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Needs Analysis of Project-Based Teaching Module Development in the Independent Curriculum

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Abstract: This study aims to describe the needs analysis of developing a Project Based Teaching Module to increase the creativity of PGSD S1 students in designing independent curriculum-oriented elementary school learning. This study employed a mixed method approach, explicitly utilizing a sequential explanatory design combination research design. The study employed quantitative methodologies and focused on 4th-semester students in the PGSD FIPP UNY Study Program, resulting in a population size of 215 students. The study employed a random sampling technique to choose a group of students in their 4th semester. The sample technique employed the Isaac and Michael Tables. The collection of quantitative data was conducted using survey methodologies. The research instrument employed questionnaires that had been previously delineated with a grid. Additionally, the questionnaire instrument created to assess student creativity underwent validation and reliability testing before its use in the field. The gathered quantitative data were evaluated using descriptive methods. The quantitative data analysis was conducted using the Statistical Package for Social Science (SPSS) software, specifically version 25. Qualitative data were acquired using qualitative methodologies, specifically through interviews, observations, and documentation approaches. The tools employed in qualitative research encompass interview protocols, observation protocols, and documentation protocols. Meanwhile, qualitative data in this study was analyzed using data analysis (Miles & Huberman, 2014), which includes condensation data, display data, and conclusion drawing/verification. This research shows that PGSD FIPP UNY students need teaching materials to support learning, especially in the Elementary School Indonesian Language and Literature Education Development Course. This is evidenced by the results of questionnaires filled out by 62 respondents from different classes, showing the need for teaching materials for the Education Development course they need. The questionnaire results prove that 100% of students stated they needed teaching materials for tool development, especially those based on the Merdeka Curriculum.

Keywords: problem-based teaching, module, creativity, independent curriculum

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Introduction

The Merdeka Curriculum is open for all PAUD, SD, SMP, SMA, SMK, Special Education, and Equality educational units. Education units make choices based on the Independent Curriculum Implementation Readiness Questionnaire, which measures the readiness of teachers, education staff and education units in curriculum development. The most suitable choice refers to the readiness of the educational unit. Implementing the Independent Curriculum is more effective if it aligns more with needs.

The goal of a successful educational program and the development of an effective curriculum must be to meet the needs and demands of culture, society, and expectations of the communities served.

Therefore, curriculum development and educational reform are constantly reviewed, revised, and changed (Johnson, 2001). Curriculum development can be challenging, so the involvement of all stakeholders, especially individuals directly involved in learning, is an important part of successful curriculum development and revision (Johnson, 2001).

The most important person in the process of curriculum implementation is the teacher. With their knowledge, experience and competence, teachers are central to every curriculum development effort. Better teachers support better learning because they are most knowledgeable about teaching practices and are responsible for introducing curriculum in the classroom. If the other party has developed the curriculum, the teacher must try to know and understand it. So, teachers should be involved in curriculum development. For example, the opinions and ideas of teachers should be incorporated into curriculum development.

On the other hand, curriculum development teams should consider teachers as part of an environment that affects the curriculum (Carl, 2009). Therefore, teacher involvement is important for successful and meaningful curriculum development. Teachers as implementers are part of the last stage of the curriculum development process.

The involvement of teachers in the curriculum development process is important to meet the community's needs. The curriculum development process requires teachers to act and reflect on the community's needs at every stage of the development process. However, sometimes, the process that this teacher is asked to follow is not clear. On the other hand, not all teachers could be involved in any curriculum implementation process. Professional development of teachers is an important factor contributing to the successful development and implementation of curriculum (Handler, 2010). Teachers should be equipped with the proper knowledge and skills that help to contribute effectively to curriculum development. Therefore, teachers need training and workshops directed at professional development to contribute to curriculum development, so they must be empowered (Carl, 2009). Teachers involved in curriculum organization have many roles and responsibilities. Teachers enjoy teaching and seeing students develop interests and skills. Teachers need to make lesson plans and syllabi within the framework of the given curriculum because of their responsibility to implement the curriculum to meet student needs (Carl, 2009). Fullan (1991) found that the level of teacher engagement as central to curriculum development leads to the achievement of effective educational reform. Therefore, teachers are an important factor in the success of curriculum development, including implementation and evaluation measures.

