ANALYZING ELEMENTARY STUDENTS' WRITTEN MATHEMATICAL COMMUNICATION IN SOLVING MATHEMATICS PROBLEMS IN CUBES AND CUBOIDS

Presented as Partial Fulfillment of the Requirements Obtain

Sarjana Pendidikan

Arranged by

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President University

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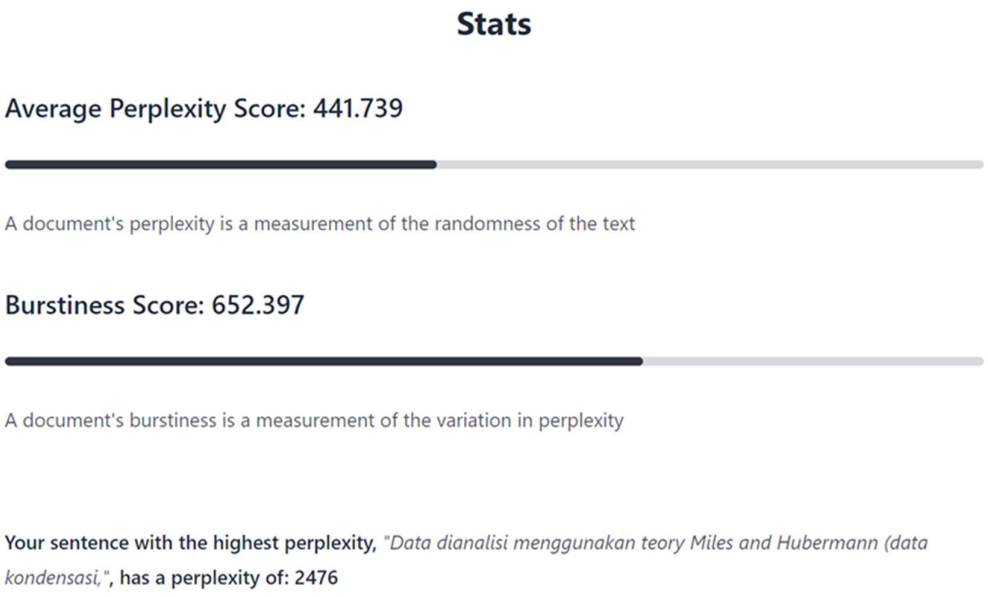

ABSTRACT

Written mathematical communication refers to expressing mathematical ideas through writing. This study aimed to analyze the written mathematical communication in solving mathematics problems and understand the characteristics of students' error in answering each question performed by fifth grade students of SD N 05 Puspanegara. This research used a qualitative approach with a descriptive qualitative method. This research used the purposive sampling technique, which involved 23 students. The data were collected through a test that contained three questions representing the third indicator of written mathematical communication. The data were analyzed through Miles and Hubermann theory (data condensation, data display, and drawing and verifying conclusion). The findings of the data pointed out that the students' written mathematical communication ability on cubes and cuboids in this study was not fulfilled to the fullest. The students' written mathematical communication ability in solving problems in cubes and cuboids was categorized into three categories: 81% for the first indicator (low), 33% for the second indicator (low), and 64% for the third indicator (medium). There were two areas that stood out as errors that students made in each question. In the first and second questions, there was an error in calculating the answer and providing the formula. In the third question, a lack of understanding of the concept instructed in the question was cited as an error. Therefore, it is important for teachers to improve the written mathematical ability with the appropriate teaching methods and identify the characteristics of the students' errors in answering questions so these terms can be used as evaluation for the next material.

Keywords: Written Mathematical Communication, Mathematics problems, Cubes and Cuboids

