

**DYSGRAPHIA IN THE LANGUAGE OF TWO CHILDREN OF THE
ENSOKO PRIMARY SCHOOL IN NYAMIRA COUNTY**

**A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTERS
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2013

DECLARATION

This thesis is my original work and has never been submitted to any other university

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DEDICATION

To God Almighty

For the everlasting love and strength

To my late parents Ibrahim and Josephine,

Though not there today to witness the fruits of your labour, your memories cannot fade
away you are still fresh in my mind.

To my husband Benson Osiemo,

Your care, support and immeasurable love made this work a success.

To my children Caleb, Joshua and Eglah,

You are wonderful gifts from God. In His hands I commit your lives.

To my dear brothers and sisters,

Thank you for being there for me.

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ABSTRACT

The study sought to identify and analyze the spelling impairment in the Kiswahili and English of two dysgraphic children of the Ensoko primary in Nyamira County. The study had hypothesized that the two dysgraphic children would produce more deletion errors than the other types of errors. It also hypothesized that the two dysgraphic children would misspell more verbs than the other word classes. Data were collected through three types of tasks: dictation, transcription and free composition. The findings of the study supported the first hypothesis.

It was evident from the findings that the two dysgraphic children produced more deletion errors in their performance than the other errors of substitution, omission, insertion, alteration and repetition. With regard to the second hypothesis, the findings indicated that the two dysgraphic children misspelt more verbs as compared to the other word classes of nouns, adjectives, adverbs, prepositions, pronouns, determiners and conjunctions. Misspellings of the other word classes were relatively few and in some cases they were not produced at all.

CHAPTER ONE: INTRODUCTION

1.1 Background to the study

1.1.1 Definition of terms

Dysgraphia is the inability to write. This inability comes as a result of lack of coordination in the brain on the skills of writing. Henry (2003:36) defines dysgraphia as “a specific learning disability that affects how easily children acquire written language and how well they use the written language to express their thoughts”. Field (2004:96) describes dysgraphia as “the loss or partial loss of the ability to write as a result of illness, accident or brain damage”. Meese (2001:63) defines dysgraphia as handwriting problems, specifically, a partial inability to remember how to make certain alphabet or arithmetic symbols.

1.1.2 Types of dysgraphia

There are two main types of dysgraphia: Developmental dysgraphia and acquired dysgraphia. Crystal (1997:274) points out that “the label ‘*acquired*’ distinguishes the handicap from the widely known developmental kinds of dysgraphia and dyslexia that occur in young children where there is no evidence of any brain damage”. Crystal (1997:277) ascertains that “there are several similarities between the symptoms presented by the two kinds of dysgraphia and dyslexia that is acquired and developmental which have led some scholars to argue that there is an underlying identity.

1.1.3 Acquired dysgraphia

Many authors have classified dysgraphia differently. Crystal (1997:274) points out that “dysgraphics have been classified into various types based on a detailed description of the kinds of errors made” Crystal identifies 3 kinds of acquired dysgraphia: phonological dysgraphia, deep dysgraphia and peripheral dysgraphia.

a) Phonological dysgraphia

Field (2004:96) says that “phonological dysgraphia is characterized by spelling disturbances in which the spelling of the unfamiliar words, phonetically irregular words is impaired. Field further says that people with this problem will have trouble in spelling non-words”.

b) Peripheral dysgraphia

Field (2004: 96) says that “in peripheral dysgraphia a person demonstrates spelling impairment of irregular words. He further explains that a person may be capable of writing letters well but fail to match graphemes in the given word”.

c) Deep dysgraphia

Field (2004: 96) points out that ‘deep dysgraphia is a disorder that demonstrates semantic errors. Field further explains that deep dysgraphia shows that there exists a disconnection between form and meaning. Crystal (1997:274) notes that “people with deep dysgraphia have no ability to spell words on phonetic basis. If one is asked to write a dictated nonsense word, for example it is often replaced by a real word that is similar in sound. He further says that spelling of words with concrete meaning is better than that of the abstract meaning.”

Developmental dysgraphia

In analyzing dysgraphia, Field (2004:96) notes that in developmental dysgraphia a child demonstrates delay in the acquisition of writing skills or shows signs of deviation from what is expected. Field further says that, a child becomes unable to develop an adequate graphophological system.

Crystal (1997: 275) highlights that “there are children who after a few years at school are consistently seen to fail at the tasks of reading, writing and spelling despite normal intelligence, instruction and opportunity to learn. Crystal further says that there is no medical or emotional reason to explain the discrepancy between their general intelligence and their level of achievement in handling written language”.

Dikowski (1994:56) notes that spelling ability of most dysgraphics is affected. Their grapheme selection is altered and at times it may seem that the person may have forgotten how to form certain letters. Dikowski further explains that “the wrong letter may be written which may appear as though they have forgotten how to spell. Sometimes students will even add unnecessary letters or write letters in an abnormal sequence when forming a word.

Ediger (2002:23) says that Dysgraphics demonstrate some trouble with mixing up letter formations. Ediger further points out that “recalling letter formations is hard for these students because there are so many instructions and rules that they get confused therefore having inconsistent spelling of words.

Crystal (1997:275) reports one case of dysgraphia where a person confesses her struggle with the condition:

It was easy to talk about what I had seen in the park, or sort out the ballet shoes, or put books away neatly according to size, but to decipher the alphabet, or recognize C.A.T and say what it spelt was almost impossible... when I was required to write a strange feeling came over me and I felt there was a long piece of string in my head.

This excerpt is from the autobiography of Susan Hampshire titled, 'Susan's Story'. By highlighting this experience, Crystal helps us to understand the plight that cases of dysgraphia go through. Susan could easily do everything else well, but she couldn't spell the word 'cat'. This tormented her and made her feel she was the most foolish girl since her colleagues in class found the word very simple. The present study focused on developmental dysgraphia on two dysgraphic children of the Ensoko Primary School in Nyamira County. The study was based on English and Kiswahili because these are the languages that the dysgraphics learn formerly in school.

Both subjects are in standard seven and it is interesting that they both demonstrate serious spelling disturbances in their written language. The first subject is Naom and she will be referred to as Naom throughout the study. The second subject is Elijah and he will be referred to as Elijah. Here are examples of the dysgraphics' written language in dictated sentences.

Table 1: Subject 1's written version to dictated sentences (Naom)

Sentence read	Written version
1) If you go out in the rain you will get wet	<i>if yo g aot the rain we wet</i>
2) We should boil water before drinking	<i>Wi shood boil water before we drinking.</i>

Example 1

a) If you go out in the rain you will get wet.

She wrote:

'if yo g aot the rain we wet'

b) We should boil water before drinking.

She wrote:

'Wi shood boil water before we drinking'

As seen in the above example, the subject produced errors of: omission, substitution and insertion. For example, she omitted the vowel letter 'u' in the word 'you'. The vowel letter 'o' was omitted in the word 'go'. The words 'in', 'you' and 'will' were left out as shown in example 1a. The letter 'I' was left out in the word "should" as shown in example 1b. The vowel letter 'o' was substituted with the vowel letter 'a' and the vowel letter 'u' was replaced by the vowel letter 'o' in the word 'out'. The vowel letter 'u' was substituted with the vowel letter 'o' in the word should. The word 'we' was inserted into the sentence.

Table 2: Subject 2's written version to dictated sentences(Elijah).

Sentence read	written version
a) The antelope escaped from the cave	<i>The athel eskeb from cav</i>
b) There was a good harvest this year so maize has become cheap	<i>The was good evensent in it yea maize would harm in cheap.</i>

Example 2

a) The antelope escaped from the cave

He wrote:

'The atheleskeb from cav'

b) There was a good harvest this year so maize has become cheap

He wrote:

'The was good evensent in it yea maize would harm in cheap'

In an attempt to produce the target sentence, the subject produced some errors of omission, substitution and insertion. The letters 'o' 'p' 'e' and 'n' were left out in the word 'entelope'. In the word 'cav,' the final letter 'e' was omitted and the letters 'e' and 'd' were also omitted in the word 'escaped' as shown in example 2a. The letters 'r' and 'e' were omitted in the word 'there'. The article 'a' and the word 'so' were left out in the sentence.

The letters 'c' and 'p' were replaced by the letters 'k' and 'b' in the word 'escape'. The words 'this' and 'has' were replaced by the words 'it' and 'good'. The

word harvest was replaced by a non-word '*evensent*' and the word '*become*' was substituted with a word '*harm*' as shown in example (2b) above. Some new words were created by the subject and they include; '*it*', '*would*,' '*harm*' and '*in*'. The word '*we*' was inserted into the sentence as shown in the example above.

1.2 Statement of the problem

It transpires from the preceding background that some word classes are more affected than others and some types of errors are more frequent than others. That is why the present study will focus on seeking answers to the following questions.

1.3 Research Questions

The study was guided by the following questions:-

- 1) What type of errors would the two dysgraphics misspell more than the others?
- 2) Which word class would the two dysgraphics misspell more than the other classes?

1.4 Objectives of the study

- 1) To find out whether the two dysgraphics produced more deletion errors than the other types of errors.
- 2) To find out if the two dysgraphics misspelt more verbs than the other word classes.

1.5 Hypotheses

- 1) The two dysgraphics will misspell function words more than the lexical items
- 2) The two dysgraphics will produce more deletion errors than the other types of errors.
- 3) The two dysgraphics will misspell verbs more than the other word classes.

1.6 Rationale of the study

The study was important in establishing the type of errors produced by the dysgraphics as this would help in drawing conclusions on the effects of dysgraphia. The study sought to help the society accommodate cases of dysgraphia especially where the child is perceived to be very intelligent. By discussing the difficulties the dysgraphics face in coping with academic tasks that require outlined instructions, this study would recommend better ways of making the affected children more beneficial in their lives.

The study also aimed at ensuring that proper mechanisms are put in place by stakeholders in the academic circles to identify and help the cases of dysgraphia at an early stage in school. Developmental dysgraphia which appears when the children are learning for the first time how to write can be corrected if the problem is identified early.

1.7 Scope and limitations

The present study was limited to the spelling impairment of the two dysgraphics. Specifically, it looked at errors of omission, substitution, alteration, insertion, deletion, repetition and addition. It also looked at the performance of the dysgraphics on function

words and lexical items. The dysgraphics' performance on word classes was also looked at.

1.8 Significance of the study

From the observations made, it is evident that dysgraphics in schools do not receive adequate attention in terms of remedial teaching and individual assessment. Some classrooms, devote very little time to the teaching and practise of writing skills. The dysgraphic children need ongoing, explicit instructions in spelling and composition and other relevant skills that interfere with their learning of written language.

Moats (2006:43) and Richards, R (1999) suggest that, children with severe writing problems can be helped to improve their skills through: direct teaching opportunities where the dysgraphics are given exercise to write each day and get constructive feedback from teachers and peers. They further argue that specific aspects of writing should be taught separately e.g. spelling, punctuation and capitalization. Dysgraphia can be corrected if the affected children receive adequate attention and remedial teaching early enough. The present study would significantly contribute to the field of psycholinguistics by practically evaluating language processing difficulties in the society.

