

ผลกระทบของการเขียนผ่านสื่อคอมพิวเตอร์ที่มีผู้เข้าสอบเป็นศูนย์กลาง  
ต่อความสามารถในการเขียนภาษาอังกฤษของนิสิตไทยระดับอุดมศึกษาชั้นปีที่หนึ่ง



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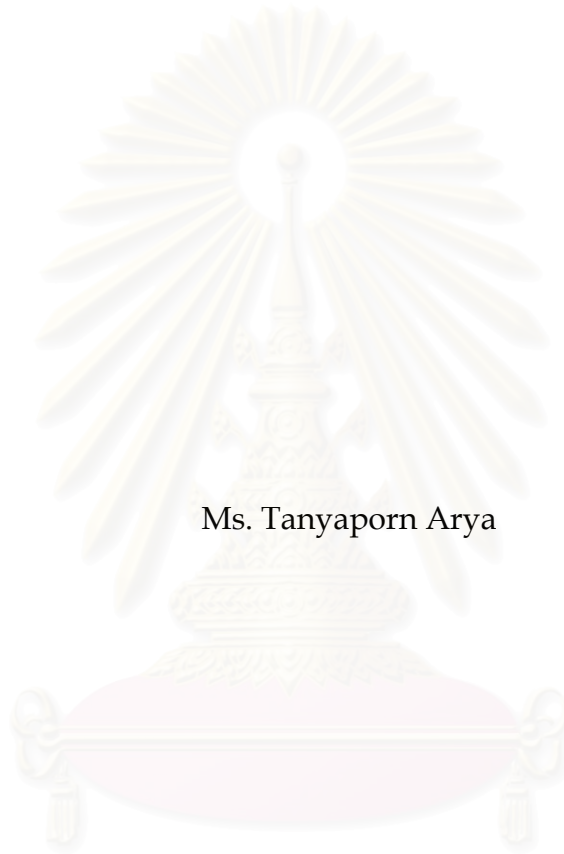
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ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

THE EFFECTS OF A TEST TAKER-CENTERED COMPUTER-BASED  
WRITING TEST ON THAI FIRST YEAR UNIVERSITY STUDENTS'  
ENGLISH WRITING PERFORMANCE



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สถาบันวิทยบริการ  
จุฬาลงกรณ์มหาวิทยาลัย

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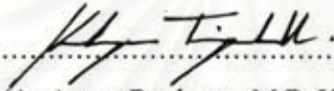
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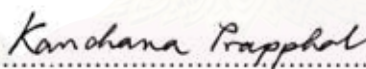
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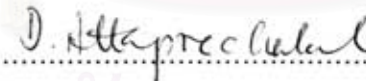
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ธัญญพร อารียา: ผลกระทบของการเขียนผ่านสื่อคอมพิวเตอร์ที่มีผู้เข้าสอบเป็นศูนย์กลาง  
ต่อความสามารถในการเขียนภาษาอังกฤษของนิสิตไทยระดับอุดมศึกษาปีที่หนึ่ง  
(THE EFFECTS OF A TEST TAKER-CENTERED COMPUTER-BASED WRITING  
TEST ON THAI FIRST-YEAR UNIVERSITY STUDENTS' ENGLISH WRITING  
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อ. ที่ปรึกษา: ศ. ดร. กาญจนา ปราบพาล, ๓๕๖ หน้า

งานวิจัยนี้มีจุดมุ่งหมายเพื่อศึกษาว่าฟังก์ชัน หรือเครื่องมือช่วยในการเขียน และการเขียนร่างหลายฉบับ  
มีผลกระทบต่อความสามารถ และกระบวนการเขียน เมื่อเขียนผ่านสื่อคอมพิวเตอร์ที่เน้นผู้สอบเป็นศูนย์กลาง  
หรือไม่ นอกจากนี้ ผู้วิจัยยังศึกษาพฤติกรรมการเขียน และ เจตคติของผู้เข้าสอบ กลุ่มตัวอย่างเป็นนิสิตชั้นปีที่  
๑ จำนวน ๑๔๔ คน จากคณะพาณิชยศาสตร์และการบัญชี จุฬาลงกรณ์มหาวิทยาลัย โดยการเลือกตัวอย่างแบบ  
เฉพาะเจาะจง กลุ่มตัวอย่างแบ่งเป็นสี่กลุ่มเพื่อการทดสอบที่ต่างลักษณะกัน ในแต่ละกลุ่มแบ่งเป็นสามระดับตาม  
ความสามารถทาง การเขียน โดยใช้เกณฑ์จากคะแนนในการสอบเขียนภาษาอังกฤษด้วยคอมพิวเตอร์

