THE EFFECT OF DIFFICULT LETTERS ON PRIMARY SCHOOL STUDENTS’ WRITING ABILITY

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THE EFFECT OF DIFFICULT LETTERS ON PRIMARY SCHOOL STUDENTS’ WRITING ABILITY

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Statement of Originality

The work described in this Research Paper, entitled “The Effect of Difficult Letters on Primary School Students’ Writing Ability” is to the best of the author’s knowledge that of the author except where due reference is made.

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# TABLE OF CONTENT

List of Tables ............................................................................................................................... i
List of Figures ................................................................................................................................. ii
Abstract ......................................................................................................................................... iii
*Abstrak* ........................................................................................................................................ iv

## CHAPTER ONE - INTRODUCTION

Background of the Study .................................................................................................................. 2
Problem Statement ............................................................................................................................ 3
Research Objectives ......................................................................................................................... 5
Research Questions ........................................................................................................................... 6
Research Hypotheses ........................................................................................................................ 7
Conceptual Framework .................................................................................................................... 7
Significance of the Study .................................................................................................................. 8
Limitations of the Study ................................................................................................................... 9
Definitions of Terms .......................................................................................................................... 9
Summary ........................................................................................................................................ 11

## CHAPTER TWO - LITERATURE REVIEW

Name Writing .................................................................................................................................... 12
Letter Writing and Difficult Letters ............................................................................................... 18
Copywriting ..................................................................................................................................... 23
Berninger and Winn’s (2006) Not-so-simple View of Writing ....................................................... 24
The Effect of Difficult Letters on Name Writing ........................................................................... 25
The Effect of Letter Writing Skills on Copywriting ...................................................................... 27
Summary ........................................................................................................................................ 27

## CHAPTER THREE - RESEARCH METHODOLOGY

Study 1

  Research Design ........................................................................................................................... 28
  Population, Sample, and Sampling Procedure .............................................................................. 28
  Sample Characteristics .................................................................................................................. 29
  Pilot Study .................................................................................................................................... 29
CHAPTER FOUR-FINDINGS
Reliability of the Research Instruments ------------------------------------ 41
Inter-rater Reliability for Scoring of the Instruments ------------------------ 41
First Research Question: What are the Students’ Writing Ability? ----------- 41
Second Research Question: What are the Letters that are Difficult to Write? 44
Third Research Question: Is there any Significant Difference between Students with Low and High Letter Difficulty and Their Writing Ability? -------------- 45
Summary of the Findings ----------------------------------------------------- 47

CHAPTER FIVE-DISCUSSION AND CONCLUSION
First Research Question: What are the Students’ Writing Ability? ----------- 53
Second Research Question: What are the Letters that are Difficult to Write? 56
Third Research Question: Is there any Significant Difference between Students with Low and High Letter Difficulty and Their Writing Ability? -------------- 58
Limitations and Future Recommendation -------------------------------------- 60
Implications of the Study -------------------------------------------------- 61
Conclusion --------------------------------------------------------------- 62
REFERENCES --------------------------------------------------------------- 64
APPENDICES
Appendix A   Name Writing Task --------------------------------------------- 73
<table>
<thead>
<tr>
<th>Appendix</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix B</td>
<td>Letter Writing Task (Capital Letters)</td>
<td>74</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Letter Writing Task (Small Letters)</td>
<td>75</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Words Copying Task</td>
<td>76</td>
</tr>
<tr>
<td>Appendix E</td>
<td>Teacher’s Comments on the Use of 4 Lines</td>
<td>77</td>
</tr>
<tr>
<td>Appendix F</td>
<td>Teacher’s Comments on the Students’ Name Writing Ability and Name Writing Rubric</td>
<td>78</td>
</tr>
<tr>
<td>Appendix G</td>
<td>Teacher’s Comments on the Students’ Letter Writing Ability and Letter Writing Rubric</td>
<td>81</td>
</tr>
<tr>
<td>Appendix H</td>
<td>Teacher’s Comments on the Students’ Words Copying Ability and Words Copying Rubric</td>
<td>84</td>
</tr>
<tr>
<td>Appendix I</td>
<td>Teacher’s Survey Form</td>
<td>88</td>
</tr>
<tr>
<td>Appendix J</td>
<td>Parents’ Survey and Informed Consent Form</td>
<td>90</td>
</tr>
<tr>
<td>Appendix K</td>
<td>Letter of Permission from Educational Planning and Policy Research Division (EPRD)</td>
<td>95</td>
</tr>
<tr>
<td>Appendix L</td>
<td>Letter of Permission from Sarawak Education Department (JPN)</td>
<td>96</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table 2.1
Criteria of the Name Writing Rubrics used in the Studies on Name Writing 16-17