1.9 Theoretical Framework

This study was guided by the psycholinguistic theory of language disorders and specifically, dysgraphia. Some of the language disorders include: aphasia, dyslexia, down syndrome, specific language impairment and dysgraphia. The theory was used to identify

and analyse the two dysgraphics' spelling impairment. Crystal (1999:274) suggests that language delay can be associated with some mental retardation or some illness but he further explains that there are children who are consistently seen to fail at tasks of reading and writing despite normal intelligence, instructions and opportunity to learn. The language delay in those children has no cause. Spoken language of these children may be normal but their written language may remain low. According to Crystal, there is often a story of language delay, but at the age of nine spoken language is apparently normal whereas written language may be at the level of 5 or 4 year old. The language ability of these children need to be investigated.

1.10 Literature Review

Dikowski (1994:57) quoting Orto (1937) studied children's visual-motor skills related to writing and spelling. He found out that the schools offered very little help to dysgraphic students. Dikowski found out that dysgraphics do not advance as quickly as other children. Dikowski reports a case where an action research was applied to improve the writing and spelling of dysgraphia. The action research applied drilling activities and the dysgraphic improved greatly.

Obler and Gjerlow (1999:110) quoting Frith (1985) propose a four stage process of acquiring reading and written language in which each stage builds on the previous one. In the first stage, the child develops logographic skills that are the abilities to recognize familiar words in their entirety. In the second stage, the alphabetical skills are acquired. The child learns to identify individual morphemes with individual letters. In the third stage, orthographic skills are acquired. Here, higher level clusters of letters that

ideally correspond to morphemes are identified. The three stages are very essential in language acquisition. They further say that if a child has difficulty with any particular stage, he or she may develop compensatory strategies, but will have problems with any sort of reading or writing in later stages.

According to Ediger (2002:47), for children with dysgraphia, handwriting is an extremely cumbersome and energy-draining activity. Their dysgraphia significantly impedes their ability to express ideas in written form. Written expression requires generation and organization of ideas, language formulation, and attention to mechanics (spelling, capitalization, punctuation). If handwriting is not highly automatic, the effort required to produce written output is completely overwhelming. Written content is sparse with minimal elaboration of ideas, and written expression is significantly disparate from oral expression without. Writing mechanics are also poor. Written work takes significantly more time than it does for the average student. Children with dysgraphia may begin to hate written assignments, and avoid or fail to complete written work.

Field (2004:96) ascertains that developmental dysgraphia is a language disorder caused by a delayed acquisition of writing skills and the development of writing which deviate significantly from the normal. He further says that in this case, a child at the age of nine is expected to legibly write certain letters and words. However, a child who is completely incapable of performing this task is taken as a special case and there need to be verification of his/her language ability. Field argues that normal writing acquisition proceeds through stages.

Hannel (2006:188) says that dysgraphia as well as other related disorders can have a genetic component. Hannel further says that a history of familial health and academic problem should be obtained. Hannel supports the idea of a comprehensive assessment to eliminate the condition and curb other similar conditions. He believes that professionals should be involved in the assessment process so as to provide prevention, remediation and support. Eide, et al. (2006:393) insists upon a thorough examination covering language, memory, attention, reading, writing and motor sensory functions. They insist on prenatal, birth and further health information and the current development of language activities and academic performance.

Research to date has shown that orthographic coding in working memory is related to handwriting. According to Milone (2007: 45) orthographic coding refers to the ability to store unfamiliar written words in working memory while the letters in the word are analyzed during word learning or the ability to create permanent memory of written words linked to their pronunciation and meaning. Milone (2007: 89) explains that children with dysgraphia do not have primary developmental motor disorder, another cause of poor handwriting, but they may have difficulty planning sequential finger movements such as the touching of the thumb to successive fingers on the same hand.

Troia (2008: 37) argues that children with impaired handwriting may also have attention-deficit disorder (ADHD) inattentive, hyperactive, or combined inattentive and hyperactive subtypes. Children with this kind of dysgraphia may respond to a combination of explicit handwriting instruction plus stimulant medication, but

appropriate diagnosis of ADHD by a qualified professional and monitoring of response to both instruction and medication are needed.

Dysgraphia is primarily understood to affect written language and the motor skills associated with the act of writing. Unlike other brain injuries, a person suffering from dysgraphia may have no trouble comprehending language beyond the fact that they are no longer capable of spontaneously writing. The following are major symptoms of dysgraphia, which may or may not be present depending on the specifics of a person's condition:

- poor or illegible handwriting
- impaired spelling
- impaired fine motor function present in fingers

Without diagnosis, children may not receive early intervention or specialized instruction in all the relevant skills that are interfering with their learning of written language. Considering that many schools do not have systematic instructional programs in handwriting and spelling, it is important to assess whether children need explicit, systematic instruction in handwriting and spelling in addition to word reading and decoding. As Moats (2006: 43) observed, many schools offer accommodations in testing and teaching to students with dysgraphia, but these students also need ongoing, explicit instruction in handwriting, spelling, and composition. It is also important to determine if a child with dysgraphia may also have dyslexia and require special help with reading or OWL LD (SLI) and need special help with oral as well as written language.

Treatment for dysgraphia varies and may include treatment for motor disorders to help control writing movements. The use of educational therapy can be effective in the classroom as long as teachers are well informed about dysgraphia. Other treatments may address impaired memory or other neurological problems. According to Troia (2008:53), some physicians recommend that individuals with dysgraphia use computers to avoid the problems of handwriting. Dysgraphia can be overcome with appropriate and conscious effort and training. The International Dyslexia Association suggests the use of kinesthetic memory through early training by having the child over learn how to write letters and to later practice writing with their eyes closed or averted to reinforce the feel of the letters being written. They also suggest teaching the students cursive writing as it has fewer reversible letters and can help lessen spacing problems, at least within words, because cursive letters are generally attached within a word.

It is suggested that students with dysgraphia receive specialized instructions that are appropriate for them; this means that each set of instructions may be different for each child. Children will mostly benefit from explicit and comprehensive instructions, help translating across multiple levels of language, and review and revision of assignments or writing methods. Direct, explicit instruction on letter formation and guided practice will help students achieve automatic handwriting performance before they use letters to write words, phrases, and sentences. Some older children may benefit from the use of a personal computer, or a laptop in class so that they do not have to deal with the frustration of falling behind their peers.

Berninger (2009:38) notes, that teachers with dysgraphic students decide if their focus will be on manuscript writing (printing), or keyboarding. In either case, it is beneficial that students are taught how to read cursive writing as it is used daily in classrooms by teachers. It may also be beneficial for the teacher to come up with other methods of assessing a child's knowledge other than written tests, an example would be oral testing. This causes less frustration for the child as they are able to get their knowledge across to the teacher without worrying how to write their thoughts.

According to Berninger (2009:83), the number of students with dysgraphia may increase from 4 percent of students in primary grades, due to the overall difficulty of handwriting, and up to 20 percent in middle school because written compositions become more complex. With this in mind, there are no exact numbers of how many individuals have dysgraphia due to its difficulty to diagnose.

1.11 Research Methodology

In this section, the presentation of the subjects, the procedure followed in data collection and the techniques used in data analysis was outlined.

1.11.1 The subjects

The study focused on two dysgraphic children of the Ensoko primary school in Nyamira County. Both subjects are in class seven and they are formerly learning English and Kiswahili. Naom, the first subject is 16 years old and she is the last born in a family of six siblings. She is fluent in her first language and very active in all other activities.

Elijah, the second subject is 17 years old and he is the third born in a family of seven siblings. He too is very fluent in his first language, Ekegusii, He is jovial and talkative despite having grave linguistic challenges. Elijah was considered dysgraphic because from the first test given to him on dictation of English sentences, his performance was very poor. He managed to score 40% and 60% of the words were wrongly written.

1.11.2 Data collection, instruments and procedure

After discussing comprehensively with the head teacher of Ensoko Primary in the possibility of carrying out a study on language aspects, permission required was granted to acquire all the necessary information and support from the pupils under study and any other person who deemed vital. The pupils under study were taken to a special room where we engaged in a general talk for familiarization and creating confidence with the subjects. The subjects were asked a few questions about their families and their general performance in school. After creating a friendly environment with the subjects, the questionnaire was administered.

Three types of tasks were designed to collect the data from the two dysgraphics. The tasks aimed at evaluating the writing abilities of the two subjects under study. The tests given were meant to detect the spelling impairment of the two subjects. The tasks comprised dictation, transcription and free composition. The tasks given to the subject took three phases. This was because the subjects took a lot of time to accomplish the work given and the researcher never wanted to interfere with the school routine. In the first test, the subjects were given a dictation test in both English and Kiswahili sentences.

A transcription of an English extract was administered in the second test and in the last test the dysgraphics were asked to write a free composition. A summary of the errors produced by the two dysgraphics were tabulated, rated and a brief description given.

CHAPTER TWO: DYSGRAPHIC SUBJECT 1'S PERFORMANCE

This chapter presents the results and the analysis of the words produced by the first subject, Naom. It reports on her performance on dictated sentences in both English and Kiswahili, dictated words in Kiswahili, and her transcription of a text in English. It also analyses her written production from a free composition on 'the importance of a cow'.

2.1 Dictation test in English

Table 3: Subject 1's writing of selected sentences in English

The sentence read	The subject's written version
I go to church every Saturday.	a go to church every Sunday.
The ball is on the table.	the boll ni the chair.
I wake up at six o'clock.	A wek ap six oclock.
There are seven days in a week.	the are seven day in week.
We must wash our clothes.	we mast was your clothes.
My father is a farmer.	my father si a farmar.

Table 4: Subject 1's general performance on dictated sentences in English

Words	Proportion	Percentage
Correct words	17	48.6%
Misspellings	18	51.4%
Total	35	100%

The above table shows that 48.6% of the total words were correct and 51.4% were misspelt by the subject.

Table 5: Subject 1's misspellings by word classes

Word class	Total words	Misspellings	Proportion of misspellings	%
Nouns	Saturday, church, ball, table, six, days, o'clock, seven, week, clothes, father, farmer	boll, chair, oclock, farmar, day, Sunday	6/12	50
Verbs	go, is, wake, are, must, wash, is	is, wek, mast, was, si	5/7	71
Pronouns	I, I, we, our, my, there	a, your, a, the	4/6	67
Prepositions	To, on, up, at, in	ap, in	2/5	40
Articles	the, the, a, a	The	1/4	25
Other Determiners	Every		0/1	0
Total			18/35	51

The above table shows that the subject misspelt 71% of the verbs, 67% of the pronouns 50% of the nouns, 40% of the prepositions, and 25% of the articles.

The errors produced by the subject were classified into: omission errors, alteration errors, and substitution errors as shown in table 6 below.

Table 6: Subject 1's misspellings by type of error (dictated English sentences)

Type of error	Misspellings	Total errors	Percentage
Omission	is, wek, day, at, the, a, was	7/18	39%
Substitution	a, chair, Sunday, your, a, boll, mast, farmar, ap	9/18	50%
Alteration	Si, ni	2/18	11%

Observations made from table (6) show that the subject produced 50% substitution errors, 39% omission errors, and 11% alteration errors.

2.1.1 Omission errors

Omission errors are characterized by the absence of an item that must appear in a well formed word or sentence. Omission of letters and words were evident in the subject's performance as shown in the following example.

Example 3

a) The ball is on the table.

She wrote:

'the boll ni the chair.'

b) There are seven days in a week.

She wrote:

'the are seven day in wek.'