ABSTRAK

Komunikasi matematis tertulis mengarah pada bentuk mengekspresikan ide matematika melalui tulisan. Penelitian ini bertujuan untuk menganalisi komunikasi matematis tertulis dalam memecahkan persoalan matematika dan memahami karakteristik dari siswa dalam menjawab masing-masing pertanyaan pada siswa kelas 5 SD N 05 Puspanegara. Penelitian ini menggunakan pendekatan kualitatif dengan metode deskriptif kualitatif. Penelitian ini menggunakan teknik purposive sampling yang melibatkan 23 siswa. Data tikumpulkan melaluai tes yang berisi tiga pertanyaan dengan masing masing indicator komunikasi matematis tertulis. Data dianalisi menggunakan teory Miles and Hubermann (data kondensasi, display data, dan kesimpulan). Hasil dari penelitian ini menyoroti bahwa kemampuan komunikasi matematis siswa belum terpenuhi. Kemampuan komukasi matematis siswa dalam memecahkan masalah pada kubus dan balok memiliki tiga kategori yaitu: 81% untuk indicator pertama(tinggi), 33% untuk indikator kedua (rendah) dan 64% indikator ketiga (sedang). Ada dua area yang menjadi sorotan kesalahan/error yang siswa lakukan pada masing masing pertanyaan. Pada pertanyaan pertama dan kedua kesalahan yang terjadi berada pada penghitungan jawaban dan penyediaan rumus. Pada pertanyaan ketiga, kesalahan berada pada kurangnya pemahaman dalam konsep yang diinstruksikan di dalam soal. Maka dari itu, perlu untuk guru agar meningkatkan kemampuan komunikasi matematis siswa melalui metode pembelajaran yang sesuai dan mengidentifikasi karakteristik kesalahan siswa dalam mejawab pertanyaan agar dapat menjadi bahan evaluasi untuk materi selanjutnya.

Kata Kunci: Written Mathematical Communication, Mathematics problems, Cubes and Cuboids

DEDICATION PAGE

This study is wholeheartedly dedicated to our God Almighty who gave me the strength, patience and guidance to finish this study. A special feeling of gratitude to my loving parents who encouraged and inspired me in conducting this study. To my siblings and friends who give their outmost support, and never-ending inspirations. Thanks for making me see this adventure through the end. To the faculty and all staffs of the Elementary School Teacher Education (ETE) program and President University.

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TABLE OF CONTENT

PANEL OF EXAMINER APPROVAL ..... **i**
STATEMENT OF ORIGINALITY ..... **ii**
SCIENTIFIC PUBLICATION APPROVAL ..... **iii**
ADVISOR'S APPROVAL FOR PUBLICATION ..... **iv**
TOTAL SIMILARITIES FROM TURNITIN ..... **v**
TOTAL SIMILARITIES FROM GPTZero ..... **x**
ABSTRACT ..... **vii**
ABSTRAK ..... **viii**
DEDICATION PAGE ..... **ix**
AKNOWLEDGEMENT ..... **x**
TABLE OF CONTENT ..... **xi**
LIST OF TABLES ..... **xiii**
LIST OF FIGURES ..... **xiv**
LIST OF APPENDICES ..... **xv**
CHAPTER I INTRODUCTION **1**
1.1 Research Background **1**
1.2 Research Questions **4**
1.3 Research Significances **4**
1.4 Definition of Terms **5**
CHAPTER II LITERATURE REVIEW **7**
2.1 Theoretical Framework **7**
2.1.1 Mathematical Communication 7
2.1.2 Written Mathematical Communication 8
2.1.3 The importance of Written Mathematical Communication 9
2.1.4 Indicators of Written Mathematical Communication 10
2.1.5 Solving Mathematics Problems 10
2.2 Review of Previous Studies **12**
CHAPTER III RESEARCH METHODOLOGY **15**
3.1 Research Method **15**
3.2 Research Settings **15**

3.3 Research Participants **16**
3.4 Instrument and Data Gathering Technique **17**
3.5 Data Analysis Technique **19**
CHAPTER IV FINDINGS AND DISCUSSIONS **23**
4.1 Findings **23**
Point **24**
4.2 Discussion **25**
CHAPTER V CONCLUSIONS AND RECOMMENDATIONS **33**
5.1 Conclusions **33**
5.2 Recommendations **33**
REFERENCES **35**
APPENDICES **41**

LIST OF TABLES

Table 2. 1 Research comparisons 14
Table 3. 1 Research Plan Activity 16
Table 3. 2 The Grid of The Written Test 17
Table 3. 3 Scoring Guidelines 19
Table 3. 4 Category Level 19
Table 4. 1 Students' Points 24
Table 4. 2 The Characteristics of Students' Errors 29

LIST OF FIGURES

Figure 3. 1 Miles and Huberman Theory 20
Figure 4. 1 Sample of Student's Answer for Question 1 (high) 25
Figure 4. 2 Sample of Student's Answer for Question 2 (low)..... 26
Figure 4. 3 Sample of Student's Answer for Question 3 (medium) 27

LIST OF APPENDICES

Appendices 1. Attachments of mathematics test..... 41
Appendices 2. Class Documentation..... 42