Table 3.1
Types of Statistics and Techniques used for Data Analyses 37

Table 3.2
Frequency Table for Sample Characteristics in Study 1 and Study 2 40

Table 4.1
Descriptive Table for Capital Letters in Study 1 (n = 150) and Study 2 (n = 162) 48

Table 4.2
Descriptive Table for Small Letters in Study 1 (n = 150) and Study 2 (n = 162) 49

Table 4.3
Descriptive Table for Words Copying in Study 1 50

Table 4.4
Percentage of Students in obtaining a Full Score of 2 in Writing Capital Letters 51

Table 4.5
Percentage of Students in obtaining a Full Score of 2 in Writing Small Letters 52
LIST OF FIGURES

Figure 1.1. The not-so-simple view of writing model (Berninger & Winn, 2006). 2

Figure 1.2. Conceptual framework of the study. 8
Abstract

The Effect of Difficult Letters on Primary School Students’ Writing Ability

Jee Kai Yien

This study examined the effect of difficult letters on primary school students’ writing ability. A sample of 150 and 162 Primary Two students, in study 1 and study 2, respectively, were examined. This was a quantitative study where descriptive and inferential statistics were used to analyze the data. Four samples of writing (i.e., writing full names, capital letters, small letters, and copying words) were collected. The students exhibited a range of proficiency in their ability to write their full names, capital letters, small letters, and to copy words. Capital letters G, M, W, and Y and small letters g, j, q, k, and f were difficult letters. In study 1, students with higher percentage of difficult letters in their names had significantly lower name writing scores. Also, in study 1, students with higher difficulties in writing small letter q had significantly lower scores in copying the word queen. This study shed light on the importance of transcription (i.e., the students’ ability to write the dictated letters) as some letters are difficult for the students to write. Implications of the findings on handwriting instruction and intervention are discussed.

Keywords: transcription, handwriting, difficult letters, primary school, writing ability
Abstrak

Kesan Huruf-huruf Abjad yang Susah Ditulis ke atas Kebolehan Murid-murid Menulis

Jee Kai Yien


Kata Kunci: transkripsi, tulisan, huruf-huruf yang susah ditulis, sekolah rendah, kebolehan menulis
CHAPTER ONE

INTRODUCTION

Writing is an essential tool for students to learn (Graham, Gillespie, & McKeown, 2013). In the process of learning, writing provides students with opportunities to express their ideas into written form (Graham, 2008). Being able to produce legible letters, words, sentences, and text is a basic requirement that primary school students need to master to complete their written tasks (Weintraub & Graham, 1998).

One of the foundational skills in writing is to learn to write the letters of the alphabet (Ritchey, 2008). Furthermore, legible letters that are produced automatically (i.e., the ability to write the dictated letters) have positive impact for students’ future writing activities (e.g., sentence construction and essay writing) (Ritchey, 2008).

Students’ ability to write the dictated letters refers to the component of transcription while their ability in writing sentences, essays, and other written tasks refers to the component of text generation in Berninger and Winn’s (2006) not-so-simple view of writing (see Figure 1.1).

As transcription precedes the other two components of writing (i.e., text generation and executive functions) (Berninger & Swanson, 1994), mastery of the transcription component enables students to shift their attention from writing the letters to other cognitive processes such as thinking of the words or the flows of ideas during text generation (Ritchey, 2008).

Given the importance of the mastery of the transcription skills, the present study sought to examine the transcription skills among Primary Two students, by specifically
examining the letters that are difficult for the students to write to the effect of difficult letters on their writing ability.

![Diagram of the not-so-simple view of writing model](image)

**Figure 1.1.** The not-so-simple view of writing model (Berninger & Winn, 2006). *Note.* The not-so-simple view of writing comprised three main components, which were transcription, executive function, and text generation. Adapted from “Implications of advancements in brain research and technology for writing development, writing instruction, and educational evolution,” by V. Berninger, and W. Winn, 2006, in C. MacArthur, S. Graham, and J. Fitzgerald (Eds.), *Handbook of Writing Research* (pp. 96-114), New York, NY: The Guilford Press.

**Background of the Study**

Mastering the skills to write is an important aspect of literacy development to ensure children’s academic success (Ritchey, 2008). Moreover, higher marks or grades are commonly given to those students whose handwriting is neat and readable (Briggs, 1980; Chase, 1986; Graham, Harris, & Fink, 2000; Hughes, Keeling, & Tuck, 1983).