While writing the word *'there'*, the subject left out the letters *'r'* and *'e'* and wrote *'the'* instead. She also omitted the letter *'s'* in the word *'days'* and the vowel letter *'e'* in the word *'week'*. The words *'at'* and *'is'* were omitted in the third and second sentence respectively. The article *'a'* was also left out as shown in sentence (4).

2.1.2 Substitution errors

From the subject's response, quite a number of substitution errors were produced. She replaced individual letters with related ones and words with semantically related ones. For example in sentence (2), she wrote *'chair'* instead of the word *'table'*. The produced word *'chair'* is semantically related to the word *'table'* because they both refer to furniture. The subject replaced the pronoun *'I'* by the article *'a'* in sentence (1) and (3). She also replaced the word *'Saturday'* by *'Sunday'* as shown in sentence (1). Another substitution error was noted in sentence (5) where the subject was required to write the word *'our'*, but instead she produced the word *'your'*, which has a different meaning. In writing the word *'must'*, she replaced the vowel letter *'u'* by the vowel letter *'a'*. The same problem was noted in writing the word *'up'* where she wrote *'ap'*.

The subject tends to replace the vowel letter *'u'* by the vowel letter *'a'* and she also seems to substitute the pronoun *'I'* by the article *'a'*

2.1.3 Alteration Errors

The results indicated that only two items had alteration errors. In an attempt to write the word *'is'*, the subject altered the letters and wrote *'si'* hence rendering the target word incorrect. The letters were also altered in the word *'in'* and produced *'ni'* instead.

Table 7: Subject 1's performance on content words versus function words

Type	Number of misspellings	Percentage
Lexical words	8/15	53%
Function words	9/20	45%

The above table shows that the subject produced more errors in lexical words than the function words.

2.2 Dictation test in Kiswahili individual words

Table 8: Subject 1's writing of individual Kiswahili words

Word read	Written version	Gloss
<i>Meza</i>	<i>Meiza</i>	Table
<i>Mlango</i>	<i>Mlango</i>	Door
<i>Samaki</i>	<i>Samak</i>	Fish
<i>Koti</i>	<i>Kiti</i>	Coat
<i>Sema</i>	<i>Seima</i>	Say
<i>Uzuri</i>	<i>Usuli</i>	Goodness
<i>Urefu</i>	<i>Ureifufu</i>	Tallness
<i>Kitabu</i>	<i>Kitabu</i>	Book
<i>Uyoga</i>	<i>Uyoga</i>	Mushroom
<i>Urembo</i>	<i>Uleimbo</i>	Beauty

Table 9: Subject 1's misspellings by type of error (dictated words in Kiswahili)

Type of Errors	Misspellings	Total misspellings	Proportion of misspellings
Insertion	<i>Meiza, seima, uleifu, uleimbo</i>	4/9	44.4%
Omission	<i>Samak</i>	1/9	11.1%
New word	<i>Kiti</i>	1/9	11.1%
Substitution	<i>Uleimbo, usuli, uleifu</i>	3/9	33.4%
Total		9	100%

From the above table it is evident that the subject produced 44.4% insertion errors, 33.4% substitution errors, 11.1% new words and 11.1% omission errors.

2.2.1 Insertion Errors

Insertion errors were apparent in the subject's written version as shown in the above table. In writing the word '*meza*', she inserted the vowel letter '*i*' hence producing an incorrect word '*meiza*'. The vowel letter '*i*' was inserted into the word '*sema*'. When writing the word '*urefu*', she wrote '*uleifu*' inserting the same vowel letter '*i*' after the vowel letter '*e*'. Insertion of the same vowel letter '*i*' was evident in the word '*urembo*' where she wrote '*uleimbo*'. The subject seems to insert the vowel letter '*i*' into a word after the vowel letter '*e*'.

2.2.2 Substitution errors

Substitution errors were evident in a few cases. When writing the word '*urefu*' she replaced the letter '*r*' by the letter '*l*' and produced '*uleifu*' hence rendering the word incorrect from the target word. Another substitution error was seen in the word '*urembo*', in which case she wrote '*uleimbo*'. The respondent substituted the same letter '*r*' with the letter '*l*'. She also replaced letter '*z*' by the letter '*s*' and the letter '*r*' by '*l*' in the word '*uzuri*' thus producing the word '*usuli*' which is incoherent to the stimulus word.

2.2.3 Omission Error

Letter omission was evident in only one item, where the final vowel letter '*i*' in the word '*samaki*' was left out.

2.2.4 Creation of new a word

When required to write the word 'koti', the subject wrote 'kiti' which is a correct Kiswahili word but with a different meaning from the targeted one.

From the observation made, the subject produced more insertion errors in Kiswahili individual words than the other types of errors.

Table 10: Subject 1's performance on abstract nouns versus concrete nouns

Type of noun	Read word	Misspelt word	Proportion	Percentage
Abstract	<i>Sema, uzuri, urefu, urembo</i>	<i>Seima, usuli, uleifu, uleimbo</i>	4/4	100%
Concrete	<i>Mlango, samaki, koti, kitabu, uyoga, meza</i>	<i>Keti, meiza, samak</i>	3/6	50%

As shown in the table above, the subject seems to have a problem with abstract nouns as opposed to concrete nouns which is a common challenge to most dysgraphics. Of the four abstract words tested, she did not write even one abstract word correct but she managed to write three concrete words correct out of the six tested.

2.3 Dictated sentences in Kiswahili

Table 11: Subject 1's performance on dictated sentences in Kiswahili

Read sentence	Subject's written version	Gloss
<i>Maria alilala mapema.</i>	<i>Maria alilala mabema</i>	Maria slept early.
<i>Kaka anasoma kwa bidii</i>	<i>Kaka anasoma kwa bidii</i>	My brother is studying hard.
<i>Mimi nilizuru mji wa Nakuru wakati wa siku kuu.</i>	<i>Mimi ni suru mchi wa nakuru wakati wa sikuku</i>	I visited Nakuru town during Christmas.
<i>Wao wanafinyanga vyungu.</i>	<i>Wao wanafiyanga fiu</i>	They are modelling pots.
<i>Sebule ni chumba cha mazungumzo.</i>	<i>Seibure chumba cha masunguso</i>	The living room is a place for discussion.
<i>Juu ya meza kuna zulia, vikombe na birika.</i>	<i>Chuya meza suria vikombe birika</i>	On top of the table there is a carpet, cups and a kettle.
<i>Fisi alianguka ndani ya shimo.</i>	<i>Fisi alianguka ndani yashimo</i>	The hyena fell into a ditch
<i>Vitabu vimewekwa kwenye rafu .</i>	<i>Vitabu vimeyekwa kwenyerafu</i>	The books are put on the shelf.
<i>Watoto watatazama runinga.</i>	<i>Wtoto watama humika</i>	The children will watch television
<i>Shambani kuna viazi vingi</i>	<i>Shambani kuna viazi vingi</i>	In the garden there are a lot of potatoes.

Table 12: Subject 1's misspellings by word class in Kiswahili dictated sentences

Word class	Total words	Misspellings	proportion	percentage
Noun	<i>Maria, kaka, nakuru, vyungu, sebule, chumba, meza, masungumzo, kaka, shimo, zuria, fisi, kitabu, watoto, bilikashambani, vikombe. Siku, mji, rafu, runinga. Bidii, viazi,</i>	<i>Mchi, fiu, seibure, masungumso, suria, wtoto, humika, sikuku</i>	8/23	35 %
Verb	<i>Alilala. Anasoma, nilishuru, wanafinyanga, vimewekwa, watatazama, sema, kuna, alianguka, ni</i>	<i>nisuru, ni, vimeyekwa, wanafiyanya, watama</i>	5/10	50%
Adjective	<i>vingi, kuu</i>	<i>Ku</i>	1/2	50%
Conjunction	<i>Wa, wa, na, ya, ya,</i>	<i>ya, na,</i>	2/5	40%
Preposition	<i>Kwa, cha, juu, ndani, kwenye</i>	<i>Chu, kweiye,</i>	2/5	40%
Adverbs	<i>Mapema</i>	<i>Mabema</i>	1/1	100%
Pronoun	<i>Mimi, wao</i>		0/2	0%
Total			19/48	40%

The above table shows that the subject misspelt 50% of the verbs, 50% of the adjectives, 40% of the prepositions, 40% of the conjunctions, and 35% of the nouns.

Table 13: Subject 1's misspellings among content words in Kiswahili sentences

Word class	Total words	Misspellings	Proportion	%
Nouns	<i>Maria, kaka, nakuru, vyungu, sebule, chumba, meza, kaka, masungumzo, shimo, zuria, fisi, kitabu, watoto, bilikashambani, vikombe. Siku, mji, rafu, runinga. Bidii, viazi,</i>	<i>Mchi, fiu, seibure, masungumso, suria, wtoto, humika, sikuku</i>	8/23	31
Verbs	<i>Alilala. Anasoma, nilishuru, wanafinyanga, vimewekwa, watatazama, sema, alianguka,</i>	<i>nisuru, vimeyekwa, wanafiyanga, watama</i>	4/7	57
Adjectives	<i>vingi, kuu</i>	<i>Ku</i>	1/2	50
Adverbs	<i>Mapema</i>	<i>Mabema</i>	1/1	100
Total			14/33	42

Table 14: Subject 1's misspellings among function words in Kiswahili sentences

Class	Word	Misspellings	Proportion	Percentage (%)
Pronouns	<i>Mimi, wao</i>		0/2	0
Prepositions	<i>Kwa, cha, ndani, juu, kwenye</i>	<i>Chuu, ya, kwenye</i>	3/5	60
Conjunctions	<i>Wa, wa, ya, ya, na</i>	<i>Na, ya, ya</i>	3/5	60
Auxiliary verbs	<i>Kuna, kuna, ni</i>	<i>Ni</i>	1/3	33
Total			7/15	

Table 15: subject 1's performance on content words versus function words

Class	Proportion	Percentage (%)
Lexical words	14/33	42
Function words	7/15	47

From the above table, it is evident that the subject produced more errors in function words than lexical items. The subject's errors were classified into: substitution errors, omission errors, addition errors and non-words.

Table 16: Subject 1's misspellings by type of error (dictated sentences in Kiswahili)

Type of error	Misspellings	Proportion	Percentage (%)
Omission	<i>Nin suru, manfiyanga, wtoto, watama, ya, kuna, ni, na, kuu</i>	9/19	47
Substitution	<i>Mabema, mchi, masungumuzo, chuya, suria, vimeyekwa, humika</i>	7/19	37
Addition	<i>Sikuku,</i>	1/19	5
Non-word	<i>Fiu, seibure</i>	2/19	10
Total		19	100

From the table above the subject produced 47% omission errors, 37% substitution errors, 10% Non Kiswahili words, and 5% addition errors.

2.3.1 Substitution errors

Quite a number of substitution errors were produced by the subject in her written version as shown in the examples that follow.

Example: 4

Mimi nilizuru mji wa Nakuru wakati wa siku kuu.

The subject wrote:

'Mimi nisuru mchi wa nakuru sikuku.'

Example: 5

Sebule ni chumba cha mazungumzo.

The subject wrote:

'Seibure chumba cha masungumuso.'