เครื่องมือที่ใช้ในการวิจัยได้แก่ ๑. Test taker-centered Computer-based Writing Test (T-CBWT)  
เป็นการสอบposttestผ่านสื่อคอมพิวเตอร์ ที่อนุญาตให้ใช้ฟังก์ชันที่พบได้ในโปรแกรมMS Word และกำหนด  
ให้เขียนร่างหลายฉบับ ๒. มาตรฐานประมาณค่าเชิงวิเคราะห์ ใช้วัดความสามารถในการเขียนสามประเด็นหลัก  
คือ เนื้อหา การเรียบเรียง และภาษา ๓. แบบสอบถามประเภท Likert Scale และ คำถามปลายเปิด ๔. ชุดคำถาม  
สัมภาษณ์ใช้ศึกษาพฤติกรรมการเขียน การวิเคราะห์ข้อมูลใช้วิธีวิเคราะห์ความแปรปรวนแบบสองทาง สถิติ  
Kruskal-Wallis  $H$  และ Mann-Whitney  $U$  รวมทั้งวิธีวิเคราะห์เชิงคุณลักษณะ ได้แก่ การวิเคราะห์เนื้อหาของ  
ร่างงานเขียน การรายงานปากเปล่า และเจตคติต่อแบบทดสอบ

ผลจากการวิเคราะห์ไม่พบว่าเครื่องมือช่วยเขียนหรือการเขียนร่างหลายฉบับมีผลกระทบต่อคุณภาพโดย  
รวมของงานเขียนเมื่อเทียบระหว่างกลุ่มสอบสี่กลุ่มที่ต่างลักษณะกัน แต่เมื่อเปรียบเทียบระหว่างกลุ่มที่มีระดับ  
ความสามารถต่างกันนั้น พบว่าเครื่องมือที่ให้ผู้สอบใช้ระหว่างการเขียน ช่วยให้ผู้สอบพัฒนาในด้านเครื่องหมาย  
วรรคตอน และตัวสะกด นอกจากนี้ผลการวิเคราะห์พบว่า การร่างงานเขียนมีผลต่อการเขียนเนื้อหาของผู้สอบใน  
กลุ่มระดับความสามารถสูง ที่กำหนดให้สร้าง จากการวิเคราะห์งานเขียนในเชิงคุณภาพพบว่า ผู้สอบบางส่วนจาก  
กลุ่มความสามารถด้านการเขียนระดับกลาง และระดับอ่อนที่กำหนดให้เขียนฉบับร่าง ได้พัฒนาเนื้อหาของงาน  
เขียนในระดับประโยคซึ่งอาจมีผลต่อการพัฒนาคุณภาพของงานเขียนโดยรวม ในภาพรวมการใช้ฟังก์ชัน และการ  
เขียนร่างหลายฉบับอาจส่งผลช่วยให้ผู้สอบทำแบบทดสอบเขียนได้ดีขึ้น นอกจากนี้ผลการวิเคราะห์ยังชี้ให้เห็น  
ว่า ผู้สอบที่มีระดับความสามารถต่างกัน ส่วนมากเขียนในแบบย้อนซ้ำขั้นตอน (recursive style) ซึ่งตรงกับ  
รูปแบบกระบวนการเขียนที่เป็นที่ยอมรับ

ท้ายสุดพบว่าผู้สอบโดยทั่วไปมีเจตคติทางบวกต่อการสอบ T-CBWT และ แสดงความสนใจที่จะสอบ  
เขียนแบบ T-CBWT อีก ดังนั้นหากการทดสอบด้วยวิธีนี้ได้รับการปรับปรุงและศึกษาในแง่ผลกระทบย้อนกลับ  
(washback effect) โดยต่อเนื่องก็อาจเป็นประโยชน์ในระยะยาว ต่อวิธีการทดสอบความสามารถในการเขียน  
ภาษาอังกฤษ และวิธีการเรียนการสอนเขียนภาษาอังกฤษอีกด้วย

สาขาวิชา ภาษาอังกฤษเป็นภาษาแม่..... ลายมือชื่อนิสิต..... ธีรภัทพร อารียา  
ปีการศึกษา..... ๒๕๕๐..... ลายมือชื่ออาจารย์ที่ปรึกษา.....