Despite the importance of writing, many children have difficulties encounter in writing. This difficulty is commonly referred to as dysgraphia (Richards, 1999). This difficulty is associated with the mechanics of handwriting (i.e., ability in transcription) (Hamstra-Bletz & Blote, 1993). As a result of handwriting difficulties, children with dysgraphia have difficulties in coping with the written tasks (Crounch & Jakubecy, 2007) and encounter constrained ability in composing (Fletcher, Lyon, Fuchs, & Barnes, 2007).
In addition, some children who have difficulties in writing are pessimistic about writing (Berninger, Mizokawa, & Bragg, 1991).

Children with dysgraphia have the following characteristics: illegible handwriting, substitution of capital and small letters, irregular letter sizes and shapes, and poor letter formation (Richards, 1998). These characteristics indicate that children are having difficulties in writing some letters. The presence of difficult letters raises the concern on handwriting instruction and intervention. Therefore, the identification of the difficult capital and small letters is important.

**Problem Statement**

**Name writing ability.** Students’ name writing ability was examined among young children to shed light on their writing ability (Blair & Savage, 2006; Bloodgood, 1999; Drouin & Harmon, 2009; Haney, Bisonnette, & Behnken, 2003; Puranik & Lonigan, 2012; Puranik, Lonigan, & Kim, 2011; Puranik, Schreiber, Estabrook, & O’Donnell, 2013; Welsch, Sullivan, & Justice, 2003). As the samples were young children (i.e., preschoolers, kindergartners, or both preschoolers and kindergartners), only their first names were assessed.

According to the committee of Prevention of Reading Difficulties in young children (Snow, Burns, & Griffin, 1998), students beyond kindergartens were able to write their full names and should be assessed on their ability to write full names. Therefore, in the present study, the students’ ability in writing their full names was examined as they were in Primary Two (i.e., approximately 8 years old).

**Letter writing ability.** Being able to write the letters of the alphabet legibly and automatically is vital (Berninger et al., 1992), yet little is known about letter writing ability
among Primary Two students in Malaysia. Thus, in the present study, Primary Two students’ letter writing ability adds to the extant literature.

**Words copying ability.** Empirical studies (Graham, Weintraub, & Berninger, 1998, 2001; Graham, Berninger, Weintraub, & Schafer, 1998; Simner, Leedham, & Thomassen, 1996; Wagner et al., 2011) included copying task as one of the measures in examining first to ninth graders’ writing ability. Hence, copying ability should also be examined among Primary Two students to add to the extant literature about students’ writing ability.

However, in the present study, 10 words rather than a sentence or a paragraph, were chosen based on school syllables and with varying level of difficulty. This was because individual score for each word was needed to examine the effect of difficult small letters on the words copied.

**Difficult letters.** Many studies have investigated letter writing (Graham et al., 2008; Graham et al., 2001; Molfese, Beswick, Molnar, & Jacobi-Vessels, 2006; Puranik & Apel, 2010; Puranik et al., 2011; Puranik & Lonigan, 2011; Ritchey, 2008; Stennett, Smithe, & Hardy, 1972) but few have examined difficult letters among young children (Graham et al., 2008; Graham et al., 2001; Puranik & Lonigan, 2011; Ritchey, 2008; Stennett et al., 1972). Furthermore, given that the findings of the empirical studies on difficult letters were inconclusive due to the differences in the sample (i.e., preschoolers, kindergartners, first, second, and third graders, and teachers), methods (i.e., to copy letters, to write letters from memory, to write dictated letters, or based on teachers’ opinions), and letter forms (i.e., only small letters, both capital and small letters, or in either form), examined capital and small letters that are difficult to write is crucial.
The effect of difficult letters on students’ name writing ability. To date, no other studies have examined the effect of difficult letters on students’ name writing ability except Drouin and Harmon (2009). Drouin and Harmon made use of the difficult letters identified by Graham et al. (2001) (i.e., j, g, n, q, u, y, and z). As no study on difficult letters has been conducted in Malaysia, difficult letters should not be based on the findings of Graham et al. but should be based on the findings of the present study.

The effect of difficult letters on students’ words copying ability. To my knowledge, no study has examined the effect of difficult letters on students’ copying ability. Graham et al.’s (2001) study is the only pertinent study that has examined the contribution of each letter writing skills (i.e., legibility of the letter, no additional parts or strokes, correct proportion, correct letter formation, no rotations, and fluency of the letters of the alphabet) to the overall legibility of copying task. Graham et al. further recommended future researchers to examine the combined (i.e., the six letter writing skills mentioned earlier) or individual contribution (e.g., letter legibility) of the letter writing skills to the overall legibility of the copying task. Hence, the effect of difficult letters on students’ copying ability is an important aspect to be investigated.