Teachers can collaborate effectively with curriculum development teams and specialists to organize and structure textbooks (Handler, 2010). Teacher involvement in the curriculum development process is important to align curriculum content with the needs of students in the classroom. Therefore, the formulation of this research problem is how to analyze the need to develop a Project Based Teaching Module to increase the creativity of PGSD S1 students in designing independent curriculum-oriented elementary school learning. Meanwhile, the purpose of this study is to describe the analysis of the need for developing a Project Based Teaching Module to increase the creativity of PGSD S1 students in designing independent curriculum-oriented elementary school learning.

Methods

This research used quantitative and qualitative approaches. Meanwhile, this research stage is in the first stage of collecting and analyzing quantitative data, followed by the second stage by collecting and analyzing qualitative data to strengthen the results of qualitative research in the first stage. The weight of this research lies in the first stage because the use of quantitative data and quantitative research results aims to assist in interpreting qualitative research findings (Creswell, 2009: 211-212).

The population of this study is all 4th-semester students in the PGSD FIPP UNY Study Program, so the population is 215 students. The study took a random sample of 4th-semester students (random sampling). Then, 63 PGSD FIPP UNY students were selected as respondents in this study. Survey techniques carry out quantitative data collection. A survey is a procedure in quantitative research by giving questionnaires to a small group of people, called a sample, to identify trends in attitudes, opinions, behaviours, or characteristics of a large group of people called the population (J. W. Creswell, 2014). The purpose of the survey in this study was to determine the level of student creativity in designing learning Indonesian SD Curriculum Merdeka.

Qualitative data are obtained through interviews, observation, and documentation techniques. The three techniques aim to discover why and how students have creativity in developing learning Indonesian Elementary School Curriculum Merdeka prominently, both very high and very low. Based on the quantitative research results, several respondents with very high and very low creativity were obtained. Meanwhile, the criteria for respondents who were then carried out qualitatively were 1) having a very high level of readiness and 2) having a very high level of readiness. Interviews, observations, and documentation were then carried out for respondents with these criteria. When researchers find relatively sedentary answers in some respondents, the data is saturated, so the study is stopped.

The instruments used in qualitative research include interview guidelines, observation guidelines, and documentation guidelines. Here is a further explanation of the three techniques. The research instrument uses a previously described questionnaire with a grid as follows.

Table 1. Creativity Questionnaire Grid

No.	Aspects	Sub-aspects
1	Curriculum understanding	Produce varied ideas or thoughts. Can see a topic from different perspectives
2	Availability of teaching materials	a. Able to produce new and unique thoughts b. Have a strong will to complete tasks
3	Teaching material needs	a. Spark lots of ideas b. Independent in learning

Furthermore, the questionnaire instrument developed to measure student creativity was tested for validity and reliability before being used in the field. The instrument's validity in this study uses the validity of the content. This study uses two experts as raters with five category ratings, so based on Aiken's validity table, the instrument is considered valid if the minimum validity index reaches 0.92 (Aiken, 1985). Further, reliability refers to the consistency or stability of an instrument (Kothari, 2004: 74). Reliability is measured using correlation coefficients, which can be divided into three categories, namely weak, medium, and strong.

Table 2. Instrument Reliability

Correlation Coefficient	The power of relationships
0.70 – 1.00	Strong
0.30 – 0.69	Keep
0.00 – 0.29	None

Instrument reliability was measured in this study with the help of SPSS version 25. Because the data of this study is in the form of intervals, the test uses Cronbach's Alpha. Reliability is determined by comparing Cronbach's Alpha value with the value of the correlation coefficient. The semi-structured interview guidelines consist of two levels of questions: the main question and the follow-up question (Kallio et al., 2016). The main questions cover the core related to the research topic. This main question can be about a problem familiar to respondents so that it can break the ice but still refer to the subject of the study. After that, it can move on to more emotional and profound questions. Next, continue by providing follow-up questions to maintain the interview flow and get accurate and optimal information. These follow-up questions can be designed in advance or spontaneously based on respondents' answers.

