UNIVERSITI PUTRA MALAYSIA

EFFECTS OF COLLABORATION IN AN ONLINE ENVIRONMENT ON ESL TERTIARY STUDENTS’ WRITING AND REFLECTIVE THINKING

IRENE LEONG YOKE CHU

FBMK 2006 18
"I desire distinction for you...."

"For you I desire spiritual distinction — that is, you must become eminent and distinguished in morals. In the love of God you must become distinguished from all else. You must become distinguished for loving humanity, for unity and accord, for love and justice...."

"In brief you must become distinguished for all the virtues of the human world — for faithfulness and sincerity, for justice and fidelity, for firmness and steadfastness, for philanthropic deeds and service to the human world, for love toward every human being, for unity and accord with all people, for removing prejudices and promoting international peace...."

"Finally you must become distinguished for heavenly illumination and for acquiring the bestowals of God. I desire this distinction for you. This must be the point of distinction among you".

—From the Bahá'í Writings of 'Abdu'l-Bahá, The Promulgation of Universal Peace, p. 190—
Abstract of thesis presented to the Senate of University Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy.

EFFECTS OF COLLABORATION IN AN ONLINE ENVIRONMENT ON ESL TERTIARY STUDENTS’ WRITING AND REFLECTIVE THINKING

By

IRENE LEONG YOKE CHU

June 2006

Chairperson : Associate Professor Dr. Mardziah Hayati Abdullah
Faculty : Faculty of Modern Languages and Communication

Based on a descriptive study, the main aim of this study was to observe and examine the effects of collaboration versus non-collaboration on students’ writing and reflective thinking skills in an online learning environment. In order to achieve the purpose of this study, students engaged in both collaborative online writing tasks and non-collaborative online writing tasks were observed.

The findings of the study indicate possible pedagogical implications for the planning and teaching of an academic writing program for ESL students in an institution of higher learning. They support the relevance of creating a
collaborative learning environment in which the act of reflection is integrated to enhance and stimulate students’ cognitive processes and enable them to improve in their writing skills.

The findings also show that how students behave in an online collaborative environment influences the way students think and regulate the various writing processes. The study provides evidence that the collaborative learning environment can be a channel to trigger students’ reflective thinking to help them integrate and link ideas learnt at the surface level and to negotiate meaning using higher order thinking skills. The interactive and reflective discussions generated during online collaboration enhanced and provided opportunities for students to transform learning and as a result, improve their writing skills. The study shows that the combination of these two strategies empowered students to hone the behaviours that support successful collaboration and enhanced students’ metacognitive awareness to adopt a deep approach to learning and writing.

In conclusion, the study shows that the implementation of telecollaboration and structured reflection during the teaching and learning of writing among ESL tertiary students can encourage students to share and discuss their thoughts and build ideas. The learning environment, which simulates a real life situation, allows students to get into a relationship with the writing tasks and motivate them to negotiate meaning at a deeper level.
Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai mematuhi keperluan untuk Ijazah Kedoktoran.

KESAN PEMBELAJARAN BERKUMPUL MELALUI INTERNET KE ATAS PROSES PENULISAN DAN AMALAN REFLEKSI PELAJAR BAHASA INGGERIS SEBAGAI BAHASA KEDUA DI INSTITUSI PENGAJIAN TINGGI

Oleh

IRENE LEONG YOKE CHU

Jun 2006

Pengerusi : Professor Madya Dr. Mardziah Hayati Abdullah
Fakulti : Fakulti Bahasa Moden dan Komunikasi

Berdasarkan kepada pengajian diskriptif, kajiselidik ini bertujuan untuk mengkaji bagaimana tingkah-laku pelajar-pelajar yang mengikuti kursus penulisan secara berkumpulan melalui Internet mempengaruhi pemikiran refleksi dan proses penulisan mereka. Kajian ini juga mengkaji amalan refleksi dan proses penulisan pelajar-pelajar yang mengikuti kursus secara individu.

