Learning Goals (TP), flow of learning goals (ATP), and learning implementation plans or teaching modules.

The differences that exist in the independent curriculum certainly require adjustments for education implementers to implement in the learning process. During this transition period, the challenges and obstacles experienced by teachers are quite diverse. Challenges that occur include a lack of teacher understanding of terms in the independent curriculum, from CP-ATP, and difficulty reading and understanding CP each phase and its elements (Amrina, Vita, and Joni, 2022). The obligation of need assessment is also diagnostic assessment to students first before preparing learning devices. The return of learning to one lesson is not thematic. Changes in the teaching module. Provide understanding for students related to kurikulum merdeka. These are the challenges and obstacles that occur to teachers today. So that the obligation to master all parts of the curriculum becomes a must for every educator or prospective educator, in this case, prospective teachers, namely elementary school teacher education students.

Elementary School Teacher Education (PGSD) students must have competencies in teaching process activities. These competencies are pedagogical competence, professional competence, personality competence, and social competence. Pedagogical competence is the ability of students in mastering knowledge and a series of learning processes. One of them is the ability of students to create teaching devices. The ability to create this learning tool includes the ability of students to read and analyze CP, TP, and ATP, plan learning activities, and prepare teaching modules. The preparation of teaching devices in the independent curriculum is required to integrate innovative, creative learning and the use of technology.

The integration between technology, material mastery, and pedagogical capabilities is called Technological Pedagogical Content Knowledge (TPACK). TPACK consists of six

knowledge components, such as Technological Knowledge (TK) Content Knowledge (CK), Pedagogical Knowledge (PK), Pedagogical Content Knowledge (PCK), Technological Pedagogical Knowledge (TPK), and Technological Content Knowledge (TCK) Amrina, Vita, Joni, et al (2022). The use of this integrated capability will make it easier for prospective elementary school teachers to plan and compile learning tools. Pgsd students of Balitar Islamic University are also required to master the ability to prepare learning tools. Therefore, students take learning planning courses.

Considering the importance of student's ability in integrating technology, pedagogy and independent curriculum content, this study aims to see and describe the ability of TPACK pgsd students of Balitar Islamic University in preparing teaching tools.

2.   RESEARCH METHODS

This study is a type of descriptive qualitative research. The subjects of this study were pgsd students in semester 6 of FKIP Islamic University Balitar academic year 2022- 2023 as many as 21 students. This research was carried out from December 2022 to January 2023. The procedure of this study consists of determining the formulation of problems in the preparation of learning tools, determining the focus of research, making research instruments, data collection and data analysis. Data collection techniques used include observation of student activities to prepare learning tools (starting from the preparation of TP from CP, ATP and teaching modules), interviews, and documentation in the form of learning tools prepared.

Data analysis techniques include data reduction, data presentation, and conclusion. Data reduction is done by collecting data during the research process by sorting and determining the data used. Further, the data is presented in the form of clear descriptions, tables, and charts. Finally, the conclusion is made by stating the final findings of the study.

3.   RESULTS AND DISCUSSION

TPACK components consist of Technological Knowledge (TK), Content Knowledge (CK), Pedagogical Knowledge (PK), Pedagogical Content Knowledge (PCK), Technological Pedagogical Knowledge (TPK), and Technological Content Knowledge (TCK). The results of the analysis of the ability of Technological Pedagogical Content Knowledge (TPCK) of PGSD

students in the course of learning planning with the material for the preparation of Merdeka curriculum learning tools show the following data.
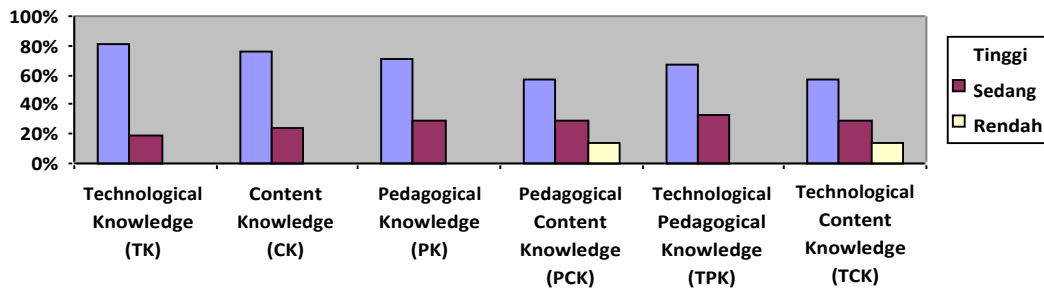
Figure 1. Graph of Student TPACK Results on the Preparation of Learning Devices

Based on data in Figure 1 above, the data shows the ability of TPACK students in preparing independent curriculum learning tools which are described as follows.

a.   Components of Technological Knowledge (TK)

The ability of students in the TK component shows the data, from 21 students, 81% of students are able and understand the components of knowledge related to technology very well, and 19% of them are in the category of being in control of technology knowledge. This ability is the ability to understand the technology that is mastered by the simplest students related to the use of tools or means of delivering learning. The simplest means of learning is the style of writing and paper, to digital-based learning facilities, ICT, and other digital media (Schmidt,2014). As for the data, it appears that students can use digital media or platforms during the learning process, including the use of Microsoft Office devices, using Zoom applications, Google Classroom, Google Meet, google Forms, and other digital media. This is certainly in line with the challenge for 21st-century teachers who must be technologically literate. Not only knowing but mastering and being able to use the technology. In line with the statement of Akhmadan (2017) that the use of IT- based media in the learning process is a must for the government to teachers.

