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Effective Learning Strategies: Minimum Completeness Criteria and Remedial Program as an Effort to Improve Physics Learning on Dynamic Fluid Material

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Article Info

ABSTRACT

Purpose of the study: This study aims to analyze the use of Minimum Competency Criteria and remedial programs in learning Physics in schools.

Methodology: This mixed-methods research involved all students of Surya Ibu Jambi Private Senior High School, with a sample of 50 students selected through purposive sampling. Data were collected using questions, questionnaires, and interviews, and analyzed using descriptive statistical tests.

Main Findings: The results indicated that the implementation of Minimum Competency Criteria and remedial programs at Surya Ibu Jambi Private Senior High School falls within the good category.

Novelty/Originality of this study: This study provides insights into the effectiveness of Minimum Competency Criteria and remedial programs in enhancing students' understanding and performance in Physics. Positive results could underscore the importance of these strategies in improving learning outcomes in schools.

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1. INTRODUCTION

Education is a crucial aspect of a country's development, as quality education drives positive changes in society and the nation. In Indonesia, education has been a primary focus of national development since independence in 1945 [1]-[4]. Despite various efforts by the government and educational institutions, significant challenges remain in improving the quality of education [5]. According to UNESCO [6], Indonesia's Human Development Index (HDI) is around 0.71, indicating progress in education. However, the data also reveals that many students still lack access to education, and the overall quality of education needs further improvement.

In the process of achieving learning completeness, students often face difficulties. A fun and motivating learning process that aligns with students' interests and talents can help them achieve competency standards [6]-[10]. It is recommended that teachers implement remedial teaching programs to address these difficulties [11]. The 2013 curriculum assessment guide emphasizes the importance of considering Minimum Completeness Criteria (KKM), remedial, and enrichment programs during assessments [12]. KKM and remedial concepts are considered effective learning strategies for ensuring student success.

KKM is the criteria for learning completeness determined by the educational unit with reference to graduate competency standards [13]-[16]. Once KKM is established, student achievements can be evaluated for completeness [17]. Students who do not meet the KKM are required to participate in remedial programs, while

those who meet or exceed KKM can receive enrichment [18]. Remedial programs are designed to address specific learning difficulties and help students achieve competency [19]. However, teachers often face challenges due to varying student abilities, necessitating targeted assistance for those struggling with the teaching and learning process [20].

Teachers provide remedial teaching programs to help students overcome learning difficulties and achieve the minimum completeness criteria [21]. These programs aim to resolve learning issues experienced in regular classroom settings. Research by Alimuddin and Kaniawati [22] indicates that the KKM concept can help teachers evaluate students' understanding of physics and provide feedback to improve future learning. This study, conducted on high school students in South Sulawesi, Indonesia, highlights the benefits of KKM. Similarly, Fang and Li [23] found that KKM is widely used in East Asian countries, such as China and Taiwan, although its application varies based on curriculum context and teaching practices.

Despite the recognition of KKM and remedial programs as effective learning strategies, there is limited research on their specific application and impact on physics learning, particularly on dynamic fluid material in Indonesian schools. Previous studies have highlighted the general benefits of KKM and remedial programs, but a detailed analysis of their effectiveness in specific subjects and contexts remains underexplored. Additionally, the variability in the implementation of these strategies across different educational settings suggests a need for more targeted research to identify best practices and optimize their use. This research aims to analyze the use of KKM and remedial programs in physics learning at schools, with a specific focus on dynamic fluid material. By examining the effectiveness of these strategies, the study seeks to provide insights into improving physics education and addressing learning difficulties in this subject area.

2.   RESEARCH METHOD

This study uses mixed methods research with a sequential explanatory research design. Mixed methods research is a research approach that combines quantitative and qualitative methodologies in one study to obtain more comprehensive results. This approach allows researchers to utilize the strengths of both methods and overcome the limitations of each. Sequential explanatory design is one type of design in mixed methods research that involves collecting and analyzing quantitative data first, followed by qualitative data. This process is run in two sequential and separate phases. The aim of this design is to use qualitative data to explain or enrich the quantitative results.

Research subjects are individuals, groups, organizations, or communities that are the focus of study in research. Research subjects are closely related to populations and samples. Population in research refers to the whole group to which the research wants to generalize the results. The population in this study were students of Surya Ibu Jambi Private Senior High School. Meanwhile, the sample is a subgroup of the population selected by the researcher to collect data. Ideally, the sample should represent the population so that the findings from the sample can be generalized back to the larger population. By using purposive sampling, a sample of 50 students was obtained.
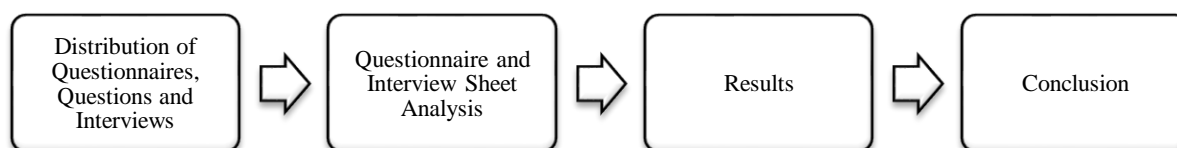

Figure 1. Research Procedure

In data collection, the first thing to do is to determine the research subjects to be studied based on predetermined criteria, then distribute research instruments in the form of question sheets to determine student learning outcomes and questionnaire sheets for student responses to remedial programs and conduct interviews with students. For the questionnaire sheet, the questionnaire sheet and conducting this interview were given to students of Surya Ibu Jambi Private Senior High School totaling 50 students. Where this data collection is to determine the analysis of the use of remedial programs in improving Physics learning in Dynamic Fluid material. The data that has been obtained will be analyzed using the SPSS application with descriptive statistical tests. From this test, a conclusion will be obtained regarding the analysis of using remedial programs in improving Physics learning in Dynamic Fluid material.

