

Analysis of Needs for Elementary School Students' Diagnostic Instruments Development

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Abstract. This research is motivated by the need for factual data to determine the need for developing diagnostic instruments for elementary school students. This study aimed to determine the need for developing a diagnostic instrument for elementary school students. This research is descriptive. The research was conducted by conducting interviews and documentation. The data obtained were then analyzed using a qualitative descriptive analysis technique. The study results stated that teachers had not optimally carried out diagnostic tests because the existing diagnostic tests were still unsuitable for elementary school students, so appropriate diagnostic instruments were needed for elementary school students. The implications of this research can be used as the primary basis for developing a diagnostic instrument for elementary school students.

Keywords: elementary school, diagnostic test, instrument, needs analysis.

1 Introduction

A diagnostic test is used to gather initial information about students' knowledge, skills, and understanding before starting a particular program or lesson [1]. The primary purpose of the diagnostic test is to assess students' strengths and weaknesses and identify areas that need improvement in learning. Diagnostic tests initially describe students' understanding of learning material [2]. This test usually involves a series of questions or assignments designed to measure students' knowledge in various related areas [3]. By collecting this initial data, teachers or educators can adapt learning methods and curricula to suit students' individual needs. The use of diagnostic tests helps to obtain more in-depth information about students' abilities, track their progress over time, and identify individual needs [4]. This test allows teachers to design appropriate and practical learning and provide interventions or support needed to help students achieve the expected level of ability. Diagnostic tests can be used at various levels of education, including elementary, middle and high schools [5]. These tests can be multiple choice, essay questions, practical assignments, or a combination of different assignments. The results of the diagnostic tests guide educators to plan effective learning according to student needs, including elementary school students.

Elementary school students need to have diagnostic tests done as an essential part of their educational process. Through diagnostic tests carried out in elementary schools, it is possible

to identify the Needs and Potential of Students. Diagnostic tests help identify students' strengths and weaknesses in various learning areas, such as mathematics, language, and science [6]. By knowing the abilities and potential of students in more depth, teachers can plan learning according to individual needs [7-8]. Diagnostic tests also help identify students with high potential in specific fields so they can be given opportunities for further development.

Diagnostic tests can also be used to adjust curriculum and teaching [9]. Diagnostic test results provide information to teachers about students' level of understanding related to the subject matter. Thus, the teacher can adjust the curriculum and teaching methods to suit students' level of understanding. This test allows for a more effective and relevant learning approach so students can be more involved and thrive in the learning process. Diagnostic tests can be used to plan Additional Interventions and support in the learning process [10-11]. Diagnostic tests help identify students who need additional intervention or support. Data from test results can be used to plan remedial or enrichment programs that suit students' individual needs. By providing special attention and proper support at an early stage, students stand a better chance of overcoming adversity and reaching their full potential.

Diagnostic tests can also be used to monitor progress and evaluate learning. Diagnostic tests can be used to monitor student progress over time [12]. By conducting periodic diagnostic tests, teachers can see student progress in the understanding and skills measured in the test. This test allows the teacher to evaluate the effectiveness of the learning methods and make necessary adjustments to ensure that students achieve the expected results. Diagnostic tests can also be used to improve communication with parents [13]. Diagnostic test results also provide parents valuable information about their child's abilities and progress [14-15]. This test helps establish effective communication between teachers and parents and allows them to work together to support the child's academic development. Parents can understand their child's strengths and weaknesses and assist in planning additional support at home. From this statement, implementing diagnostic tests benefits elementary school students.

However, based on the observations the researchers made in several elementary schools, it was stated that the middle school needed to carry out diagnostic tests. This test is due to the need for instruments to measure student learning styles. Therefore the need for efforts to develop this diagnostic test. However, before developing a diagnostic test, it is necessary to analyze the need for developing a diagnostic test for elementary school students. By conducting a needs analysis for developing diagnostic tests, educators can better understand their students and plan more effective, responsive, and individualized learning. This test will help improve the quality of education and ensure that every student gets the support that suits their needs. Therefore, this study aimed to determine the needs analysis for the development of diagnostic tests for elementary school students.

2 Method

This research is descriptive [32]. The research was conducted by conducting interviews and documentation [33]. Interviews were used to obtain information about the diagnostic test used by the teacher. The instrument used was an interview guide sheet. Meanwhile, documentation is used to obtain data about the diagnostic tests used by teachers. The instrument used is a

document assessment sheet. The data obtained were then analyzed using a qualitative descriptive analysis technique.

3 Result and discussion

Diagnostic tests are essential for teachers to carry out. By developing self-diagnostic tests, teachers can increase the relevance, flexibility, and accuracy in measuring student understanding. This diagnostic test allows for better learning customization and helps improve the overall quality of learning. To find out the needs analysis, the researcher conducted a needs analysis on developing a diagnostic test instrument. The results can be seen in the following figure.