b.   Component of Content Knowledge (CK)

In the CK component, as many as 76% of students master the learning device material very well and 24% of students are quite good at using this material. Aspects seen in the mastery of this material is the ability to develop a learning implementation plan (RPP) which can formulate indicators of competence achievement, teaching materials, learning activities, learning media, learning resources, student worksheets (LKS), and assessment tools. Students can arrange each

component of the learning device well. The ability to compose a good learning tool is a pedagogical competence for teachers, so this ability shows the ability of teachers to be ready to teach. A teacher is required to be able to perform his duties and obligations in the form of binding competencies to be conveyed to students and the wider community (Sulfemi and Dede, 2018).

c.   Component of Pedagogical Knowledge (PK),

The PK component of students in preparing teaching devices in learning planning courses is 71% getting a very good category and 29% percent getting a medium or good category. The abilities observed in this PK include the ability to use models, methods, strategies, and learning processes from planning to evaluation (Mishra and Koehler, 2006). Based on the learning tools that have been prepared, it appears that students have used models or strategies in learning. Students can choose a model and can arrange learning steps based on the chosen model. However, there are also those who still only choose the model but do not appear in the syntax of the implementation of learning. Students conceptually understand the types of student-centered learning models. however, there are still rudimentary ones.

d.   Component of Pedagogical Content Knowledge (PCK)

The PCK component from the analysis of students ' ability to prepare learning tools shows that 57% of students are very good at mastering the PCK component, 29% of students in the medium category, and 14% in the low category. on this component. The indicators seen are the ability to compile independent curriculum learning tools including reading learning achievement (CP), determining (TP), determining the flow of learning goals (ATP), and preparing teaching modules. It appears that in this component, there are still quite a lot of students who have difficulty developing teaching devices. This can be seen from the results of CP that are not sequential in Phase, elements in CP are not considered, and the difficulty of making ATP from existing TP. In the teaching modules made by students, they have shown the compatibility between CP, TP, and ATP. However, some components are not suitable, among others, the lighter questions in the teaching module are not by the material, more students who make one teaching module only used one meeting.

Based on the results of interviews, students' difficulties in the preparation of the independent curriculum device were caused by the change of the term from the 2013 curriculum to the independent curriculum. Changes in core competencies to different phases make it difficult for students to break down competencies into 1 phase consisting of 2 classes. Another difficulty

is to understand the contents of the CP in the form of paragraphs in the curriculum because in Curriculum 2013 KI presented in the form of a list. Students have difficulty breaking down this CP description into TP. Furthermore, in making ATP, students were found to be confused because this term replaced the syllabus in learning. As well as changes in the content of teaching modules that are different from the previous lesson plan. Similar to research (Putri, Evilia, and Rian, 2022), the obstacles to preparing an independent curriculum consist of external factors in the form of difficulties in developing devices because they are accustomed to teachers and students ' books, while internal factors in the form of Understanding Principles and procedures related to the independent curriculum are still lacking. Pedagogically, the concept of student learning tools is not difficult, but in the content of independent curriculum material, student mastery still tends to be lacking.

e. Component *Technological Pedagogical Knowledge (*TPK)

In the TPK component observed, 67% of students were able to master the application of technology in the preparation and manufacture of teaching devices very well, while 33% were in the medium category. Based on these data, the ability of TPK students is quite good, students can utilize technology in the preparation of learning devices, can adjust the types of technological applications used in different learning, and create ICT-based media even if simple. Students create it-based media in teaching modules that are arranged, namely PowerPoint, learning videos, online-based quizzes, and form. Some types of media indicate the integration of pedagogical and technological capabilities in the manufacture of learning devices.

f. Component *Technological Content Knowledge* (TCK)

The ability of students in TCK showed results of 57% in the very high category, 29% in the medium category, and 14% in the low category. This is indicated by several indicators including the suitability of technology with independent curriculum materials, the variety of technology in learning devices, and the integration of technology in teaching independent curriculum. Students can make learning media according to learning materials, but some things are lacking, namely, the media developed are limited to simple technology in the form of Powerpoint and learning videos from application platforms available. The use of it in the utilization of independent curriculum is limited to the media. There is no form of theme integration in the use of IT in independent curriculum learning tools. As a prospective educator, you should make maximum use of IT and understand the content in learning. 21st-century teachers are required to be able to master IT, think creatively, and innovatively and be able to communicate well (Jufriadi, 2022).

So that the TCK component is a fundamental component to equip prospective teachers to have competitiveness and the ability to innovate more broadly.

4. CONCLUSION

The preparation of learning devices is the basic thing owned by a teacher. Based on research conducted pack obtained the ability to compile learning tools. These capabilities are kindergarten with a good percentage of 81%, CK component at 76%, PK component at 71%, PCK component at 57%, TPK component at 67%, and component 57%. From this percentage, the material mastery component, or PCK appears to be the lowest component. students still have difficulty understanding some of the principles and procedures for the preparation of independent curriculum learning tools. This difficulty is influenced by external factors and internal factors of student material mastery.

5. SUGGESTION .

As for the advice that can be given to increase the pedagogical ability and integrated technology in students, it requires innovative and creative efforts from lecturers. Understanding of content and materials can be provided through intensive learning and practice. Independent curriculum is a new curriculum, so it needs efforts from all parties to provide mutual socialization and evaluation related to the principles and procedures in this curriculum.

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