Keputusan kajian menunjukkan implikasi pedagogi untuk perancangan dan pengajaran kursus penulisan untuk pelajar-pelajar ESL. Keputusan kajian
menyokong penggunaan pembelajaran secara berkumpulan melalui Internet untuk memajukan amalan refleksi pelajar-pelajar dan meningkatkan prestasi penulisan mereka.

Keputusan kajian juga menunjukkan bahawa tingkah-laku pelajar-pelajar secara berkumpulan mempengaruhi pemikiran mereka dan membantu dalam penyemakan penulisan mereka dengan lebih efektif.

Kajian ini membuktikan bahawa persekitaran memainkan peranan yang penting untuk mengalakkan pelajar-pelajar menggunakan pemikiran refleksi secara mendalam supaya mereka dapat mengaitkan ide-ide, pengalaman atau isi yang dipelajari dengan lebih efektif. Persekutuan yang memberi peluang kepada pelajar untuk membincang dan membuat diskusi secara berkumpulan lebih memanfaatkan pembelajaran pelajar terutamanya dalam penulisan mereka.

Kajian ini juga menunjukkan bahawa pembelajaran secara berkumpulan dan amalan refleksi merupakan dua strategi yang saling melengkapi. Kedua-dua strategi ini boleh mengalakkan pelajar-pelajar mengamalkan tingkah-laku yang positif supaya ia dapat membantu mereka menggunakan kesedaran metacognitif untuk membaiki cara penulisan mereka.
Pada kesimpulannya, kajian ini menunjukkan bahawa pembelajaran secara kumpulan melalui Internet dan amalan refleksi boleh mengalakkan pelajar-pelajar berkongsi maklumat dan meningkatkan pembelajaran dan prestasi penulisan mereka.
ACKNOWLEDGEMENTS

First and foremost, I must thank God the Almighty for all the love and blessings He has showered on me and my family.

I also wish to express my gratitude and appreciation to the MARA University of Technology for giving me this opportunity to further my post-graduate studies and to contribute to the extension of knowledge in the field of language teaching and learning.

My heartfelt thanks to my supervisory committee comprising the “powers of three”, namely, Associate Professor Dr. Mardziah Hayati Abdullah, Professor Dr. Chan Swee Heng and Associate Professor Dr. Wong Bee Eng whose collaborative efforts and ideas have guided me tremendously throughout the completion of my thesis.

Special mention must be made of my Committee Chair, Associate Professor Dr. Mardziah Hayati Abdullah who constantly provided invaluable guidance, suggestions and input that challenged me cognitively and helped me make the right connections to improve my thesis. She is a great mentor and a good friend whose constant advice has encouraged me to persevere and to successfully complete my thesis.
To my dear husband, Patrick who is also my learning partner as we collaborate to meet the joys and face the challenges that come our way as we build our life together through the worlds of God. Thank you for being my pillar of strength and comfort.

To my two brilliant stars, Nicholas and LeAnn, you are both the sunshine of my life. I am so thankful to God for bringing you both into my life and for endowing you such with wonderful ‘gems within’ that I pray you will use your skills, talents and knowledge for the betterment of the world.

I would also like to express my thanks to my family - “the Leongs” comprising my brothers, sisters-in-law, nieces and nephews for their love and encouragement. Furthermore, I am grateful to my oldest brother, Robert whose sacrificial love and effort during my childhood days have enabled me to achieve my ambition.

Finally but certainly not least, to all my dear friends and my colleagues, thank you for your constant support and encouragement.
I certify that an Examination Committee met on 7th December 2006 to conduct the final examination of Irene Leong Yoke Chu on her Doctor of Philosophy thesis entitled “Effects Of Collaboration In An Online Environment On ESL Tertiary Students' Writing And Reflective Thinking” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

Wan Roselezam Binti Wan Yahya, PhD
Lecturer
Faculty of Modern Languages and Communication
Universiti Putra Malaysia
(Chairman)

Arshad Abdul Samad
Examiner 1, PhD
Universiti Putra Malaysia
(Member)

Dr. Shamala Paramasivam
Examiner 2, PhD
Universiti Putra Malaysia
(Member)

Professor Dr. Thomas M. Duffy
Independent Examiner, PhD
Universiti Putra Malaysia
(Independent Examiner)

HASANAH MOHD GHAZALI, Ph.D
Professor/Deputy Dean of Graduate Studies

Date:
This thesis submitted to the Senate of Universiti Putra Malaysia has been accepted as fulfillment of the requirement for the degree of Doctor of Philosophy.

