



Analysis of students' difficulties in writing skills in English mathematics courses

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Abstract

This research aims to analyze the difficulties faced by students in developing their writing skills in the Mathematics English course. Through a qualitative approach, this research explores the factors that influence student difficulties, including language aspects and mathematical concepts. The research subjects taken were 5th semester mathematics education students. The data collection methods used were documentation methods, test methods, and observation methods. The documentation method was used to obtain data about the list of names of students who were used as research subjects. The test method is used to obtain data on student completion of English courses, the observation method is used to determine objective conditions during English teaching and learning activities and to determine factors that can influence the learning process. The location of students' difficulties in learning English lies in abilities including writing ability and listening ability. The difficulty of spelling errors is 30%, vocabulary errors are 40%, listening errors are 10%, and language errors are 20%. This shows that the level of student ability has a role in the student learning process and can be one of the factors that influence the level of student academic achievement.

Keywords: English, learning difficulties, students

Abstrak

Penelitian ini bertujuan untuk menganalisis kesulitan yang dihadapi mahasiswa dalam mengembangkan kemampuan menulis mereka dalam matakuliah Bahasa Inggris Matematika. Melalui pendekatan kualitatif, penelitian ini mengeksplorasi faktor-faktor yang memengaruhi kesulitan mahasiswa, termasuk aspek bahasa dan konsep matematika. Penelitian ini juga bertujuan agar kemampuan bahasa Inggris lebih baik dan proses perkuliahan lebih bermakna. Subjek penelitian yang diambil yaitu mahasiswa pendidikan matematika semester 5. Metode pengumpulan data yang digunakan adalah metode dokumentasi, metode tes, dan metode observasi. Metode dokumentasi digunakan untuk memperoleh data tentang daftar nama mahasiswa yang dijadikan subjek penelitian. Metode tes digunakan untuk memperoleh data penyelesaian mahasiswa pada mata kuliah bahasa Inggris, metode observasi digunakan untuk mengetahui kondisi objektif saat kegiatan belajar mengajar bahasa Inggris dan untuk mengetahui faktor-faktor yang dapat mempengaruhi proses pembelajaran. Letak kesulitan mahasiswa dalam belajar bahasa Inggris yaitu pada kemampuan antara lain kemampuan writing dan kemampuan listening. Kesulitan kesalahan ejaan 30%, kesalahan kosa kata 40%, kesalahan dalam mendengar 10%, dan kesalahan bahasa 20%. Hal ini menunjukkan bahwa tingkat kemampuan mahasiswa memiliki peran di dalam proses belajar mahasiswa dan dapat menjadi salah satu faktor yang mempengaruhi tingkat prestasi akademik mahasiswa.

Kata kunci: Bahasa Inggris, Kesulitan Belajar, Mahasiswa

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Introduction

Higher education is an important stage in students' academic and professional development (Behari-Leak, 2017). Many study programs, including mathematics education studies, the ability to communicate well in English is a very important aspect. International courses often use English as the language of instruction, and students are often required to express their ideas well in writing. However,

in reality, many students experience difficulties in their English writing skills, especially in mathematics subjects (Smith, 2020).

In the current era of globalization, the ability to communicate in English has become a necessity, even in non-verbal subjects such as mathematics (Qin, 2021). Students in the Mathematics Education study program often face assignments that require English writing skills, such as research reports, scientific articles, or presentations at international conferences. Even though students have a strong understanding of mathematics, they often struggle to express their ideas effectively in English (Molino, 2012). Apart from being an international language, English plays an important role in higher education, especially in broad subjects such as mathematics. Students studying mathematics are often faced with assignments written in English, such as essays, reports. However, many students face difficulties in mastering English writing skills, especially when faced with complex mathematical concepts (Inganah et al, 2023).

When conducting research, the first thing to pay attention to is the research object that will be studied. Where the research object contains a problem that will be used as research material to find a solution. According to Umar (2013) that the object of research is what and/or who is the object of research. Supriati (2015) also said that the definition of a research object is variables studied by researchers at the place where the research is conducted. From the definition above, it can be concluded that the object of research is a description of scientific targets that will be explained to obtain information and data with specific purposes and uses. The object of this research is mathematics education students' semester 5 Class 21f-A regarding mathematics English subject material. In this article, we will discuss some common difficulties students face, examine factors that may contribute to those difficulties, and provide suggestions that can help students overcome these challenges. Discussion of writing skills in English mathematics courses is not only a problem faced by students, but is also a focus for improving higher education that needs to be addressed comprehensively.