Research Objectives

Based on the problem statement, specifically, the research objectives were as follows. The first objective was to examine the students’ writing ability (i.e., writing full names, writing capital letters, writing small letters, and copying words). The second objective was to examine the letters (i.e., capital and small letters) that are difficult to write.
Lastly, the third objective was to examine the significant difference between students with low and high letter difficulty and their writing ability (i.e., name writing and words copying).

**Research Questions**

The following research questions were investigated in the present study based on the research objectives.

1. What are the students’ writing ability?
   a) What are the students’ ability in writing their full names?
   b) What are the students’ ability in writing capital letters?
   c) What are the students’ ability in writing small letters?
   d) What are the students’ ability in copying words?

2. What are the letters that are difficult to write?
   a) What are the capital letters that are difficult to write?
   b) What are the small letters that are difficult to write?

3. Is there any significant difference between students with low and high letter difficulty and their writing ability (i.e., name writing and words copying)?
   a) Is there any significant difference between students with low and high letter difficulty and their name writing ability?
   b) Is there any significant difference between students with low and high difficulties in writing the small letters (i.e., g, j, and q) and their ability in copying the words (i.e., angry, jumps, and queen)?
   (i) Is there any significant difference between students with low and high difficulties in writing the small letter g and their ability to copy the word angry?
(ii) Is there any significant difference between students with low and high difficulties in writing the small letter \( j \) and their ability to copy the word \( \text{jumps} \)?

(iii) Is there any significant difference between students with low and high difficulties in writing the small letter \( q \) and their ability to copy the word \( \text{queen} \)?

**Research Hypotheses**

The following research hypotheses were formulated from the third research question which was to examine the significant difference between students with low and high letter difficulty and their writing ability (i.e., name writing and words copying).

\[ \text{H}_01: \text{ There was no significant difference between students with low and high letter difficulty and their name writing ability.} \]

\[ \text{H}_02: \text{ There was no significant difference between students with low and high difficulties in writing the small letter \( g \) and their ability to copy the word \( \text{angry} \).} \]

\[ \text{H}_03: \text{ There was no significant difference between students with low and high difficulties in writing the small letter \( j \) and their ability to copy the word \( \text{jumps} \).} \]

\[ \text{H}_04: \text{ There was no significant difference between students with low and high difficulties in writing the small letter \( q \) and their ability to copy the word \( \text{queen} \).} \]

**Conceptual Framework**

The independent variables of this study were difficult letters and these letters comprising capital and small letters that are difficult to write. The dependent variable of this study was the students' writing ability (i.e., name writing, letter writing, and words copying). The conceptual framework for this study was shown in Figure 1.2.
**Figure 1.2.** Conceptual framework of the study. *Note.* The rectangle on the left denotes the independent variable (i.e., difficult letters) while the rectangle on the right denotes the dependent variable (i.e., students’ writing ability) of the present study. They are connected by the arrow going from the left to the right that represents the effect of difficult letters on the students’ writing ability.

**Significance of the Study**

The identification of difficult letters, both capital and small letters, is useful to develop a scope and sequence for teaching less difficult letters before teaching the more difficult ones (Graham et al., 2001; Groff, 1972-1973). Additionally, the time spent to teach letter formation of the more difficult letters may be increased so that students are able to master the formation of the letters (Graham et al., 2001). This in turn scaffolds students to master their transcription skills (i.e., their ability to write the letters of the alphabet).

In the present study, capital and small letters that are difficult to write were investigated. The findings obtained in the present study provide teachers with information on particular letter forms and letters that need to pay extra attention during instruction. Then, teachers can make use of the findings of the present study in their progress to monitor students who face difficulties in mastering letter forms. Apart from that, the instruments used in the study can be used by the future researchers and the findings of the study can contribute to the extant literature. Finally, the findings of the study can create awareness of the presence of difficult letters that might constrain the students’ ability to write legibly and quickly in their writing tasks.
Limitations of the Study

Only national government schools were included in this study as the instruments (e.g., words copying task) were constructed based on Primary One English textbook. Next, this study only focused on the factor of difficult letters on students’ writing ability. There might be some other factors that affect students’ writing ability and hence, further research has to be conducted to investigate various types of possible factors. Furthermore, for the words copying task, the words were given only in small letters as students face more difficulties in writing small letters rather than capital letters (Olsen, 2003). Future studies should include both small and capital letters in the copying task.