Mardziah Hayati Abdullah, PhD
Associate Professor
Faculty of Modern Languages and Communication
Universiti Putra Malaysia
(Chairperson)

Chan Swee Heng, PhD
Professor
Faculty of Modern Languages and Communication
Universiti Putra Malaysia
(Member)

Wong Bee Eng, PhD
Associate Professor
Faculty of Modern Languages and Communication
Universiti Putra Malaysia
(Member)

______________________________
AINI IDERIS, PhD
Professor/Dean
School of Graduate Studies
Universiti Putra Malaysia

Date: 8th March 2007
DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.

IRENE LEONG YOKE CHU

Date: 7th December 2006
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEDICATION</td>
<td>ii</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>iii</td>
</tr>
<tr>
<td>ABSTRAK</td>
<td>vi</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>viii</td>
</tr>
<tr>
<td>APPROVAL</td>
<td>x</td>
</tr>
<tr>
<td>DECLARATION</td>
<td>xii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>xvi</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xix</td>
</tr>
</tbody>
</table>

## CHAPTER

### I INTRODUCTION

1.1 Background to the Study 1

1.1.1 The Importance of Writing 1
1.1.2 The Process Writing Approach 3
1.1.3 Computer-Assisted Writing 5
1.1.4 Online Collaborative Learning and Writing 8
1.1.5 Reflective Practice 13
1.1.6 Writing as a Problem–Solving Activity 18

1.2 Statement of the Research Problem 20
1.3 Purpose of the Study and Research Questions 25
1.4 Theoretical Framework For The Study 27
1.5 Significance of the Study 28
1.6 Limitations of the Study 31
1.7 Definition of Key Terms 32

### II REVIEW OF RELATED LITERATURE

2.1 Theoretical Framework 35
2.2 The Process Writing Approach 35

2.2.1 Flower and Hayes’ Cognitive Model 37
2.2.2 Murray’s Model on Creative Process 40
2.2.3 Computer Technology and Writing
2.3 Reflective Practice  
 2.3.1 Moon's Model on the Stages of Reflection  
 2.3.2 Individual Reflection  
 2.3.3 Group Reflection  
 2.2.3 Self-Regulation  
2.4 Online Collaborative Learning  
 2.4.1 Online Collaborative Writing  
2.5 Problem-Solving Tasks  
2.6 Summary  
3.1 The Research Design  
3.2 Samples  
3.3 The Context  
 3.3.1 The Website  
 3.3.2 Collaborative Groups  
 3.3.3 Non-Collaborative Group  
 3.3.4 Online Writing Tasks  
3.4 Data Collection Methods and Instruments  
 3.4.1 Pre-and Post Tests and Writing Tasks  
 3.4.2 Documentation of Reflective Practice Activities and Online Discussions  
 3.4.3 Survey Questionnaires  
3.5 Data Collection Procedure  
3.6 Proposed Timeline for the Study  
 3.6.1 Pilot Study  
 3.6.2 Timeline for the Study  
3.7 Data Analysis  
 3.7.1 Pre-and Post Tests and Writing Tasks  
 3.7.2 Online Interactions  
 3.7.3 Reflective Journals  
 3.7.4 Questionnaires  
3.8 Summary
IV RESULTS AND DISCUSSION