In example (4), the subject substituted the letter 'z' by letter 's' and the letter 'r' by the letter 'l' in the word, 'nilizuru'. She also substituted the letters 'ch' with the letter 'j' in the word 'mji'. In the first sentence, the subject substituted the letter 'p' with the letter 'b,' when she was required to write the word 'mapema' and instead she wrote 'mabema'. Another error of substitution is evident in the fifth example, where the letter 'z' was substituted with the letter 's' in the word 'mazungumzo'. In the word 'rafu', the letter 'r' was substituted with the letter 'l,' thus producing the word 'lafu'. From the observations made, the subject seems to replace the letters 'z' by 's' and 'r' by 'l' though she is not consistent. Probably this could be attributed to mother tongue influence.

2.3.2 Omission Errors

Errors of omission were noted in the following example.

Example: 6

a) *Nilizuru mji wa Nakuru wakati wa siku kuu.*

The subject wrote:

'Mimi nisuru mchi wa nakuru wakati wa sikuku.'

b) *Sebule ni chumba cha mazungumzo.*

The subject wrote:

'Seibure chumba cha masungumuso.'

c) *Juu ya meza kuna zulia, vikombe na birika.*

The subject wrote:

'Chuya meza suria, vikombe birika.'

From the above examples, it is apparent that some words were omitted in the subject's response. In example (6a) she omitted the word '*kuna*'. The word '*ni*' was omitted in sentence (5) as shown in example (6b) and the word '*na*' was also omitted as shown in (6c). Apart from omission of words, the subject also omitted several letters from words hence rendering the words formed incorrect. For example, when writing the word '*nilizuru*', she omitted the letters '*li*' and wrote '*nisuru*'. Omission of letters was also evident in the words '*wanafinyanga*' and '*kwenye*' in which case the letter '*n*' was omitted. The letter '*a*' was omitted in the word '*watoto*' in sentence (9) and in the word '*watazama*', '*ta*' was omitted and she wrote '*watazama*' which is incorrect.

2.3.3 Non-Kiswahili words

Observations made from table (16) show that the subject produced two words which do not exist in Kiswahili language. When writing the word ‘*vyungu*’, the subject wrote ‘*fiu*’ and instead of the word ‘*sebule*’, she wrote ‘*seibure*’.

2.4 Transcribed Extract in English

Table 17: Subject 1’s misspellings in the transcribed English extract

Transcribed words	Subject 1’s written version
There is a man dancing with a huge snake around his neck”, said a lady who had come from the crowd. Just then, there was a loud cheer from the crowd and many more people started running to see what was happening. “Let’s go and watch”, said Njogu and he started to run across the road. Suddenly a car appeared around a bend.	Thre is a man dacing with a husnak round is neck sed a rady who had come from the cloud. Just then, there were a loud cheer from the crowd ande many mor people statdruning to saw what was happened. lets go and wacth, said Njogu and he stated too arcross the head. Suddenry a car abpearedi around a bendi.

As shown in the table above, it is evident that the subject made a number of errors in producing the extract. The errors produced were categorized into: deletion errors, addition errors, substitution errors, alteration errors, and creation of new words.

Table 18: Subject 1's misspellings in the transcribed extract

Errors	Misspellings	Total errors	Percentage (%)
Addition	ande, bendi	2	7.7
Alteration	pepole, wacth, arcos, saw	3	11.5
Deletion	snak, hu, mor, statd, runing, lets, is, ""', run, "", dacing, thre, round, ""	11	42.3
Substitution	abpeardi, suddenry, rady,	4	15.4
New words	cloud, were, too, saw, happening, head, his	6	23.1
Total		26	100

From the above table, it shows that the subject produced 42.3% deletion errors, 23.1% new words, 15.4% substitution errors, 11.5% alteration errors and 7.7% addition errors.

2.4.1 Deletion errors

Deletion is a process that involves taking out a letter or a word in the process of phoneme-grapheme correspondence in written forms. It is evident that the subject deleted several letters from words, hence rendering the words produced incorrect. For instance, she wrote the word 'snake' as 'snak', deleting the final vowel letter 'e'. She also deleted the same vowel letter 'e' in the word 'move', which she wrote as 'mov' and the word 'started' was written as 'startd'. In the word 'around', she deleted the vowel letter 'a' and in the word 'dancing', the letter 'n' was deleted. She also deleted the letters 'g' and 'e' in the word 'huge' which was written as 'hu'. Apart from deletion of letters there were cases where the subject deleted whole words as in the following example.

Example: 7

‘..... he started to run across.....’

She wrote:

‘.....*he startd too arcross*....’

The word ‘run’ was deleted as shown in the above example. All punctuation marks were deleted, except for the fullstops. She seems to have a problem with the vowel letter ‘e’ because it is the letter which is mostly deleted.

2.4.2 Addition Errors

Addition errors were noted in the subject’s response as shown in table (18). She added the vowel letter ‘e’ to the word ‘and’ thus produced a non English word ‘ande’. The vowel letter ‘i’ was also added to the word ‘bend’ and she also added the vowel letter ‘o’ in the word ‘to’ hence producing the word ‘too’. This could be attributed to mother tongue influence, because all words in the subject’s first language end in vowels.

2.4.3 Substitution errors

Substitution errors were noted in the subject’s response. She replaced the letter ‘l’ by the letter ‘r’ in the word ‘suddenly’. When writing the word ‘appeared’ the letter ‘p’ was replaced by the letter ‘b’. Some words were replaced by related ones. For instance the word ‘was’ was replaced by the word ‘were’ and the word ‘see’ was replaced by the word ‘saw’.

2.4.4 Alteration errors

This type of error is characterized by changing the sequence of letters in a word, thus changing the structure and the meaning of the word. Alteration errors were noted in

the subject's written version as shown in table (18). For example she wrote '*pepole*' instead of the word '*people*'. The same error was noted in the word '*across*' which she wrote as '*arcoss*'. The word '*watch*' was also written as '*wacth*'.

2.4.5 New words

The data contained in table (18) shows that quite a number of new items were created by the subject. These words came as a result of either deletion or substitution of some letters. For instance, the word '*cloud*' was written instead of '*crowd*' and '*saw*' instead '*see*'. In writing the word '*to*', the subject wrote '*too*'. The words '*were*' and '*happening*' were produced instead of '*was*' and '*happened*' respectively.

Table 19: Subject 1's performance among content words (transcribed extract in English)

Class	Misspellings	Proportion	Percentage
Nouns	Boll, chair, farmar, day, Sunday, bendi, people, snak, rady	3/12	25%
Verbs	Wacth, startd, runing, sed, saw, run, abpeardi, wek, was, lets	9/14	64%
Adjectives	Hu, mo	2/3	67%
	Suddenry	1/3	33%
Total		15/32	47%

Table 20: Subject 1's Performance among function words (transcribed extract in English)

Class	Misspellings	Proportion	Percentage
Pronouns	His, he	2/3	67%
Conjunctions	and, ande	2/3	67%
Auxiliary verbs	nad, was, was	$\frac{3}{4}$	75%
Articles	a, a, a, a	4/8	50%
Other articles		1/1	100%
Total		11/19	58%

Table 21: Subject 1's performance on content words versus function words

Type	Number of misspellings	Percentage
Lexical words	15/32	47%
Function words	11/19	58%

From the above table, it shows that, the subject produced more errors on function items than lexical words.

2.5 Subject 1's free composition

Our cow are called maritati, it give us milk for drink, we liked our cows, it is a maritati in color, it has a big with a nyeri big father tells mother to milk the cow in the moning an in the evening in a chag milk. It fill milks. You sell make besa buy shoe for and brotaa with mine. We cow in out outside home we bring saka for cow eat to milk cow maritati stomach are upup full so milk is big. Maritati is cows that we likes ever day. I put milk in mouth and fall into stomach maked me ran to skool and plays onyuro with Jak and glace. We are full goo. Cow imporatance milk is our cow

A number of errors were noted in the subject's free composition. These errors can be grouped into: omission errors, addition errors, substitution errors and creation of new words.

Table 22: Subject 1's performance on the free composition

Type of Error	Misspellings	Proportion	Percentage (%)
Omission	gives, drinking, morning, and, (in the), to, shoes, my, the, a, good	12	30
Addition	Liked, cows, a with, a, big, milks, likes, maked, plays, imporantance	11	27
Substitution	Are, we, brotaa, with mine and I big, full	9	22
Non-word	Maritati, maritati, nyeri, besa, saka, skool, chag, onyuro	8	20
Total		40	100

The above table shows that the subject produced 30% omission errors, 27% addition errors, 22% substitution errors and 20% non English words.

2.5.2 Omission errors

Omission of letters and words were evident in the subject's free composition. For instance, in the word '*morning*', the letter '*r*' was left out and probably, the subject intended to write the word '*and*' in which case the last letter '*d*' was omitted. The letter '*s*' was also omitted in the word '*shoes*'.

2.5.2 Addition Errors

In an attempt to write the word *'milk'*, the subject added the letter 's' hence producing the word *'milks'*. The same letter 's' was added to the words *'like'*, *'play'* and *'cow'* rendering the words incorrect according to their use in the sentence. She also added the letter 'd' to the words *'make'* and *'like'*.

2.5.3 Substitution Errors.

In the word *'brother'*, the letters 'e' and 'r' were replaced by the vowel letters 'aa'. The word *'is'*, was replaced by *'are'* given that she was talking about a single cow. The conjunction *'and'*, was replaced by the word *'with'*, as she wrote *'brotaa'* with mine. Presumably, the intended words *'...my brother and I'* were replaced by *'...and brother with mine'*.

2.5.1 Creation of non English words

Consider the following.

Example 8

- a) *'...to skool and plays enyuro...'*
- b) *'...you sell make besa.'*
- c) *...plays onyuro...*

In an attempt to write a free composition, the subject produced several non-words as shown in the above example. The words *'skool'* and *'onyuro'* were created. This could be attributed to mother tongue influence. Another non English word used by the subject was *'besa'*. The words *'saka'* and *'chag'* too have been produced by the subject. Other non-words used by the subject were *'maritati'* and *'saka'*. Maybe, all these come as a result of borrowing from the subject's first language.

CHAPTER THREE: SUBJECT 2'S PERFORMANCE

This chapter presents the analysis of the words produced by subject 2, Elijah. This is his performance on dictated sentences in English and Kiswahili, dictated individual words in Kiswahili and a transcribed text in English. It also analyses his own production from a free composition on 'the importance of a cow'.

3.1 Dictation test in English

Table 23: Subject 2's writing of selected sentences in English

The sentence read	The subject's written version
1. I go to church every Saturday.	1. we go to church every satanday.
2. The ball is on the table.	2. the boll si no the tebo.
3. I wake up at six o'clock.	3. e welk ap at six ocloock.
4. There are seven days in a week.	4. The ar seven days In a wek.
5. We must wash our clothes.	5. we mast woshe ye cloth.
6. My father is a farmer.	6. my father si a fama

Table 24: Subject 2's general performance on dictated sentences in English

Words	Proportion	Percentage (%)
Correct words	16	45.7
Misspellings	19	54.3
Total	35	100

From the above table, the subject misspelt 54.3% of the words, and 45.7% of the words were correctly spelt.

Table 25: Subject 2's misspellings by word classes

Word class	Total words	Misspellings	Proportion of misspellings	%
Nouns	Saturday, church, ball, table, six, days, o'clock, seven, week, clothes, father, farmer	boll, tebo, ocloock, fama, cloth, satanday	6/12	50
Verbs	go, is, wake, are, must, wash, is	si, welk, mast, woshe, ar, si	6/7	86
Pronouns	I, I, we, our, my, there	we, e, ye, the	4/6	67
Prepositions	To, on, up, at, in	no, ap, In	3/5	40
Articles	the, the, a, a		0/4	0
Other Determiners	Every		0/1	0
Total			19/35	51

The above table shows that the subject misspelt 60% of the total words tested. He misspelt 86% of the verbs, 67% of the pronouns, 53% of the nouns, and 40% of the prepositions.