Learning difficulties can be interpreted as a condition in the learning process which is characterized by the presence of certain obstacles to achieving learning outcomes. These obstacles can be psychological, sociological or physiological in the entire learning process (Rahmawati, 2022). In general, learning difficulties can be classified into two groups: developmental learning difficulties are generally difficult for parents and educators to know, because there is no systematic measurement as is the case in the academic field, and academic learning difficulties. This failure includes mastering skills in reading and writing. Academic learning difficulties can be recognized by educators or parents when children fail to display one or several academic abilities (Allington, 1991).

The students' difficulties in learning English focused on the ability to speak and to listen. According to Ayu & Viora (2019), the factors contribute to the students' difficulties were: (1) the less of English practice; (2) the students were not actively participate in the learning process; (3) the students were passive; (4) The students did not take a note on the students' explanation; (5) the students were not active in responding the teachers' question and shares the opinion. To solve the problem of students' low ability to write English, it is necessary to apply appropriate learning models based on the material studied (Munir, 2018). By better understanding these issues, researcher hope to help students achieve greater academic success, open doors to international opportunities, and improve their abilities in Math English courses.

Method

In this research, the method used is a descriptive method, namely research that seeks to describe a symptom of an event or incident systematically and accurately regarding the characteristics of a particular population or area (Zuriyah, 2007). Qualitative research is research that intends to understand phenomena about what is experienced by research subjects, for example behavior, perceptions,

motivations, actions, holistically by means of descriptions in the form of words or language in a special natural context and by utilizing various natural methods (Moloeng, 2010).

The research subjects were 4-5th semester mathematics education students. To obtain data regarding the analysis of learning difficulties in the English Mathematics course, this research was conducted during the odd semester of the 2023/2024 academic year. Research location in the Mathematics Education Study program at Nahdlatul Ulama' Pasuruan University. The object of this research was the English mathematics course. Based on experience, the English mathematics course always gets unsatisfactory grades, and students have difficulty writing the English mathematics course, all because the English mathematics course is practical. The research variables that will be analyzed are the level of student difficulty in mastering are listening and writing.

This research was carried out in two stages, namely research preparation and data collection. So in general the data collection techniques in this research are: 1). Observation, 2). Documentation, and 3). Written test.

Result and Discussion

Based on the results of observations with subject 4 students from the mathematics education study program, it shows that they have difficulty writing in English mathematics courses, some students have not been able to master writing in English. Lack of writing practice in English is the main factor in difficulties in writing skills. The results of this study reflect significant challenges in integrating English with Mathematics, especially in writing skills. Grammar and spelling difficulties reflect the importance of developing better English language skills, which must be taken into account in this course. The use of technical Mathematics vocabulary in English is also an important focus, and teaching strategies that strengthen understanding of this vocabulary should be considered.

Based on the results of the analysis of students' difficulties in writing English mathematics, using listening and writing methods, it can be seen that each subject has different difficulties in the concept of working on this text. This is one of the causes of writing difficulties in English mathematics courses. Apart from that, learning that focuses more on how to formulate ideas and arguments effectively in the context of Mathematics in English is also needed. A learning approach is needed that supports students in overcoming these difficulties, perhaps through intensive practice and teaching that focuses on developing Mathematics writing skills in English.

Difficulties in learning are divided into difficulties related to development and difficulties in academic learning. Difficulties in academic learning are usually characterized by failures in achieving achievements that do not match the expected achievements, for example academic difficulties such as difficulties in reading, writing, calculating mathematics, and learning foreign languages. From a survey that was carried out through a video entitled integral mathematics using English, there are many who still have difficulty writing English. From this video, there is an illustration of the difficulties experienced by students in writing mathematical English. The results of students' difficulties in the English mathematics course, researchers drew conclusions through written tests and videos that we provided.

After the author understands and formulates the problem of writing difficulties experienced by students in English mathematics courses. The difficulties experienced by students include: (1) There are still many students who have difficulty mastering the 4 basic English language skills, namely listening and speaking skills, reading, and writing. It's not just difficult to master these 4 skills. However, students still have difficulty retaining the vocabulary of new words they learn, considering that many English vocabulary words are difficult to memorize and have several words that are similar but have different meanings. (2) Students' difficulties in placing punctuation marks are still not correct, this is one of the reasons they still have difficulty understanding English texts. (3) The lack of supporting media for learning mathematics English is a factor that hinders students in understanding mathematics

English learning. The following are the results of the student writing test ability table:

Table 1. Students' written test abilities.