Table 3. Interview Guidelines

Aspects	Sub-aspects
Perception of Indonesian Learning with the Independent Curriculum	Early perception of learning Indonesian
	Perceptions of the role of teachers in designing learning Indonesian
Efforts made in developing learning Indonesian	Experience when starting to develop learning tools for Indonesian
	Preparations made to develop learning tools
	Obstacles experienced when developing learning tools Indonesian the Merdeka Curriculum

Observation guidelines are used as a guide for researchers when observing students with very high and very low levels of creativity. Observation is made when students carry out learning. Data analysis techniques in this study are descriptive, qualitative, and quantitative. The quantitative data obtained are analyzed descriptively. Descriptive statistics summarize overall trends or trends from the collected data and provide an understanding of the diversity of scores. This quantitative data analysis was carried out with the help of *Statistical Package for Social Science* (SPSS) software version 25. After the data is collected, it is categorized into five parts: very low, low, medium, high, and very high. Data categorization uses ideal Mean (Mi) and Standard Deviation (SDi). Meanwhile, the determination of score criteria can be seen in Table 4.

Table 4. Determination of Score Criteria

Interval	Category
X Mi – SDi 1.8	Very low
Mi - 1.8 Sdi < X ≤ Mi - 0.6 SDi	Low
Mi - 0.6 SDi < X ≤ Mi + 0.6 SDi	Keep
It had +0.6 SDi < X ≤ Mi +1.8 SDi	Tall
Mi + 1.8 SDi < X	Very High

Information:
Mi = Mean ideal
SDi = Ideal Standard Deviation
X = Score obtained

Qualitative data are obtained through interviews, observation, and documentation techniques. The three techniques aim to discover why and how students have creativity in developing learning Indonesian Merdeka Curriculum prominently, both very high and very low. Based on the quantitative research results, several respondents with very high and very low creativity were obtained. Meanwhile, the criteria for respondents who were then carried out qualitatively were 1) having a very high level of readiness and 2) having a very high level of readiness. Interviews, observations, and documentation were then carried out for respondents with these criteria. When researchers find relatively sedentary answers in some respondents, the data is saturated, so the study is stopped.

The validity of the data in this study was tested using the triangulation method. Triangulation was done to support the findings by showing that at least three independent measures agreed with it or, at least, did not contradict it. For example, for a particular finding, when one says agree and one disagrees, it will be difficult to determine which one is true (Miles, Huberman, & Saldana, 2014). Therefore, the next measure is needed until the information obtained is saturated. Of the four types of triangulation (Miles & Huberman, 2014), two of which were used in this study are method and source triangulation. Method triangulation means checking with different methods to the same source. The methods used are interviews, observation, and documentation. In contrast, source triangulation means checking with the same method on different sources. Source triangulation is done by interviewing different sources, namely several teachers with very high and very low readiness. Qualitative data in this study was analyzed using data analysis (Miles & Huberman, 2014), including data condensation, data display, and conclusion drawing/ verification.

Results and Discussion

Results

This problem-based teaching-based teaching material needs analysis involved 62 PGSD UNY students from 5 existing classes. Data were obtained through questionnaires and in-depth interviews with students who took the Elementary School Indonesian Language and Literature Learning Development course. The description of the data is as follows.

Table 5. Respondent Gender Frequency

Gender	Frequency	Presented
Man	14	23%
Woman	48	77%
Total	62	100%

From Table 5, it was obtained that the questionnaires were relatively evenly distributed in terms of gender. Both male and female students participated in filling out questionnaires to capture the analysis of teaching material needs needed by students.

Table 6. Statistics Data

Descriptive Statistics	
Mean	70.93548
Median	71
Mode	70
Standard Deviation	3.861839
Sample Variance	14.9138
Kurtosis	0.984123
Skewness	-0.24939
Range	21
Minimum	58
Maximum	79
Sum	4398
Count	62

From Table 6, it can be seen that the data of 62 has a minimum value of 58 and a maximum value of 79. Of the seventeen statements given to respondents, the mean value is known to be 70.935, and the standard deviation value is 3.861839, which means that the mean value is greater than the expected value so that the data deviation that occurs is low so that the distribution of the value is even.

Suggestions and opinions from students also support the results of filling out the needs analysis questionnaire. Student suggestions and comments regarding the need for teaching materials are described in Table 6. The results of suggestions and comments from students are also a consideration for determining the development of teaching materials that must be done. The questionnaire presented was divided into three indicators: understanding of the Independent Curriculum, ease of obtaining references, and the need for teaching materials.