# # 468 96709 20: MAJOR ENGLISH AS AN INTERNATIONAL LANGUAGE  
 KEY WORDS: COMPUTER-BASED WRITING TEST/WRITING PERFORMANCE/  
 WRITING PROCESSES/WRITING BEHAVIOR/DRAFT WRITING/REVISION  
 CHANGES

TANYAPORN ARYA: THE EFFECTS OF A TEST TAKER-CENTERED  
 COMPUTER-BASED WRITING TEST ON THAI FIRST-YEAR UNIVERSITY  
 STUDENTS' ENGLISH WRITING PERFORMANCE.

THESIS ADVISOR: PROF. KANCHANA PRAPPHAL, Ph.D., 356 pp.

The objectives of the present study were to investigate the effects of facilitative features and required multiple drafts on the writing performance and processes of EFL students in a test taker-centered computer-based writing test (T-CBWT); the computer writing behaviors of the test takers; and the attitudes of the test takers towards the T-CBWT. Subjects were 144 Thai first year undergraduates of the Faculty of Commerce and Accountancy year 2006. They were purposively sampled and randomly assigned to four equal test groups. Subjects were also classified into three writing proficiency levels using computer-based writing pretest (CBWT) scores as a basis.

Research instruments included (1) the T-CBWT, the posttest test with facilitative features allowed and required multiple drafts (2) analytical rating scales measuring three major aspects of content, organization and language use (3) retrospective questionnaires and (4) stimulated retrospective interview questions. Quantitative data were analyzed via two-way analysis of variance, Kruskal-Wallis  $H$  and Mann-Whitney  $U$  statistics. Qualitative data were analyzed through textual analysis of test takers' written drafts, and content analysis of verbal reports and attitudes towards the T-CBWT.

Findings from the quantitative analyses in this study seem to provide evidence that facilitative features assist test takers across writing proficiency levels in the improvement of mechanics (spelling and punctuation) but not the overall quality of the essay. In addition, imposed multiple drafts seem to have some positive influence on the content (topic development & supporting ideas and clarity & explicitness scores) of test takers in the advanced writing proficiency level who were in the 'with drafts' test condition. Furthermore, textual analyses reveal that some test takers of the intermediate and low-intermediate writing proficiency levels in the 'with drafts' test condition heavily performed content-related changes at the sentence level that were instrumental in improving the overall quality of their essays. These findings together suggest that required multiple drafts and facilitative features might ultimately be effective in assisting test takers in performing their best on a writing test. Findings also indicate that a majority of subjects across writing proficiency levels wrote in a recursive style, confirming established models of writing processes.

Finally, test takers in general had a positive outlook towards the T-CBWT and have shown interest in opting to take the T-CBWT again. With further development and research especially in relation to washback, the T-CBWT serves as a potentially practical approach to assess writing and may positively impact the EFL learning and teaching of writing.

Field of study English as an International Language

Student's signature.. *Tanyaporn Arya*

Academic Year .....2007.....

Advisor's signature.. *Kanchana Prapphal*

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# CHAPTER I

## INTRODUCTION

With a focus on writing, this study stems fundamentally from the concern for authenticity, the quest for fairness, and a reaction to the movement towards the individualization of language assessment (de Jong and Stevenson, 1990). Alderson (1990) states that the use of computer technology and its advantage of speed, patience, and memory can bring about changes in test methods and make individualization possible. Additionally, he has indicated that many seem to assume that while exercises aid learning, tests do not. “[Tests] simply assess whether learning has taken place. Such a distinction is clearly overly simplistic, however, if only because it is evident that learners can learn from tests (Alderson, 1990: 23 Parentheses added).” It is with hope that the test taker-centered computer-based writing test implemented in this study would help test takers learn and somehow gain from the test taking experience instead of merely being assessed by it.

### 1.1 Background

Since communication across cultures has now become increasingly essential, particularly in this information age, the ability to write effectively is gaining a more significant role in both second and foreign language education. Accordingly, there has been a continually growing demand for valid and reliable methods to assess the ability to write (Weigle, 2002: 1). In the English as a foreign language realm, the method of writing assessment has almost always dictated how writing would be taught in the classroom.