Table 26: Subject 2's performance among content words (dictated sentences in English)

Type of word	Misspellings	Proportion	Percentage (%)
Nouns	boll, tebo, ocloock, fama, cloth, satanday	6/12	50
Verbs	welk, woshe	2/3	67
Total		8/15	53

Table 27: Subject 2's performance among function words(dictated sentences in English)

Type of word	Misspellings	Proportion	Percentage (%)
Pronouns	e, e, ye, the	4/6	67
Prepositions	no, ap, in	3/5	60
Auxiliary verbs	Si, mast, si, ar	4/4	100
Determiners		0/5	0
Total		11/20	55

Table 28: Subjects 2's Performance on Content words versus function words

Type	Number of Misspellings	Percentage
Lexical words	8/15	53
Function words	11/20	55

The above table shows that the subject produced more errors in function words than lexical words.

Several errors were noted in the subject's performance as shown in the table above. These errors were categorised into: omission errors, substitution errors, alteration errors, creation of new words and non English words.

Table 29: Subject 2's misspelling by type of error (dictated English sentences)

Type of error	Misspellings	Total errors	Percentage
Omission	The, ar, wek, cloth, fama, tebo	6/19	32
Substitution	We, e, ap, sartanday, mast, boll, woshe, ye, oclook, welk	10/19	53
Alteration	Si, si, no	3/19	15
Total		19	100

From the above table the subject produced 53% substitution errors, 32% omission errors, and 15% alteration errors.

3.1.1 Omission Errors

Consider the following example

Example 9

There are seven days in a week.

He wrote:

'The ar seven days in a wek'

In an attempt to write the word *'there'*, the subject omitted the letters *'r'* and *'e'* and wrote *'the'* instead. The vowel letter *'e'* was omitted in the words *'are'* and *'week'*. Another case of omission was noted in the word *'clothes'*, where he omitted the letters *'e'* and *'s'*. From the observation made, the vowel letter *'e'* seems to be problematic to the subject because it is the one that is left out in most cases.

3.1.2 Substitution Errors

Example 10

a) I go to church every Saturday

Written as:

'We go to church every satanday'.

b) I wake up at six o'clock,

Written as:

'e welk ap ta six ocloock'.

Substitution errors were noted in the subject's response. The subject substituted letters with related letters and words with related ones. The pronoun 'I', was replaced by the pronoun 'we' as in example (10a) and the same pronoun 'I' was replaced by the vowel letter 'e' in example (10b). The word 'our' was replaced by the archaic word 'ye', as shown in the fifth sentence. Substitution errors were also seen in the word 'Saturday', where the letters 'u' and 'r' were substituted with the vowel letter 'a' and the letter 'n'. The vowel letter 'u' was replaced by the vowel 'a' in the word 'must' and 'up'. The dysgraphic tends to replace the vowel letter 'u' by 'a'.

3.1.3 Alteration Errors

Example 11

a) The ball is on the table

Was written as

'the boll si no the tebo'

The above example (11) shows letter alteration in the words 'is' and 'on'. By altering the letters in the word 'is', the subject produced a non- word in English 'si'. In writing the word 'on', he altered the letters resulting to a real word 'no' in English. The same word 'is', was wrongly spelt by altering the letters as seen in the sixth sentence. Seemingly, the word 'is' is difficulty for the subject to master because he tends to alter the letters whenever he attempts to write it. Generally, the subject has a problem with function words.

3.2 Dictated sentences in Kiswahili

Table 30: Subject 2's writing of selected sentences in Kiswahili.

Read sentence	Subject's written version	Gloss
<i>Maria alilala mapema.</i>	<i>MaiA Ah lala mabema</i>	Maria slept early.
<i>Kaka anasoma kwa bidii.</i>	<i>Kaka anazuma kwa bedi</i>	My brother is studying hard.
<i>Mimi nilizuru mji wa Nakuru wakati wa siku kuu.</i>	<i>Mimi isuru mji wa nakuru</i>	I visited Nakuru town during Christmas.
<i>Wao wanafinyanga vyungu.</i>	<i>Wawo wanavyaga vigu</i>	They are modelling pots.
<i>Sebuleni chumba cha mazungumzo.</i>	<i>Zibureni juba cha masukumazogozo</i>	The living room is a place for discussion.
<i>Juu ya meza kuna zulia, vikombe na birika.</i>	<i>Chu mzaa suea meze kikombe</i>	On top of the table there is a carpet, cups and a kettle.
<i>Fisi alianguka ndani ya shimo.</i>	<i>Fsh aleakuka dani ya shemo</i>	The hyena fell into a ditch
<i>Vitabu vimewekwa kwenye rafu.</i>	<i>Vitabu vimeyekwa kweiye lafu</i>	The books are put on the shelf.
<i>Watoto watatazama runinga.</i>	<i>Watoto watazama runiga</i>	The children will watch television
<i>Shambani kuna viazi vingi</i>	<i>Shabani kuna viazi vigi</i>	In the garden there are a lot of Potatoes.

Errors produced were grouped into: omission errors, substitution errors, insertion errors, and non English words.

Table 31: Subject 2's misspellings by type of error (dictated sentences in Kiswahili).

Type of error	Misspellings	Proportion	Percentage
Omission	<i>MaiA, dani, birika, vigiruniga,, ya, na, kuna, shabani, wakatiwasikukuu,</i>	16/34	47
Substitution	<i>Mabema, lafu, shemo, ahilala, anazuma, surea, zebure, aliakuka, vimeyekwa</i>	9/34	29
Insertion	<i>Wawo</i>	1/34	3
Non-words	<i>Fsh, vigu, iresuru, mzaa, kweye, masukumazogo,bedi</i>	7/34	21
Total			100

From the above table the subject produced 47% omission errors, 29% substitution errors, 21% non-words and 3% insertion errors.

3.2.1 Substitution errors

The letter 'p' was substituted with 'b' in the word 'mapema', and the letter 'z' was replaced by 's' in the word 'zulia'. The letter 'j' was replaced by 'ch' in the word 'juu'. The letter 'r' was substituted with the letter 'l' in the word 'rafu' and the vowel letter 'i' was replaced by the vowel letter 'e' in the word 'shimo'. The letter 'l' was replaced by the letter 'h' in the word 'alilala', and the letters 's' and 'o' were replaced by the letters 'z' and 'u' in the word 'anasoma'. The letters 's' and 'l' were replaced by the letters 'z' and 'r' in the word 'sebule'. The vowel letter 'e' was replaced by the vowel letter 'i' in the same word 'sebule'. The letters 'n' and 'g' were replaced by the letter 'k' in the word 'alianguka'.

3.2.2 Omission Errors

The subject omitted several letters and even whole words in his written version. For instance, he wrote 'maiA' in the first sentence, thus, omitting the letter 'r'. He

omitted the words 'ya', 'na', 'kuna', and 'birika' in sentence (6). The letter 'n' was omitted in the words, 'ndani', 'vingi' and 'runinga'. The vowel letter 'a' was also omitted in the word 'watoto'. The words 'wakati', 'siku', and 'kuu' were also omitted in sentence (4). The letter 'm' was omitted in the word 'shambani' as indicated in sentence (10).

3.2.3 Non Kiswahili words

In an attempt to write the word 'fish', the subject wrote 'fsh' which is a non-word in Kiswahili. He also wrote 'bedi' instead of 'bidii' which does not exist in Kiswahili language. The subject also produced 'shemo' and 'mzaa' instead of 'shimo' and 'meza' which do not exist in Kiswahili language.

3.2.4 Insertion Errors

This type of error was not very common to the dysgraphic because it was noted in two items only. He inserted the letter 'w' to the word 'wao' and wrote 'wawo', and also inserted vowel letter 'a' to the word 'meza' and wrote 'mzaa'.

Table 32: Subject 2's misspellings by word classes in Kiswahili dictated sentences

Word class	Total words	Misspellings	Proportion of misspelling	%
Nouns	<i>Maria, kaka, nakuru, vyungu, sebule, chumba, meza, masungumzo, kaka, shimo, zuria, fisi, kitabu, watoto, bilika shambani, vikombe. Siku, mji, rafu, runinga. Bidii, viazi,</i>	<i>MaiAnakuruzibure, juba, masukumazogozo, mzaa, surea, meze, kikobe, fshi, runiga, shemo, lafu, vigu, bedi, birika</i>	18/23	78
Verbs	<i>Alilala. Anasoma, nilishuru, wanafinyanga, vimewekwa, watatazama, sema, kuna, alianguka, ni</i>	<i>Ali lala, anazuma, I suru, wanavyanga, vimeyekwa, watazama, ni</i>	7/10	70
Adjectives	<i>wingi, kuu</i>	<i>Ku, vigi</i>	2/2	100
Conjunctions	<i>Wa, wa, na, ya, ya,</i>	<i>ya, na,</i>	2/5	40
Prepositions	<i>Kwa, cha, juu, ndani, kwenye</i>	<i>Chu, dani, kweiye</i>	3/5	60
Adverbs	<i>Mapema</i>	<i>Mabema</i>	1/1	100
Pronouns	<i>Mimi, wao</i>	<i>Wawo</i>	1/2	50
Total			34/48	50

Table (32) above shows that the subject misspelt 78% of nouns, 70% of verbs, 60% of prepositions, 50% of pronouns and 40% of conjunctions.

Table 33: Subject 2's misspellings among content words in Kiswahili sentences

Word class	Total words	Misspellings	Proportion	%
Nouns	<i>Maria, kaka, Nakuru, vyungu, sebule, chumba, meza, kaka, mazungumzo, shimo, zulia, fisi, kitabu, watoto, birika, shambani, vikombe. Siku, mji, rafu, runinga. Bidii, viazi,</i>	MaiA na kuru zibure, juba, masukumazogozo, mzaa, surea, meze, kikobe, fshi, runiga, shemo, lafu, vigu, bedi, birika, juba, shabani	18/23	78
Verbs	<i>Alilala. Anasoma, nilizuru, wanafinyanga, vimewekwa, watatazama, sema, alianguka,</i>	Ali lala, ana zuma, i suru, wana vyanga, vimeyekwa, watazama,	5/7	57
Adjectives	wingi, kuu	Ku, vigi	2/2	50
Adverbs	Mapema	Mabema	1/1	100
Total			26/33	79

Table 34: Subject 2's misspellings among function words in Kiswahili sentences

Type of word	Misspellings	Proportion	%
Pronouns	<i>Wawo, kweiye</i>	1/2	50
Prepositions	<i>Chuu, ya, dani</i>	3/5	60
Auxiliary verbs	<i>Ni, ya</i>	2/3	67
Conjunction	<i>Na, kuna</i>	2/5	40
Total		8/15	53

Table 35: Subject 2's performance on content words versus function words in Kiswahili.

Type	Number of misspellings	Percentage
Lexical words	26/33	79%
Function words	8/15	53%

From the above table, the subject produced more errors in lexical words than function words.