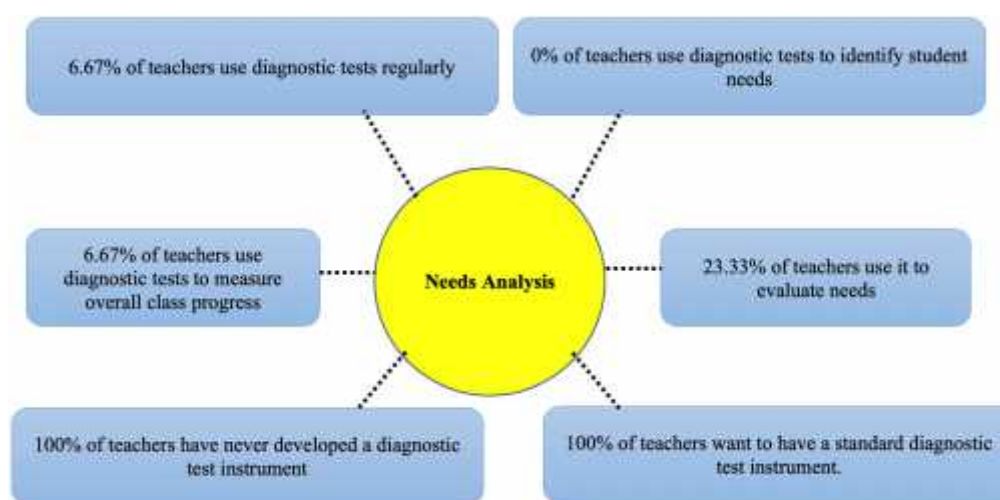


Fig 1. Results of Teacher Needs Analysis

From Figure 1, it can be seen that 6.67% of teachers use diagnostic tests regularly, 0% of teachers use diagnostic tests to identify student needs, 6.67% of teachers use diagnostic tests to measure class progress as a whole, 23.33% of teachers use it to evaluate needs, as many as 100% of teachers have never developed a diagnostic test instrument, and as many as 100% of teachers want to have a standard diagnostic test instrument.

Then the researcher documented the existing diagnostic test instruments. The documentation results show that the test material presented differs from efforts to determine student learning styles, only limited to measuring and evaluating student understanding. Then from the assessment aspect, it is also unsuitable for elementary school students because the instrument presented is in the form of long essay questions. This fact will have an impact on the subjectivity of the assessment. Essay scoring is more subjective than objective test scoring. The teacher or examiner carries out the assessment, and student answers interpretation may vary between raters. This connection can result in inconsistent scoring differences. Besides that, the low reliability of essay questions will also affect the level of chronic answers of students.

From the interviews and documentation, teachers still use a few diagnostic tests to identify student learning style needs and measure class progress. The existing test instruments are not following the characteristics of elementary school students. So from this, it was concluded that it was necessary to develop a diagnostic test for elementary school students.

Elementary school students are a significant group in the use of diagnostic tests. Diagnostic tests are specifically designed to gather information about the abilities and needs of individual students [16]. This test can help identify students' levels of understanding, strengths, and weaknesses in various subjects, including mathematics, Indonesian, science, and others [17]. By using diagnostic tests, teachers can get a clearer picture of students' abilities and levels of understanding towards learning materials [18-19]. This information is precious in teaching planning because the teacher can adjust the learning approach and the material delivered to suit students' needs and level of understanding. Teachers can identify gaps in student understanding, recognize difficulties encountered, and adapt effective learning methods and strategies [20-21]. Thus, teachers can design learning experiences that are more relevant and interesting and follow students' level of understanding. A clearer understanding of students' abilities through diagnostic tests also allows teachers to provide more appropriate support and guidance. Teachers can adjust assignments, provide additional assistance, or provide enrichment materials according to individual student needs [22-23]. This test aims to ensure that students can reach an optimal level of understanding and overcome any learning difficulties.

Diagnostic tests also help identify student weaknesses and difficulties in learning [24-25]. For example, if a student shows poor comprehension in mathematics, a diagnostic test can assist the teacher in identifying areas that need strengthening and providing appropriate interventions. By understanding the needs and potential of students, teachers can develop appropriate learning strategies to help students overcome learning difficulties and achieve better progress. Identifying students' weaknesses and difficulties through diagnostic tests is essential to prevent the accumulation of understanding gaps and ensure that students get the help they need early on. With the proper intervention, students have a greater chance to overcome their learning barriers and progress better. In this regard, diagnostic tests serve as an essential tool for teachers in detecting students' weaknesses and difficulties, directing their teaching, and providing the necessary assistance to ensure each student can learn successfully [26].

In addition, diagnostic tests can also help direct students' self-development programs [27]. Test results can provide information about a student's interests, talents or potential. This test can be used to develop extracurricular programs or career guidance according to students' interests and potential. Diagnostic tests can also assist in identifying students who have special needs or require additional support in learning [28]. By using diagnostic tests to guide students' self-development programs, schools can provide a more holistic approach to education. Diagnostic tests help reveal students' interests, aptitudes and potential that may not be apparent in regular learning contexts [29-30]. In this way, schools can develop programs that effectively use students' interests and potential, thus providing a more diverse and fulfilling learning experience for elementary school students.

By using diagnostic tests effectively, primary school students can experience significant benefits in their learning process. These tests help personalize students' learning experiences,

encourage optimal growth and development, and assist in identifying areas that need improvement [31]. As such, diagnostic tests are an essential tool in supporting effective learning and providing a deep understanding of the needs of primary school students. This fact is the basis for supporting the need to develop diagnostic tests for elementary school students.

4 Conclusion

This study states that it is necessary to develop diagnostic test instruments for elementary school students because teachers must still conduct diagnostic tests optimally. After all, the existing diagnostic tests still need to be more suitable for elementary school students. This proof is also supported by existing instruments that are only limited to instruments for learning evaluation.

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