Researchers (Chen, 2002; Gao, 2007; Kim & Kim, 2005; Pidchamook, 2003; Raimes, 1984; Tagong, 1991; Taylor, 1984; Zamel, 1985) have observed writing classes, whose main emphases are on the final product, form, accuracy and correctness of the essay, as opposed to the process of writing. This mirrors the way writing is assessed. The following observation made by Tagong (1991: 123) exemplifies how writing has been traditionally taught and evaluated in Thai classrooms:

*...the method of composition in schools in Thailand was primarily product-oriented. In the elementary and secondary school, it was customary for a teacher to assign a topic or theme for the students to write usually as homework and sometimes during the class session. Students were given no opportunity to do multiple drafts, nor did they receive comments from a teacher during their composing. Once their first draft was finished, they handed it in for a grade. On the returned and graded essay, the teacher rarely suggested any changes since the student was not to rewrite the same essay again. What appeared on paper, in red ink, were primarily crossed-out words with suggested substitutions or comments about the use of right words for the right person or the right occasions, and the use of proper connections which abound in Thai language. Certain connectors have to be used with some particular words, but not with other words. The idea was emphasized, but not as much as surface features.*

Indeed pedagogical and evaluation practices in foreign language writing in Thailand today are generally not very different from what they have been traditionally, be it at the secondary school level or university level. Hence, the problem that follows is learners remain unskilled writers due to how they have been trained under the product-oriented approach and more indirectly yet powerfully, due to the method in which they are assessed in both high-stakes tests and low-stakes tests that require them to complete a single-draft essay within a limited amount of time. This, in turn, results in the misconception that effective writing can be accomplished within a single draft and consequently a negative washback effect occurs; learners may seek additional tutoring classes whereby writing is again taught under the controlled composition approach. This cycle goes on.

Nevertheless, although efforts to emphasize writing as a process in many ESL contexts and even in the more non-conventional EFL classrooms have been more prevalent than in the past, the same does not hold true for the way writing is assessed. This is supported by Hinkel (2002: 46) who has noted that although methodology in the teaching of ESL writing has veered towards process-centered approaches over the last two decades, the assessment of ESL writing skills found in standardized and institutional ESL placement tests has remained focused on written products, and not on writing processes. Recently, though, following the process approach to writing pedagogy, and in the attempt to make direct writing tests more



authentic, some researchers have begun to examine ways to assess writing in a more process-oriented manner (e.g. Cho, 2003; Y-J Lee, 2006), even integrating the use of computers and word processors as tools for writing (See Kim, 2002; Y-J Lee, 2006; Li, 2006.).

The number of studies on computer-based writing assessment has been growing ever since the advancement of technology has allowed us to utilize computers both as learning and as teaching tools. However, many such studies have concentrated on L1 writers (e.g. Bridgeman & Cooper, 1988; Chadwick et al., 1989; Harrington et al., 2000; Hawisher, 1987; Johnson et al., 1984; Neuwirth, 1990; Owston et al., 1992; Powers et al., 1994; Russell & Haney, 1997). The available studies on L2 writers in this vicinity mostly focus on ESL writers who have had extensive exposure to the target language or are learners at an advanced level of English proficiency (e.g. Y-J Lee, 2002; Li, 2006; Li & Cumming, 2001; Phinney & Khouri, 1993).

In addition, these studies on computer-based writing tests have yet to examine how the complete use of computer functions that a number of learners, as frequent computer-users, are familiar with (i.e. the spell checker, grammar checker, dictionary or thesaurus on the Microsoft Word processor), have an effect on writers' performance or EFL learners' writing processes. As Salomon (1988: 123) maintains, computer-based tools can lift away part of the intellectual burden of the writing task by tending to lower-level functions of the task, allowing learners to work on higher levels. The current study then aims to investigate how EFL writers use these computer-based tools to aid them with their writing; in particular, to study how the various facilitative functions made available by the MS Word processor affects EFL writers' written products and writing process in a test situation. That these computer tools will indeed aid them in "lower level" operations and enable them to attend to more complex operations of the task will be investigated.

Another aspect that most studies on process-oriented computer-based writing assessment have not addressed is the possibility of incorporating self-evaluation into the test procedure as an aid to writing. Although researchers (e.g. Lewkowicz, 1997) have experimented with stimulus material, such as reading texts, to a writing test situation, no study, to my knowledge has added a self-assessment component as a variable of interest. As experts in the field (e.g. Nisbet & Shucksmith, 1986 as cited in O'Malley & Chamot, 1990: 48) have suggested, monitoring skills are key processes

that distinguish good learners from bad learners. Self-evaluation is one crucial element that provides opportunities for learners to check how effective they have communicated (O'Malley & Chamot, 1990: 179). That said, a self-evaluation component accompanied by the above-mentioned computer-based helping tools are considered an ensemble of facilitative features to be examined together as a major factor in this study.