Instruments and data collection techniques are important components in research. Research instruments are methods or tools for data collection in a study. Research instruments are designed to collect relevant information based on research questions and variables to be studied. This study used instruments in the form of questionnaires or questionnaires and questions for students. Data collection techniques are strategies or methods used to collect all the information or data needed in a study. There are many techniques in data collection, one of

which is a survey. Surveys involve the use of questionnaires or questionnaires in collecting data from respondents.

The data that has been obtained will be processed using the SPSS application. From the results of the instrument, three tests will be carried out using SPSS, namely the description statistical test, assumption test, and hypothesis testing. The descriptive statistical test aims to provide an overview of the observed data. The main objective is to present and describe the data concisely through measures of concentration and measures of dispersion. From the descriptive statistical test, results will be obtained in the form of mean, median, mode, minimum, maximum, percentage, and student categories. Mean is used in research to calculate the average value of a variable or measurement in a research sample. Median is used to determine the middle value in a data distribution. The mode is used in research to identify the most frequently occurring values in a data distribution. In research, minimum and maximum values are used to report the range or extent of data. Percentages are used in research to present the proportion or percentage of a group or characteristic in the sample. In research, student categories are used to group students based on certain characteristics relevant to the research.

3. RESULTS AND DICUSSION

Below are the results of descriptive statistics for the use of remedial programs in schools. Where in this study, data were collected through questionnaire sheets and questions at the Surya Ibu Jambi Private Senior High School. The description is shown in the following table 1.

Table 1. Description of Data Processing Results

Interval	Frequency	Percentage (%)	Category	Result	
5 – 8	2	8	Bad	Mean	14.52
9 – 12	8	32	Enough	Median	14.00
13 – 16	12	48	Good	Modus	14.00
17 – 20	3	12	Excellent	Minimal	8.00
				Maximal	20.00

Based on the results obtained from the distribution of questionnaires, in the very good category there are 3 students 12%, in the good category there are 12 students 48%, in the sufficient category there are 8 students 32%, and for the bad category there are 2 students with a percentage of 8%. With an average score of 14.52, a median of 14.00, a mode of 14.00, a minimum score of 8.00 and a maximum value of 20.00.

Minimum Completeness Criteria (KKM) are standards set by educational institutions to assess student competency achievements in each subject. KKM is an essential reference in the educational assessment system because it clearly defines the minimum level of mastery students must achieve. The determination of KKM considers the diversity of students' abilities and the competency standards set in the curriculum. KKM serves not only as a threshold for student progression in specific materials but also as a tool to encourage deeper mastery of the material. Therefore, KKM represents the educational expectations to be achieved, rather than merely a numerical benchmark.

Remedial programs are designed to provide additional support to students who have not met the KKM. These programs offer students additional lessons and specialized assistance in areas where they experience difficulties. Through remedial programs, students are given a second chance to better understand the material, overcome learning barriers, and ultimately achieve competency targets. Effective remedial programs require an individualized approach, with methods and materials tailored to each student's specific needs [24]-[27]. This necessitates careful observation by teachers and collaboration with parents and students to ensure the effectiveness of the interventions provided.

The implementation of KKM and remedial programs in schools offers significant benefits. Both concepts support inclusive and differentiated learning, allowing each student to develop according to their potential. The use of KKM ensures that learning standards remain high, while remedial programs ensure that struggling students are not left behind. This combination fosters a supportive and adaptive learning environment, where each student receives the necessary resources to succeed [28]-[34]. The successful implementation of KKM and remedial programs depends on effective communication between teachers, students, and parents, as well as the availability of adequate resources and support from schools.

This novelty of this research are contributes to the understanding of the interplay between KKM and remedial programs by highlighting their combined effect on creating a more inclusive and supportive educational environment. By emphasizing the individualized approach in remedial programs, this study sheds light on the importance of personalized interventions in achieving educational equity. The implication on the study suggest that a well-implemented KKM, coupled with effective remedial programs, can enhance student learning outcomes and promote educational equity. Schools should prioritize the development of tailored remedial strategies to address individual student needs, thereby ensuring that all students have the opportunity to meet

competency standards. This study's findings are primarily based on qualitative data from a limitation number of educational settings, which may not be representative of all schools. Additionally, the study does not account for potential variations in the effectiveness of remedial programs across different subjects and student demographics. Further research with a larger sample size and diverse educational contexts is necessary to generalize these findings. Recommendations this study is Individualized Remedial Programs, Schools should develop and implement remedial programs tailored to individual student needs, ensuring that methods and materials address specific learning gaps. Teacher Training, Provide ongoing professional development for teachers to equip them with the skills needed to design and deliver effective remedial interventions. Parental Involvement, Foster strong collaboration between teachers and parents to support students' learning at home and ensure the effectiveness of remedial programs. Resource Allocation, Ensure adequate resources, such as additional instructional materials and support staff, are available to support remedial programs. Continuous Assessment, Implement regular assessments to monitor student progress and adjust remedial strategies as needed to address evolving learning needs. Inclusive Policies, Promote policies that support differentiated instruction and inclusive education practices to cater to the diverse needs of all students. By integrating these recommendations, schools can create a more equitable and supportive educational environment, ensuring that every student has the opportunity to succeed.

4. CONCLUSION

Based on the results, it is known that the use of KKM and Remedial programs in schools can improve physics learning. This can be seen from the statistical data showing that 48%. With these results, it can be known that remedial programs are classified as good in use.

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