4.1 Introduction 137
4.2 Results 138
   4.2.1 Analysis of Pre-Writing Tests 138
   4.2.2 Analysis of Students' Writing Performances 139
   4.2.3 Analysis of Writing Tasks 147
4.3 Analysis of Students’ Online Exchanges 152
   4.3.1 Active Collaborative Groups 155
   4.3.2 Inactive Collaborative Groups 192
   4.3.3 Social Interactions 204
4.4 Analysis of Students’ Reflective Journals 207
   4.4.1 Surface Learning (Level 1) 208
   4.4.2 Deep Learning (Level 2) 237
   4.4.3 Frequency of Journal Entries and the Quality of Reflection 262
4.5 Attitudes Towards Learning Environment 265
   4.5.1 Collaborative Students’ Attitudes 265
   4.5.2 Non-Collaborative Students’ Attitudes 270
4.6 Attitudes towards Reflective Practice 272
4.7 Attitudes towards Ill-Structured Tasks 279
4.8 Discussion of Research Findings 285

V CONCLUSION

5.1 Summary and Conclusions 318
5.2 Recommendations and Pedagogical Implications of the Study 325
5.3 Suggestions for Future Research 332
5.4 Concluding Remarks 333

REFERENCES 335

APPENDICES 345

BIODATA OF AUTHOR 354
### LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Coding Scheme Used to Describe Utterance in Online Collaboration (Curtis and Lawson, 1999)</td>
<td>78</td>
</tr>
<tr>
<td>3.2</td>
<td>Proposed Time Line for the Study</td>
<td>125</td>
</tr>
<tr>
<td>4.1</td>
<td>Independent Samples Test on Pre-Writing Tests</td>
<td>138</td>
</tr>
<tr>
<td>4.2</td>
<td>Independent Samples Test on Quality of Writing for Collaborative and Non-Collaborative Groups (Pre- Versus Post-Writing Tests)</td>
<td>140</td>
</tr>
<tr>
<td>4.3</td>
<td>Writing Gains of Collaborative Group (Pre- Versus Post-Tests)</td>
<td>142</td>
</tr>
<tr>
<td>4.4</td>
<td>Writing Gains of Non-Collaborative Group (Pre- Versus Post-Tests)</td>
<td>144</td>
</tr>
<tr>
<td>4.5</td>
<td>Overall Writing Gains for Active Collaborative, Inactive Collaborative and Non-Collaborative Groups (Pre- versus Post Test)</td>
<td>146</td>
</tr>
<tr>
<td>4.6</td>
<td>One -Way ANOVA on the Overall Writing Improvement for Collaborative and Non-Collaborative Groups (Writing Tasks)</td>
<td>148</td>
</tr>
<tr>
<td>4.7</td>
<td>One -Way ANOVA on the Overall Writing Improvement for Active Collaborative, Inactive Collaborative and Non-Collaborative Groups (Writing Tasks)</td>
<td>151</td>
</tr>
<tr>
<td>4.8</td>
<td>Analysis of Group Postings during Online Discussions</td>
<td>154</td>
</tr>
<tr>
<td>4.9</td>
<td>Average frequency Counts of Planning Behaviours</td>
<td>156</td>
</tr>
<tr>
<td>4.10</td>
<td>Frequency Counts of Contributing Behaviours</td>
<td>172</td>
</tr>
<tr>
<td>Section</td>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>4.11</td>
<td>Frequency Counts of Reflection and Monitoring Behaviours</td>
<td>187</td>
</tr>
<tr>
<td>4.12</td>
<td>Planning (Pre-Writing) Behaviours</td>
<td>193</td>
</tr>
<tr>
<td>4.13</td>
<td>Frequency Counts of Contributing Behaviours</td>
<td>196</td>
</tr>
<tr>
<td>4.14</td>
<td>Social Interaction Behaviours</td>
<td>204</td>
</tr>
<tr>
<td>4.15</td>
<td>Independent Samples Test on the No. Of Occurrences of Level 1 Reflections for Collaborative and Non-Collaborative Groups</td>
<td>208</td>
</tr>
<tr>
<td>4.16</td>
<td>Independent Samples Test between the Number of Level 1 Occurrences for Active Collaborative, Inactive Collaborative and Non-Collaborative Groups.</td>
<td>210</td>
</tr>
<tr>
<td>4.17</td>
<td>Pearson Correlation Test between the Number of Journal Entries and the Average Task Scores of Active Collaborative, Inactive Collaborative and Non-Collaborative Groups.</td>
<td>211</td>
</tr>
<tr>
<td>4.18</td>
<td>Frequency Counts of Level 1 Descriptors</td>
<td>213</td>
</tr>
<tr>
<td>4.19</td>
<td>Independent Samples Test between the Task Scores of Active Collaborative, Inactive Collaborative and Non-Collaborative Groups.</td>
<td>233</td>
</tr>
<tr>
<td>4.20</td>
<td>Average Counts of Each Stage of Levels 1 Reflections</td>
<td>234</td>
</tr>
<tr>
<td>4.21</td>
<td>Average Counts of Each Stage of Levels 1 and Level 2 Reflections</td>
<td>238</td>
</tr>
<tr>
<td>4.22</td>
<td>Pearson’s Correlation Test between the Average Number of Journal Entries and the Quality of Reflections for Active Collaborative, Inactive Collaborative and Non-Collaborative Groups</td>
<td>263</td>
</tr>
<tr>
<td>4.23</td>
<td>Feedback on Working Collaboratively</td>
<td>266</td>
</tr>
<tr>
<td>4.24</td>
<td>Feedback on Non-Collaborative Writing</td>
<td>270</td>
</tr>
<tr>
<td>Section</td>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>4.25</td>
<td>Students’ Attitudes towards Reflective Practice</td>
<td>273</td>
</tr>
<tr>
<td>4.26</td>
<td>Students’ Feedback on Writing Tasks</td>
<td>280</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The Flower and Hayes' Writing Process Model (1981)</td>
<td>38</td>
</tr>
<tr>
<td>2</td>
<td>The Creative Process Model of Donald Murray (1982)</td>
<td>42</td>
</tr>
<tr>
<td>3</td>
<td>Schon and Argyris' Model on the Learning Processes (1996)</td>
<td>54</td>
</tr>
<tr>
<td>4</td>
<td>Simplified Model of Moon’s Stages of Reflection (King, 2002)</td>
<td>58</td>
</tr>
<tr>
<td>5</td>
<td>Research Design</td>
<td>107</td>
</tr>
</tbody>
</table>
CHAPTER I
INTRODUCTION