3.3 Dictated individual words in Kiswahili

Table 36: Subject 2's performance on Kiswahili individual words

Word read	Written version	Gloss
<i>Meza</i>	<i>Meheri</i>	Table
<i>Mlango</i>	<i>Mureka</i>	Door
<i>Samaki</i>	<i>Saemaka</i>	Fish
<i>Koti</i>	<i>Keti</i>	Coat
<i>Sema</i>	<i>Sema</i>	Say
<i>Uzuri</i>	<i>Sari</i>	Goodness
<i>Urefu</i>	<i>Efu</i>	Tallness
<i>Kitabu</i>	<i>Kitabu</i>	Book
<i>Uyoga</i>	<i>Uyoga</i>	Mushroom
<i>Urembo</i>	<i>Urebo</i>	Beauty

Errors noted from the subject's performance include; errors of omission, creation of new words and creation of non words.

Table 37: Subject 2's misspellings by type of error (dictated words in Kiswahili)

Type of error	Misspellings	Proportion	Percentage
Omission	<i>Efu, urebo</i>	2/7	29%
New word	<i>Keti</i>	1/7	14%
Insertion	<i>Saemaka</i>	1/7	14%
Non-word	<i>Meheri, mureka, sari</i>	3/7	43%
Total		7/7	100%

From the above table, the subject produced 43% non words, 29% omission errors, 14% new word and insertion errors.

3.3.1 Omission Errors

Omission of letters was noted in two items. While writing the word 'urefu' the subject wrote 'efu', thus omitting the first two letters 'u' and 'r'. The word 'urembo' was written as 'urebo' leaving the letter 'm' out.

3.3.2 Creation of Non Kiswahili words

In an attempt to write the word 'meza', the subject wrote 'meheri', when writing the word 'samaki', he wrote 'saemaka'. The word 'uzuri' was written as 'sari' and 'mlango' was written as 'muraku'. All these four words are non Kiswahili words because they do not exist in Kiswahili language.

3.3.3 Creation of a new word

A new word was created by the subject. When required to write the word 'koti', the subject wrote the word 'keti' resulting to a new word in Kiswahili but with a different meaning from the stimulus word.

Table 38: Subject 2's performance in abstract versus concrete nouns(dictated words in Kiswahili)

Noun class	Words	Misspellings	Proposition	%
Abstract	Sema, uzuri, urefu, urembo	Sari, efu, urebo	3/4	75%
Concrete	Mlango, samaki, koti, kitabu, uyoga, meza	Mureka, keti, saemaka, meheri	4/6	67%

As shown in the table above, the subject seems to have a problem with abstract nouns as opposed to concrete nouns which is common to most dysgraphics. The subject misspelt 75% of abstract nouns and 67% of concrete nouns.

3.4 Transcribed Text in English

Table 39: Subject 2's misspellings of transcribed extract in English.

Transcribed words	Subject 2's written version
<p>“There is a man dancing with a huge snake around his neck”, said a lady who had come from the crowd. Just then, there was a loud cheer from the crowd and many more people started running to see what was happening.</p> <p>“Let's go and watch”, said Njogu and he started to run across the road. Suddenly a car appeared around a bend.</p>	<p>The is a man dacing with a node sn round his neck who ha fice from the crowd just the was a loud cheerer from crowd and manyi more. People si statd raning to see, what was happeng</p> <p>lets go and wotch sait Njorod nesto to run across the roadi suddenly cor apered round bend.</p>

Table 40: Subject 2's Performance on transcribed extract by word class

Class	Words	Proportion	Percentage
Nouns	rady, roadi, crow, snak, cheerer	5/12	42%
Verbs	dacing, sait, cme, startd, happeng, apered, runing, wotch	8/14	57%
Adverbs	manyi, hu,	2/3	67%
Adjectives	Suddenry	1/3	33%
Totals		16/32	50%

Table 41: Subject 2's performance among function words

Class	Misspellings	Proportion	Percentage
Pronouns	His, he	2/3	67%
Conjunctions	and, ande	2/3	67%
Auxiliary verbs	nad, was, was	$\frac{3}{4}$	75%
Articles	a, a, a, a	4/8	50%
Other articles		1/1	100%
Total		11/19	58%

Table 42: Subject 2's performance on content words versus function words

Type	Number of misspellings	Percentage
Lexical words	16/32	50%
Function words	11/19	58%

From the above table, it is apparent that the subject produced more errors in function items than lexical words.

Table 43: Subject 2's misspellings in English transcribed text

Type of Error	Misspelling	Proportion	%
Addition	Manyi, is, roadi	3/28	11
Deletion	Dacing, wth, sa, ha, startd, lets, apered, the, ran, “”, ‘”, “”, round, crowd,	14/28	50
Non words	Wotch, ne.sto, cor, sait, njorod	5/28	18
New words	Cheerer, crow, node	3/28	11
Substitution	Wotch, cor, sait	3/28	11

From the above table it shows that the subject produced 50% deletion errors, 18% non words, 11% substitution, new words, and addition errors. Deletion errors were more than other errors.

3.4.1 Deletion Errors

A lot of deletion errors were noted in the subject's copied extract as shown in table 43.

Consider the following example

Example 12

a) “There is a man dancing with a huge snake”

He wrote:

‘The is a man dacing with a node sn.....’

b) ‘...said a lady who had come from.....’

He wrote:

‘...who ha fice from’

c) ‘.....*there was a loud cheer from the crowd...*’

He wrote

‘.....*the was loud cheerer from crowd.....*’

d) ‘.....*Lets go and watch said Njoroge and he started to run....*’

He wrote:

‘.....*said Njorod nesto to run across....*’

The word ‘there’ was written as ‘*the*’ leaving the letters ‘*r*’ and ‘*e*’ out. In the word ‘*dancing*’, the letter ‘*n*’ was left out and the vowel letter ‘*a*’ was deleted from the word ‘*around*’. Three letters ‘*a*’, ‘*k*’ and ‘*e*’ were deleted from the word ‘*snake*’ as shown in example (12a). Letter deletion was also seen in the word ‘*had*’, where the letter ‘*d*’ was left out. Another error of deletion was noted in the word ‘*started*’ where the vowel letter ‘*e*’ and the letter ‘*r*’ were left out. The letters ‘*n*’ and ‘*I*’ were deleted from the word ‘*happening*’. Apart from letter deletion, several words were deleted in the subject’s copied version. For instance, the article ‘*a*’ and the word ‘*lady*’ were left out as shown in example (12b). The articles ‘*a*’ and ‘*the*’ were deleted as shown in example (12c). Another case of word deletion was noted in example (12d) where the conjunction ‘*and*’ and the word ‘*he*’ were deleted. Most punctuation marks were also deleted. From the observation made, the subject seems to have a problem with the articles since they are the ones which were mostly deleted.

3.4.2 Addition Errors

When writing the word ‘*many*’, the subject added the vowel letter ‘*i*’ to the word and wrote ‘*manyi*’. The same vowel letter ‘*i*’ was added to the word ‘*road*’. The subject

also added a non word 'si' between the words 'people' and 'started'. In writing the word 'cheer', he added the letters 'e' and 'r' and wrote 'cheerer'.

3.4.3 Creation of New Words

From the subject's response, some new words were created either by deleting or adding some letters to the target word. For example, in the word 'cheer', he added the vowel letter 'e' and the letter 'r' to the target word thus creating a new word 'cheerer'. The word 'the' was created by deleting the letters 'r' and 'e' from the word 'there'. The word 'node' was also created by the respondent while writing the word 'huge'.

3.4.5 Substitution Errors

This is another type of error that was noted in the subject's response. In an attempt to write the word 'watch', the subject substituted the vowel letter 'a' with the vowel letter 'o' and wrote 'wotch'. While writing the word 'car', he replaced the vowel letter 'a' by the vowel letter 'o' resulting to a non English word 'cor'. The word 'said' was written as 'sait' by substituting the letter 'd' with 't'. The subject tends to substitute the vowel letter 'a' with 'o' as seen from the observation.

3.5 Subject 2's Free Composition

Cow is home the lick ni writ imprice of cow you wrote impo of cow in hom, writ imprise of your no meheri meze wtehom co imporice of maize som nyang ebony ris impor of cwo wrt imprcence ow wi you writ.

Example 13

- a) '...cow is home ... like writ...'
- b) '...write imprice of cow.....'

- c) ‘...imp of cow in hom....’
- d) ‘...owwi you writ...’

Several errors were noted in the subject’s free composition. These errors were grouped into: omission errors, alteration errors, repetition errors, and substitution errors.

3.5.1 Omission Errors

It was evident that the subject made a lot of omissions in his writing of a free composition as shown in the above table. For instance, when writing the word ‘home’, he omitted the final vowel letter ‘e’ and wrote ‘hom’. In the word ‘write’, the final vowel letter ‘e’ was also left out. The letter ‘c’ was omitted in the word ‘cow’ as shown in example (12d) above.

The vowel letter ‘e’ and letter ‘w’ were left out in the word ‘some’ and ‘cow’. Several letters were omitted in the word ‘importance’ as shown in example (112c). From his performance, he tends to have a problem with the vowel letter ‘e’ since it is the one that is mostly omitted. The subject seems to be inconsistent since at times he omits the first letter and at times he omits the last letter.

3.5.2 Alteration Errors

Alteration of letters was also noted in the subject’s performance. While writing the word ‘cow’, he altered the letters and wrote ‘cwo’. The prepositions ‘in’ and ‘on’ were written as ‘ni’ and ‘no’ respectively thus rendering the words incorrect from the intended words.

3.5.3 Repetition Errors

The subject seemed to repeat some given words all through his production. For instance, the word '*importance*' was repeated (6) times. Out of the (43) words used in the essay, the word '*cow*' and '*write*' were repeated severally. Each of the three words was repeated at least (6) times. Although the subject kept on repeating the words, he was not consistent because each time he wrote a given word, it was written in a different way.

3.5.4 Substitution Errors

This was also noted in the word '*we*' in which case the subject substituted the vowel letter '*e*' with the vowel letter '*i*' as shown in example (13b)

CHAPTER FOUR: GENERAL CONCLUSION

This chapter presents the findings of the study in relation to the objectives and the research questions the study set out to answer. This study focused on dysgraphia in two children of the Ensoko Primary School in Nyamira County. The study set out to assess the spelling impairment that affected the written language of the two dysgraphic children under study. The objectives of the study were: To find out if whether the two dysgraphics produced more deletion errors than the other types of errors. It also sought to find out if the two dysgraphics misspelt more verbs than the other word classes.

The first hypothesis that the subject would produce more deletion errors than the other types of errors was confirmed. This was evident in the transcribed extract. Though the dysgraphics' performance on the transcribed extract was fairly good as compared to the other tasks, still there were a lot of errors produced. Function words were problematic to both subjects. Most function words were deleted and in some cases, they were substituted with other related words. Several letters were deleted, omitted or added to words unnecessarily especially in dictation of sentences. The vowel letter 'e' was the most affected because it was left out severally especially at the end of the word.

Subject two had a problem with long words since he deleted quite a number of letters. It was observed that the dysgraphics deleted particular features like the endings of nouns and verbs. The other errors evident were relatively few, and in some cases they were not produced for instance, errors of addition were relatively few as compared to the other types of errors. The dysgraphics had difficulties with insertion of letters. This

affected the first subject mostly and specifically in Kiswahili words where she inserted the vowel letter 'i' after the vowel letter 'e' as in 'sema' written as 'seima'. In dictation test, the subjects replaced letters by the related ones and wrote words with semantically related words, this resulted to creation of new words in the language or Non English or Kiswahili words.