Error Type	Percentage
Spelling Errors	30%
Vocabulary Errors	40%
Errors in Listening	10%
Language Errors	20%

Table 1 shows that there are several students who experience difficulties in writing English texts. This shows that the level of student ability has a role in the student learning process and can be one of the factors that influence the level of student academic achievement. Self-writing ability tests in the world of education can be used to find students who have potential and a high level of ability. Apart from that, the results of writing ability tests can also be used as a basis for exploring the causes of student failure (Daulay, 2016). From the quality of students' writing, there are still mistakes made, such as using vocabulary that is not appropriate to the context of the sentence and also the structure of the sentences they make is still not in accordance with the rules in writing English. Researchers made observations on students' writing results based on writing aspects and adjusted them to students' ability scores. The following is a sample of a text written by a student.

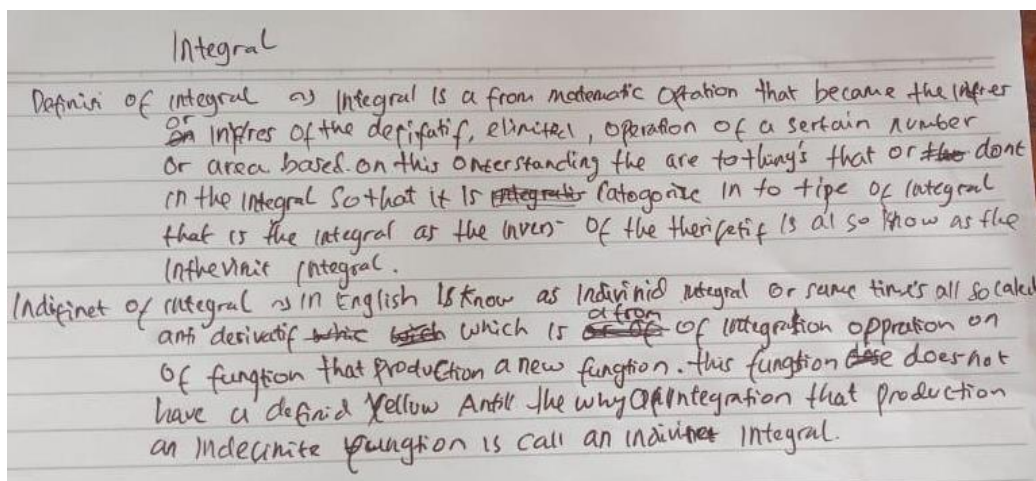


Figure 1. Student a written test

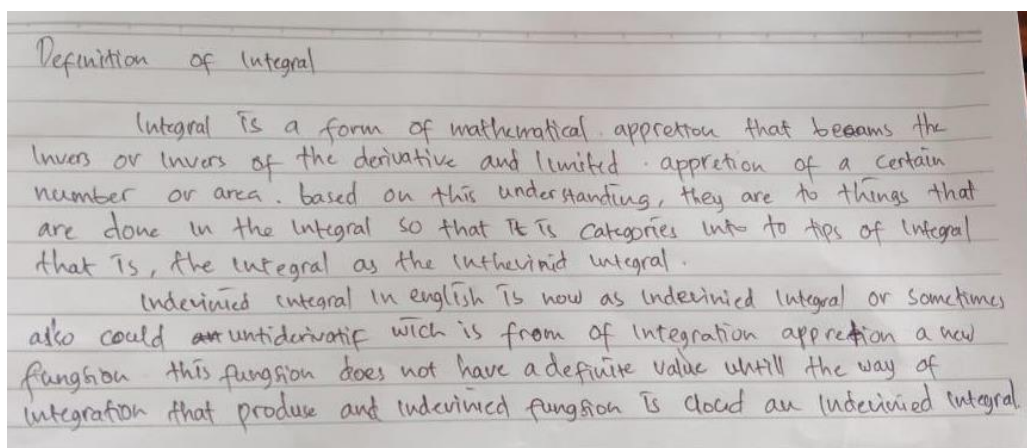


Figure 2. Student b written test

Figures 1 and 2 show that the results of the two written tests still have difficulty in using correct vocabulary or spelling. Students' ability to choose vocabulary plays a role in determining the results of the texts they write. Insufficient or inappropriate vocabulary used in a context will cause a misunderstanding of the information conveyed. From this it was found that some students still do not have the awareness to pay attention to the use of vocabulary and punctuation. Punctuation is a very important element in written communication because punctuation marks direct readers to understand the intonation of the sentences written by the author. In line with Stilman (2010) shows that many students have difficulty in using correct vocabulary or spelling, especially using grammar.

Conclusion

Conclusion, it showed that students experienced writing difficulties in English mathematics courses, especially in technical mathematics grammar, spelling and vocabulary. This study also highlights the need for learning approaches that focus on developing Mathematics writing skills in English and supporting students in overcoming these difficulties. This results research also includes a sample of text written by a student, which illustrates the difficulties students face in using correct vocabulary and punctuation in writing English. The results of writing ability tests can be used to trace the causes of student failure and identify students who have potential and a high level of ability.

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