Table 7. Results of Filling Out the Questionnaire

Indicator	Percentage
Student understanding of the Independent Curriculum	21%
Ease of obtaining references for the development of learning tools (Teaching Modules)	62%
The need for teaching materials for the development of learning tools based on the Independent Curriculum	100%

Based on the presentation of Table 7, it is known that as many as 21% of respondents, or 13 students, understand the independent curriculum. In comparison, as many as 79% still do not understand the concept or implementation of the independent curriculum in the learning tools. Furthermore, the indicator of ease of obtaining references gave results as many as 62% or 38 students stated that it was easy to get references. Conversely, 38% still had difficulty getting references to develop learning tools. The last indicator is the need for lecture teaching materials as many as 100% of students say they need them to support learning.

Discussion

Understanding of the Independent Curriculum

The independent curriculum is a new policy implemented in the world of education in Indonesia. The independent curriculum has the principle of providing space for independence in learning for students and teachers. The concept of an independent curriculum has similarities and differences with the previous curriculum. The 2013 curriculum is directed to develop students' knowledge, understanding, abilities, values, attitudes, and interests to be able to do something in the form of sources. Meanwhile, the independent curriculum aims to encourage learning following students' abilities and provide a wider space for character development and basic competencies (Pratycia, 2023).

The Merdeka curriculum has several components that are different from the 2013 curriculum. The difference lies in the term phase, which refers to class levels, teaching modules, learning achievements, learning objectives flow, diagnostic assessment, differentiated learning, and Pancasila student profiles. The existence of differences in these components will certainly result in the development of learning tools. The independent curriculum, which is still relatively new, certainly requires in-depth study so that compiling independent curriculum-based learning has clear goals. Students prospective elementary school teachers need to understand the development of this independent curriculum.

Based on the questionnaire, students stated they were still confused about developing learning tools that use this independent curriculum. The independent curriculum has only been implemented gradually starting in 2022 because it is still new, so from the user side, it still experiences some difficulties. Some of the challenges experienced by students are that they are required to be more creative in designing teaching modules and determining learning objectives and the flow of learning objectives so that a teacher can no longer carelessly create and design lesson plans. When planning, implementing and assessing learning, the difficulty of analyzing CP, formulating TP and compiling ATP and Teaching Modules, determining learning methods and strategies, limited teaching materials, lack of ability to use learning methods and media, and teaching materials are too broad.

An independent curriculum that uses learning outcomes to measure learning competencies that students in each development phase must achieve. These learning outcomes are still broad, so they need to be sorted into learning outcomes. This makes students need to conduct a deeper understanding study of the essence of the independent curriculum before developing tools. In addition, students are still having difficulty reducing learning outcomes into learning goals and flows.

Ease of Getting Referrals

To develop learning tools using an independent curriculum, various references are needed to support it. So far, students have received references for device development from various sources. They said that the availability of references was sufficient. In developing devices, students get from the internet, for example, YouTube or articles. In addition, the collaboration carried out by students when developing devices adds to the richness of students' thinking about device development theory. Students exchange ideas, experiences, or reading lists that they use as reference references to develop learning tools.

However, the references referred to by students are less credible. Students get references from YouTube or Blogspot on the internet. If examined further, the reference does not accommodate creative and innovative abilities. The existing references lack depth, resulting in students' understanding of developing learning tools using an independent curriculum. Meanwhile, references from books or modules are still very rare. This is one of the reasons why students prefer to look for references on the Internet.

The ability to develop learning tools is one of the things that prospective teachers need to master. Of course, this ability is obtained by elaborating various credible and reliable references. Because the independent curriculum is still new, the existence of this reference is still very rare. Even though it is available online, its credibility is still lacking. Especially now that the number of references confuses students because one source and another source have different points of view.

Teaching Material Needs

The main problem in learning and developing teaching tools in Indonesia is the lack of trusted teaching materials. From the results of filling out the questionnaire, students stated that they needed

teaching materials to develop learning tools oriented to Indonesian the Independent Curriculum. Although there is currently a lot of information about the independent curriculum and the development of teaching modules that students can access, they need teaching materials designed to develop teacher skills, especially in administration.