The second hypothesis that the dysgraphics would misspell verbs more than the other word classes was also confirmed. In all the three tests given to the dysgraphics, the verbs had the highest percentage of misspellings. Both subjects had a lot of difficulties in free writing. However, the first subject's performance was fairly good because the errors she produced were not very many. The second subject demonstrated abnormal sequencing of letters when forming words. He kept on repeating particular words in every sentence and furthermore, he was inconsistent because each time he wrote the same word differently. The second subject was predominantly a dysgraphic case that can be categorised as deep dysgraphia because of the errors he demonstrated.

The study focused on spelling impairment in two children. While the study met its aim, the findings are not generalizable. The study recommends for future research to larger groups of dysgraphic students and may also address other aspects of language beyond spellings. The study also recommends that future researchers be given enough time to conduct research on dysgraphia because the timeframe given was not enough to collect and analyse enough data from the two dysgraphics.

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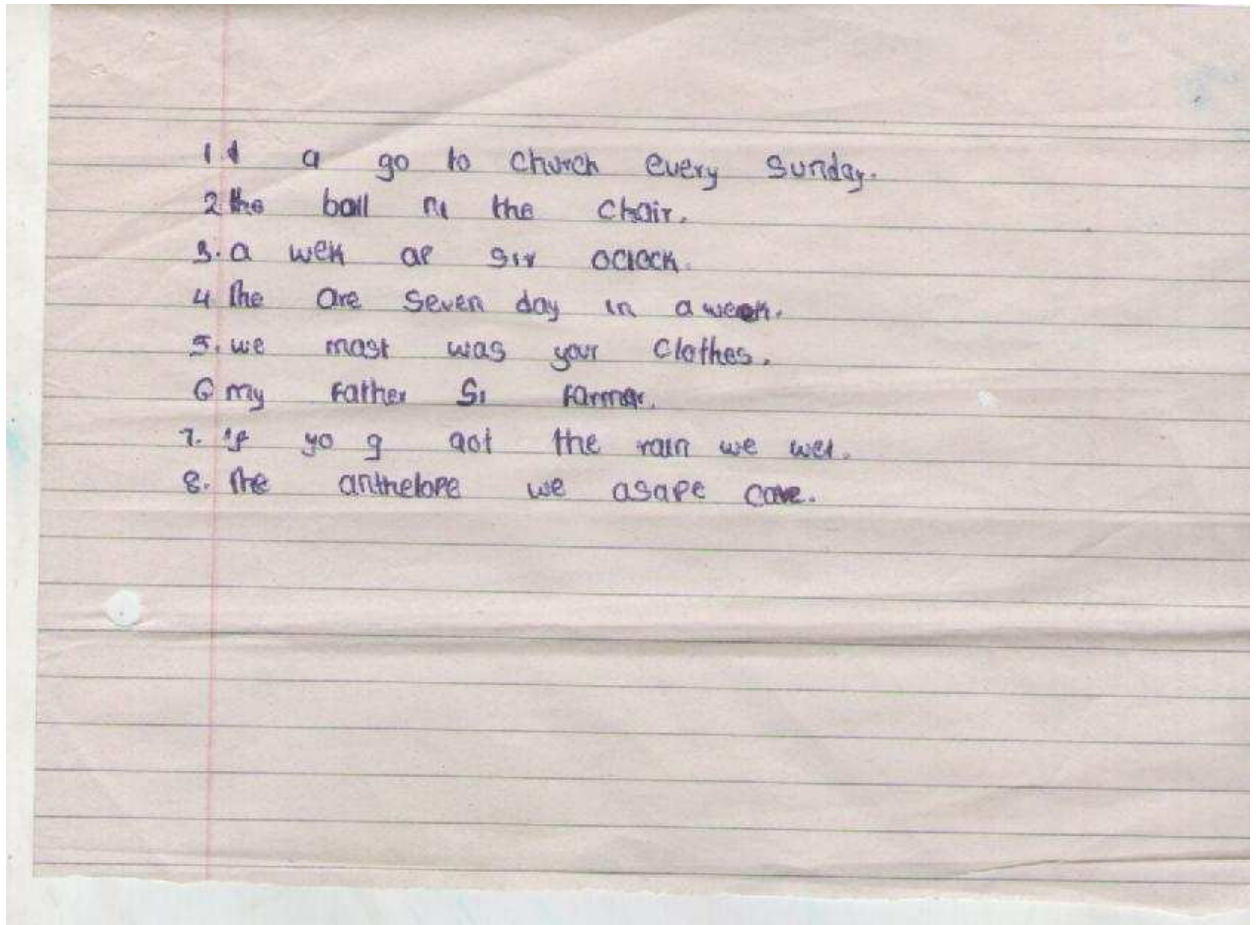
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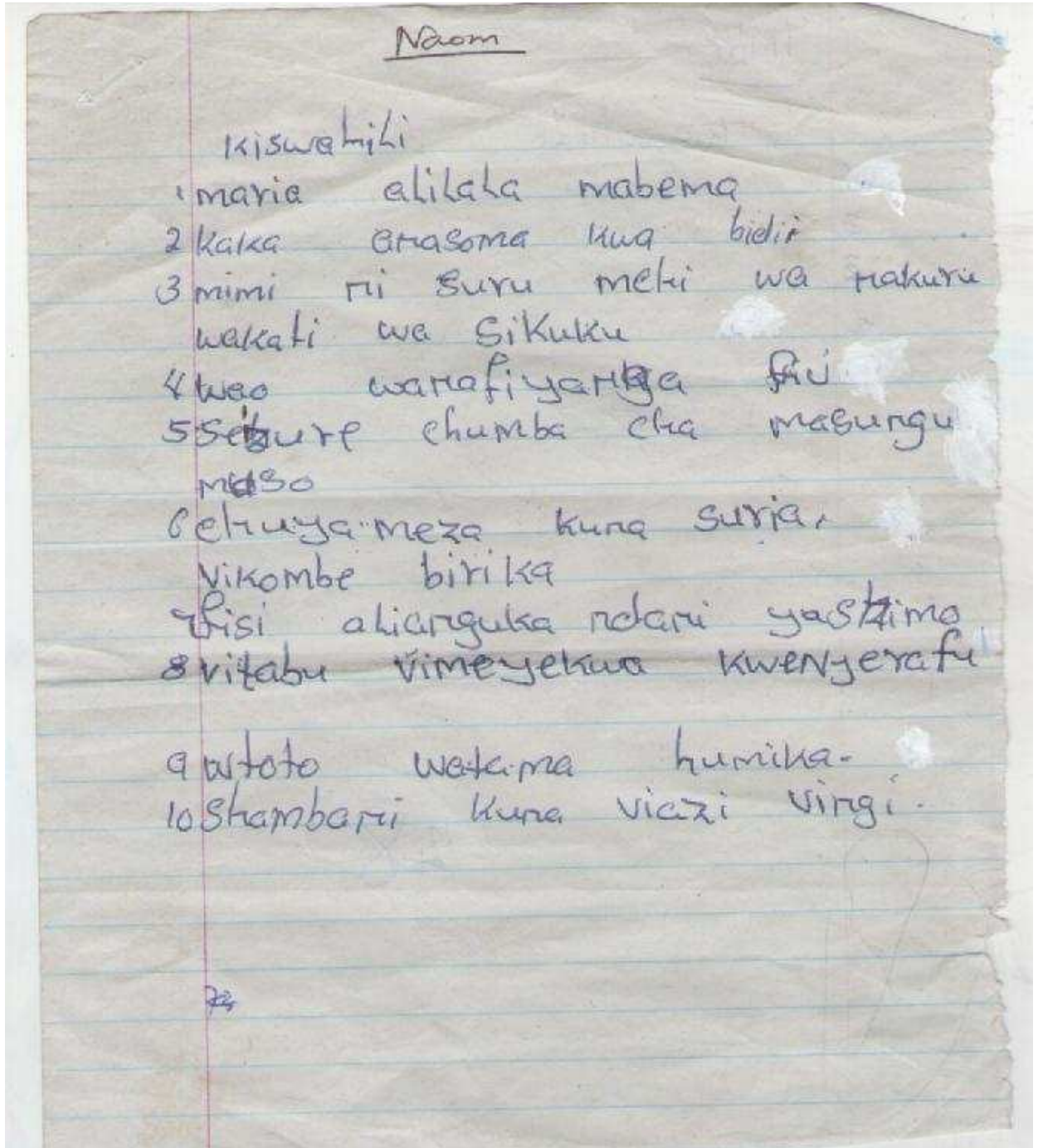
Yates, C., Berninger, V., & Abbott, R. (1994). Writing problems in intellectually gifted children. *Journal for the Education of the Gifted*, 18, 131–155.

APPENDICES

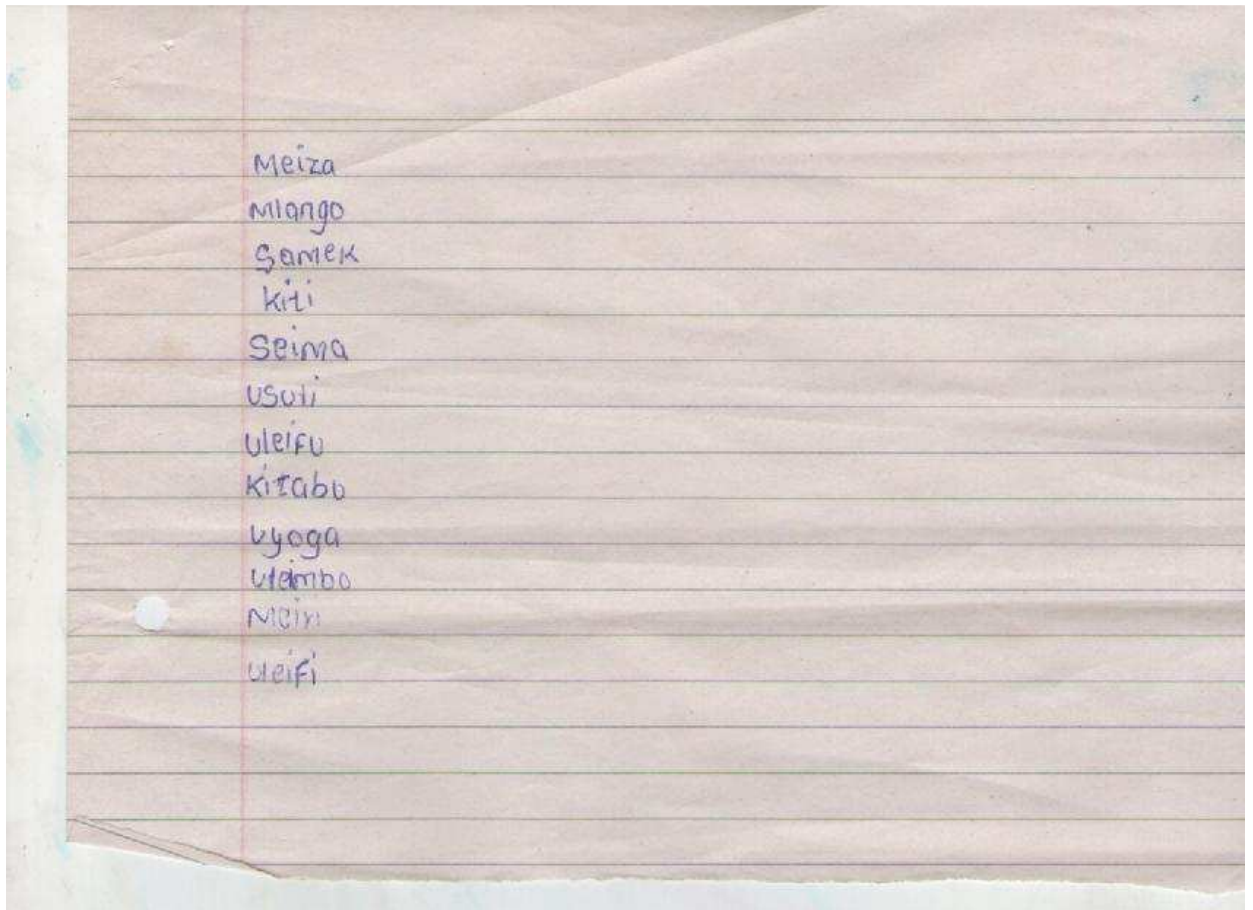
APPENDIX 1: SUBJECT 1'S WRITTEN VERSION (DICTATED ENGLISH SENTENCES)