Definitions of Terms

Name writing ability. Students’ writing ability depends on the types of writing tasks involved (i.e., name writing, letter writing, and words copying). Name writing refers to children’s ability to write their first names (Blair & Savage, 2006; Bloodgood, 1999; Drouin & Harmon, 2009; Haney et al., 2003; Puranik & Lonigan, 2012; Puranik et al., 2011; Welsch et al., 2003). As different name writing rubrics were used to score on students’ names written, various types of students’ name writing ability were obtained.

In the present study, Primary Two students were asked to write their full names instead of first names as suggested by Snow et al. (1998). Students’ name writing ability was scored based on the criteria of letter formation, spelling, spacing, and use of capitalization. For example, a student who writes her full name (e.g., Nur Alia Natasha binti Hamzah) with appropriate letter formation, spacing, and use of capitalization will be given a full score of 4 while another student who only produces her first name (e.g., Nur
Aina) with appropriate letter formation, spelling, spacing, and use of capitalization will be
given a score of 2.

**Letter writing ability.** Graham et al. (2001) defined children’s letter writing ability
in terms of the legibility of the letters they produce. In the letter writing tasks, students
were assessed based on only small letters (Graham et al., 2001), both capital and small
letters (Graham et al., 2008; Ritchey, 2008; Stennett et al., 1972), or students were given
the flexibility to write in either form (Molfese et al., 2006; Puranik & Apel, 2010; Puranik
& Lonigan, 2011; Puranik et al., 2011).

In the present study, letter writing ability refers to writing dictated capital and small
letters. These letters were scored based on letter formation, reversals of the letters, and
substitution of capital and small letters. For example, when a small letter q was dictated, a
reversed small letter q or a capital letter Q was given a score of 0.

**Words copying ability.** Students were asked to copy a short paragraph (Graham et
al., 1998, 2001; Graham, Berninger, et al., 1998) or a sentence (Simner et al., 1996;
Wagner et al., 2011). The students’ legibility (Graham et al., 2001), the speed and legibility
(Graham et al., 1998; Graham, Berninger, et al., 1998) or fluency (Wagner et al., 2011) was
assessed.

In the present study, students were asked to copy 10 words that consisted of 5 small
letters each. All ten words comprised all the letters of the alphabet. The words copied were
scored based on the criteria such as letter formation, spacing between letters, capitalization,
spelling, additional letter added, and reversals of the letters.

**Difficult letters.** Difficult letters were the letters that are difficult for students to
write (Graham et al., 2001; Graham et al., 2008; Ritchey, 2008; Stennett et al., 1972).
Graham et al. (2001) identified difficult letters by ranking the letters based on the percentages of the letter legibility.

In the present study, difficult letters refer to capital and small letters that are difficult to write. These letters were ranked based on the percentages of the students in scoring for the full score of 2 (i.e., legible letters were written). Difficult letters were those that had less than 50% in scoring the full score of 2.

**Summary**

To conclude, transcription, which refers to students’ ability to write the dictated letters, is the foundational part in Berninger and Winn’s (2006) not-so-simple view of writing. Given the importance of the mastery of the transcription skills, this study examined the letters that are difficult to write and the effect of difficult letters on primary school students’ writing ability.
CHAPTER TWO
LITERATURE REVIEW

This chapter provides a discussion of studies on students’ writing ability including studies on difficult letters, Berninger and Winn’s (2006) not-so-simple view of writing, and the pertinent studies on the effect of difficult letters on students’ writing ability.

Name Writing

Name writing refers to children’s ability to write their first names (Blair & Savage, 2006; Bloodgood, 1999; Drouin & Harmon, 2009; Haney et al., 2003; Puranik & Lonigan, 2012; Puranik et al., 2011; Welsch et al., 2003).

In daily life, children regularly see their printed names on their personal belongings (e.g., school bag, pencil case, and water bottle) and hear their names being called repeatedly (e.g., by their parents, teachers, friends, and siblings) help them to get familiar with their names (Villaume & Wilson, 1989). Getting familiar with their names is vital as children make use of their names to start to learn how to write (e.g., scribble the letters in their names) (Treiman & Broderick, 1998).

In learning how to write, children’s names are their preference (Both-de Vries & Bus, 2008, 2010; Clay, 1975; Martens, 1999) and their names consist of the letters of the alphabet (e.g., the child’s name, Pat comprises letters p, a, and t). Moreover, children show great interest in learning to write their names (Hildreth, 1936). Therefore, being able to write their names, especially with correct spelling and letter formation, indicates children’s ability in writing (Puranik et al., 2013).

Several studies have investigated students’ name writing ability. I will discuss on the studies that examined preschoolers (Blair & Savage, 2006; Drouin & Harmon, 2009;