Based on a descriptive study, the main aim of this study was to observe and examine the extent to which online interactions and behaviour affect students’ reflective thinking and their writing processes. In order to achieve the purpose of this study, students engaged in both collaborative online writing tasks and non-collaborative online writing tasks were observed. The data obtained from the non-collaborative environment were deemed necessary and invaluable as they lent support to the findings obtained from this study.

This chapter presents the background to the study, the problem statement, the purpose and significance of the study, as well as the research questions that guided this study.

1.1  Background to the Study
1.1.1  The Importance of Writing

Writing is a challenging and stimulating activity that should be viewed as an essential lifetime skill and according to Hughey et al. (1983) student-writers need to understand that mastering the complexities of the writing process not only helps them achieve their immediate goals but also serves them beyond
the confines of the classroom. Learners express their ideas, feelings, hopes, dreams and joys as well as anger, fear and frustrations through writing. Therefore, it is a medium through which students demonstrate their understanding and interpretation of the concepts and theories they have studied over a period of time. Thus, in every writing activity, a writer’s success depends greatly on how well information, ideas, thoughts and feelings are successfully expressed and conveyed to the target reader. The person reading the information should not only be able to understand the points the writer is trying to make but also place as much importance on the message being conveyed.

Therefore, it is undeniable that writing plays a key role in every student’s life within a community and the need to find new and improved ways to enhance students’ writing skills has constantly been a great challenge for educators at all levels of the educational system. For years, various theories and approaches have contributed to the change in writing instruction. One approach that created a major impact on the way writing instruction was viewed was the process approach which emerged since the 1970’s with Emig’s (1971) groundbreaking research on the composing process of twelfth graders (cited in Haneda and Wells, 2000).
1.1.2 The Process Writing Approach

The process approach proposes that writing comprises three major stages: ‘pre-writing’, ‘composing and ‘revising’. The approach evolved over the years and opened up new avenues towards the learning and teaching of this skill. Since then, researchers have become more interested in what actually takes place inside an individual’s mind during the writing process (Murray, 1980).