APPENDIX II: SUBJECT 1'S WRITTEN VERSION (DICTATED SENTENCES IN KISWAHILI)



**APPENDIX III: SUBJECT 1'S WRITTEN VERSION (DICTATED INDIVIDUAL
WORDS IN KISWAHILI)**



**APPENDIX IV: SUBJECT 1'S WRITTEN VERSION (TRANSCRIBED
EXTRACT IN ENGLISH)**

There is man dancing with his snake round is neck
said lady who came from the cloud just then there
were loud cheer from the crowd and many more people
started running to see what happened lets go watch said
Njogu and he started too across the road suddenly car
appeared round bend

APPENDIX V: SUBJECT 1'S VERSION OF FREE COMPOSITION

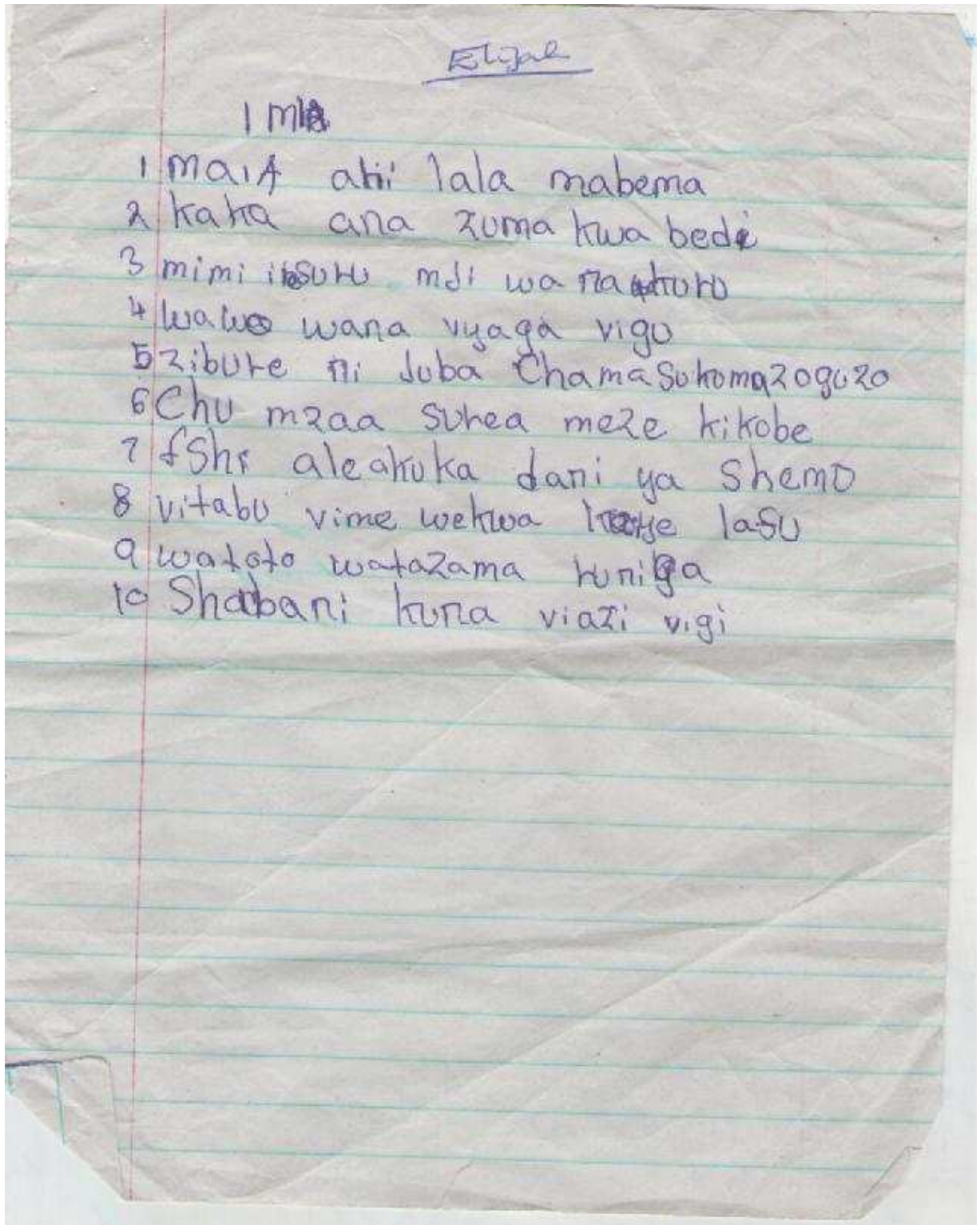
(IMPORTANCE OF A COW)

Our cow are called maritabi, it give us milk for drink we liked our cows it is a maritabi in color, with anyeri big father tell mother milk cow morning in the evening in chag milk. It fill milk you sell make besa buy shoe for and brota with mine. We cow in our outside home we bring saka for cow eat to milk cow maritabi stomach are up up full so milk is big. maritabi is cows that we likes ever day. I put milk in mouth and full into stomach maked me ran to skool and plays onyuro with jak and glace. we are full good. cow importance milk is our cow. cow is

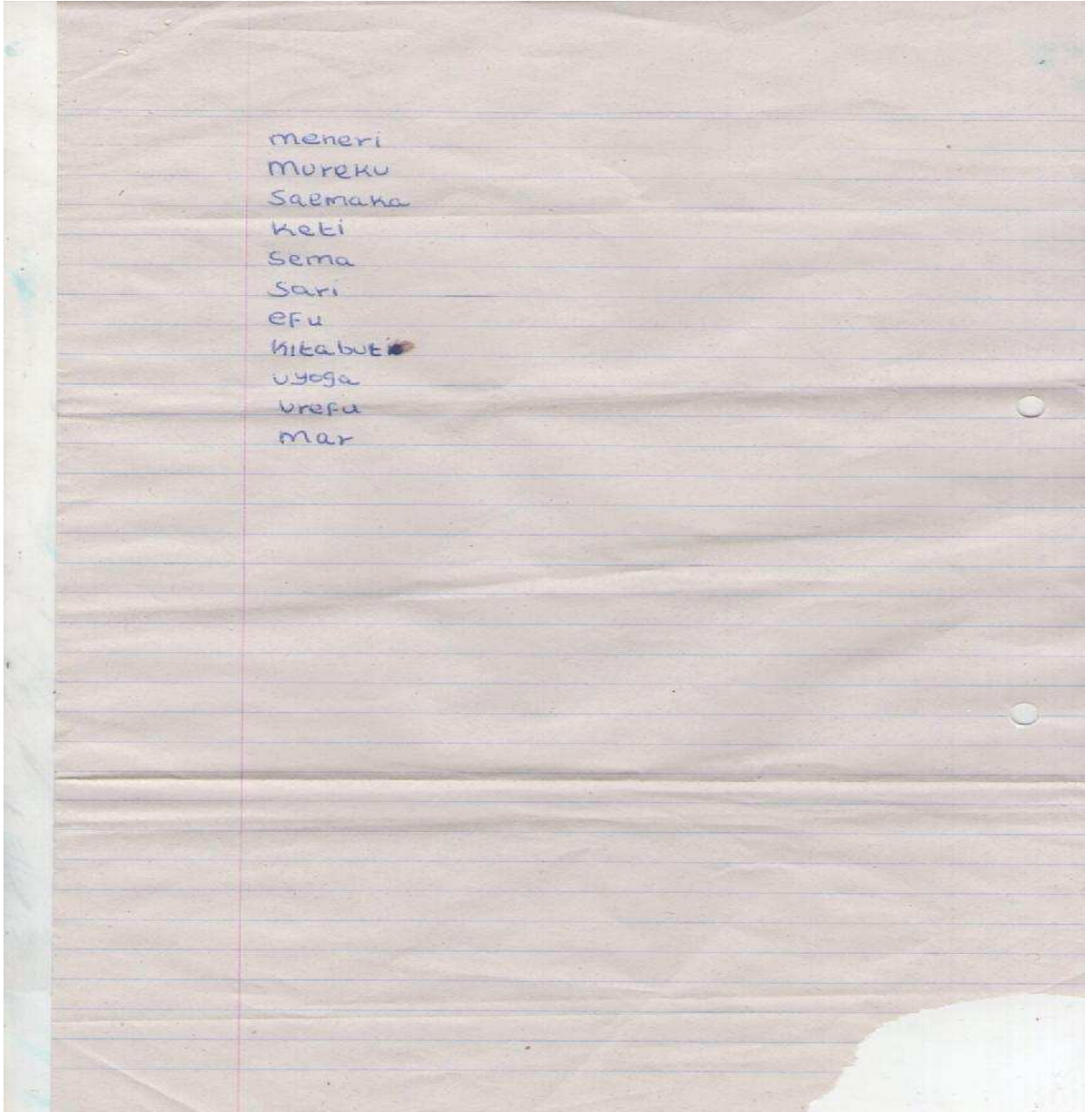
APPENDIX VI: SUBJECT 2'S WRITTEN VERSION (DICTATED ENGLISH SENTENCES)

e go to church every Saturday
The bell si no the tebo
e Welk ab ta Six o'clock
the ar seven days in a week
We most washe ye cloth
my father si a fama
IF you go out the rain we get wet
The a thel we eskeb from car

APPENDIX VII: SUBJECT 2'S WRITTEN VERSION (DICTATED SENTENCES
IN KISWAHILI)



**APPENDIX VIII: SUBJECT 2'S WRITTEN VERSION (DICTATED
INDIVIDUAL WORDS IN KISWAHILI)**



**APPENDIX IX: SUBJECT 2'S WRITTEN VERSION (TRANSCRIBED
EXTRACT IN ENGLISH)**

~~Pen~~
There is a man dancing with a node in round
his neck who no file from the crowd just
there was loud cheerer from crowd and many
more people si started running to see what was
happening Lets go and watch sat enjoyed next
to run across road. Suddenly car opened round bend.

APPENDIX X: SUBJECT 2'S VERSION OF FREE COMPOSITION

(IMPORTANCE OF A COW)

Cow is home the like ni writ imprice of Cow
you wrote impo of Cow in hom. writ imprice of
your mo Meheri: meze Wte hom Co imprice of
meize som nyang e boni is impor of-Cwo .Writ
impicence ow wi you writ.