So far, there has been no teaching material for developing devices deliberately designed according to the needs and characteristics of PGSD students. Moreover, before developing tools, students need to study the components of the independent curriculum, so it is felt that this makes it difficult for students. Teaching materials that are designed in a coherent and easy-to-understand manner will greatly help students in understanding the material. Not only that, the implementation of how to prepare teaching modules in Indonesian also greatly helps students understand the development of these devices.

The availability of the right teaching materials will greatly affect the achievement of learning objectives. Teaching materials will help students understand the material, especially in the Indonesian learning development course, which uses project-based learning design. In this course, students have bills in the form of teaching modules in Indonesian. Of course, the development is not instantaneous. Still, they must make preparations step by step so that teaching materials will greatly help them learn independently and be guided.

Expected Teaching Materials

The conclusion from the results of filling out the questionnaire about student expectations regarding the availability of modules in the Elementary School Indonesian Language and Literature Learning Development course is that students want modules that are very detailed, specific, and complete in explaining the process of designing Indonesian learning tools at the elementary school level. Students expect the module to provide detailed guidance on the components of the independent curriculum and examples of its application.

In addition, students also emphasize the importance of examples of learning tools following the learning models taught. Modules accompanied by examples of lesson plans/teaching modules, learning media, and assessments that support Indonesian learning in elementary schools are highly expected. Students want clear and practical references to design good and interesting learning.

Finally, students highlight the importance of interactive modules, which can be used as a reference and are relevant to the times. Modules that contain steps to design coherent learning and fun learning strategies are also students' expectations. This conclusion illustrates that students want very useful and supportive modules in their learning process, focusing on Indonesian learning at the elementary level following the independent curriculum.

Based on the questionnaire's conclusions that highlight student expectations regarding the availability of modules in the Elementary Indonesian Language and Literature Learning Development course, several important aspects need to be discussed in the context of education. Modules that are very detailed, specific, and complete are what students need to understand in depth the components of the independent curriculum. The theory of constructivism in learning posits that effective learning occurs when learners deeply understand the subject matter. Detailed modules can help students better understand each component of Indonesian learning in elementary school.

Modules that are interactive and relevant to the times reflect the need to utilize technology in education. The theory of social constructivism emphasizes the importance of social interaction in the learning process. Interactive modules can increase student engagement and provide a more engaging learning experience. In addition, relevance to the times is also important because technology continues to develop, and education must keep up with these developments. The module that guides the steps to design coherent learning following the independent curriculum reflects the need for systematic and structured learning. Learning planning theory emphasizes the importance of good planning in learning. Modules that provide step-by-step guidance can help students design learning more effectively and efficiently.

Modules that contain examples of learning strategies and learning media that support Indonesian learning in elementary schools are important reflections of the evidence-based learning approach. This theory emphasizes the use of empirical evidence in the selection of effective learning strategies and media. Modules that include learning strategies and media examples can help students choose an approach that suits their learning objectives. The need for examples of learning tools that fit learning

models reflects evidence-based learning approaches. This theory emphasizes the importance of using empirical evidence and concrete examples in learning. Modules that include examples of learning tools can help students see the practical application of the theory learned in class.

In the overall discussion, student expectations related to modules in the Elementary School Indonesian Language and Literature Learning Development course are in line with learning and education theories that emphasize the importance of deep understanding, practical application, social interaction, relevance to the times, good planning, and the use of empirical evidence in learning. Modules that meet these expectations can positively contribute to students' learning process and preparation as prospective teachers.

Conclusion

Based on the explanation above, it can be concluded that Students of PGSD FIPP UNY need teaching materials to support learning, especially in the Elementary School Indonesian Language and Literature Education Development Course. This is evidenced by the results of questionnaires filled out by 62 respondents from different classes, suggesting the need for teaching materials for the Education Development course needed by them. The results of the questionnaire prove that 100% of students stated that they needed teaching materials to develop tools, especially those based on the Independent Curriculum. These teaching materials are needed because the independent curriculum is a new one, somewhat different from the previous one. In addition, there are no teaching materials in the field that facilitate student needs. The desired teaching materials are teaching materials that are systematic and problem-based teaching. This concept can play a role in developing student competencies as prospective elementary school teachers.

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