This cognitive view to writing as illustrated in the writing models championed by Flower and Hayes (1981) and Murray (1980) explain that students are actually thinking and brainstorming as they write. According to these theorists, writing as a process suggests that the writers are the ones in control of their own texts and that they have a meaning they wish to communicate. In an effort to find the best way to express this meaning, the writers go through a constant cycle of thinking, rethinking and brainstorming.

They also maintain that the writing process is an activity that is recursive in nature and writers use problem-solving strategies to construct meaning as they write. Therefore, in order for students to become good writers, the process approach goes beyond just requiring students to revise, revise and revise again. In fact, in many instances during the writing process, writers as individuals or in a group actually pause and reflect on their inner thoughts and make the necessary connections with their own knowledge or
experiences before churning out these thoughts into the written form. Hence, the act of writing empowers as well as manifests the students’ understanding of the subject matter which involves reflective thinking.

According to Wells (1999), writing is a technology that empowers writers’ minds because of their need to express what they think. In their effort to make the meaning of their text clear and explicit for their audience, writers adopt a reflective approach to writing. They create a world of meaning that captures how they feel and what they believe about the subject matter. They begin to interrogate their thoughts and find suitable words and phrases to convey their ideas into the written form. As a result, they begin linking thought with language. The act of reflective thinking coupled with various stages of writing becomes an effective process for meaningful learning to occur.

In fact, with the various capabilities of computers, rewriting and revising are now allowed to be the cognitive processes that they should be rather than be dominated by mechanical aspects of actually putting words down on paper (Simic, 1994). The integration of computers into writing classrooms have given students the advantage to approach their writing from a cognitive perspective as they try to find the best ways to express their thoughts into words. Not having to deal with the burden of rewriting their drafts by hand, student writers have the opportunity to exercise their cognitive abilities during
their writing process by focusing more on the meaning of the texts they want to produce. Therefore, today the computer is viewed as the cutting edge technology that has enabled students to focus their attention on the actual act of writing, thus providing opportunities for the stimulation of metacognitive abilities to take place.

1.1.3 Computer-Assisted Writing

The combination of the process writing approach and the use of computer technology has revolutionised the way writing is learnt and taught. With the advent of computers in the late 70's, the writing world underwent a tremendous change. Writing instructors have viewed this change as the long-awaited opportunity to help students become better writers.

Computers have given writers the freedom and the ability to make various changes to their written product and this has allowed them to become better revisionists. Students no longer dread the thought of revising and more importantly revising is no longer seen as a correction method for spelling or punctuation errors. With the assistance of the computer and its various tools and applications, students now have the opportunity to engage in the writing process while trying to experiment with language forms and structure.
The various functions and capabilities of computers have also enabled writers to take their time to stand back, ponder and reflect on what they have written and to make suitable changes on their texts. The use of computers has empowered writers with the ability to make desirable changes to their text and to view their writing from different perspectives. As a result, students are now beginning to enjoy the writing activity and are now more ready and willing than before to revise.

Proponents of the writing process would agree that the more one revises the better the finished product will be. Unlike the traditional method where revisions were a means to a grammatically error-free end product, the use of computers has made it possible for students to use revisions to convey their message more effectively and accurately to the reader.

Computers are designed to help writers to edit and manipulate the language with ease and as a result, they are free to execute more complex changes to their texts, as rewriting is no longer as mechanical or painful as it used to be. In the process, the relationship between the writer and the text changes. The computer screen allows writers to distance themselves from the texts and scrutinise the way they write. By doing so, they get into a relationship with the text as they think and experiment with as many possible ways they can to put their thoughts and ideas into writing. Computer technology has evolved so extensively over the years that word processors offer spelling and