Further, most studies investigating the process approach to the assessment of writing have found that many students take advantage of the structured process to increase the quality of their writing through the engagement of revision (e.g. Kim, 2002; Y-J. Lee, 2006). The process-oriented approach to assessing writing may enable test takers to produce better quality texts when given the opportunity to revise (Cho, 2003); however, in many contexts to organize a full-scale process-oriented writing test (e.g. a work-shop-based writing test) is not nearly feasible. It is proposed in this study that simply to incorporate draft writing as part of the task could also create a slightly more authentic means to write in a test situation as well as provide test takers with a chance to improve their written product. Hence, in addition to the facilitative features mentioned, draft writing is another factor anticipated to yield positive results in EFL test taker writing performance.

How these factors (facilitative functions and required drafts), when combined or utilized separately, affect the written product and writing processes will unveil valuable implications that would direct test developers and writing instructors towards more effective means to develop EFL writers through assessment and instruction. Furthermore, the researcher feels that by way of merging computer technology, its facilitative devices, a self-evaluation component, together with required draft writing is at the same time addressing issues of authenticity and fairness in writing assessment and impartially rendering the test situation in favor of the test taker. Should a test taker-centered computer-based writing test (T-CBWT), which is a test with the concept of 'bias for best' (See Fulcher, 2000: 97.) show potential of future implementation would initially depend on the outcome of this study. In fact, the researcher sees the urgency to investigate this issue in a day and age where effective writing is called for, as the insights gained from this study may well benefit EFL learners locally as well as contribute to the knowledge in the field of writing assessment globally.

## 1.2 Objectives

The objectives of this study are:

1. To study the effects of facilitative functions allowed in the T-CBWT on test takers' "English writing performance" and "English writing process"
2. To study the effects of required multiple drafts in the T-CBWT on test takers' English writing product and process
3. To study whether facilitative functions and required multiple drafts when combined or implemented separately have a significant effect on test takers' English writing performance
4. To explore participants' computer writing behaviors and opinions towards the T-CBWT

## 1.3 Research questions

This study seeks to find answers to the following questions:

1. Do the facilitative functions (thesaurus, English-Thai dictionary, spell-check, grammar-check, self-reflective questions) in the T-CBWT have any significant effect on test takers' English writing scores and writing process?
2. Do the required multiple drafts in the T-CBWT have any significant effect on test takers' English writing scores and writing process?
3. Which combination of factors (facilitative functions and/or the required multiple drafts) of T-CBWT has a greater significant effect on test takers' English writing scores?
4. What are the computer writing behaviors of the participants and their opinions towards the T-CBWT?

## 1.4 Definition of terms

**Writing performance** is defined as how a test taker performs on a piece of writing based on a set criterion. The piece of writing should contain substantial content, be organized in a formal manner, use appropriate vocabulary and written for an academic setting. In this study, written genre will be limited to evaluative

essays. The evaluative essay, sometimes called an argumentative essay, is one which logically examines a standpoint set out by someone else. In an evaluative essay, the writer criticizes or defends the position articulated in the statement or article being discussed. A judgment is made about the statement or article and then the judgment is defended. A good evaluative essay supports the judgment with sufficient evidence, sound reasoning and effective language.

**Writing process** has been viewed differently, being a cognitive activity taking place in an individual's thoughts (See, for example, Flower & Hayes, 1981; Bereiter & Scardamalia, 1987; Kellogg, 1996.) or a social activity whereby writers belong to a community, interacting with others and socially constructing the written piece (See, for instance, Celce-Murcia and Olshtain (2000). In this study, writing process specifically refers to test takers' revision processes between drafts.

**Writing behavior** in this study encompasses test takers computer writing practices in both non-test situations and in test situations also pertaining to how subjects make use of facilitative functions available on the MSWord program as well as test takers' writing strategies as delineated by Mu (2005) (See Figure 2.2).

**Effective writing** is defined according to suggestions from the TOEFL iBT Tips cited in Educational Testing Service (2005: 20) as a piece of writing with one main idea and some major points to support the idea. The piece of writing should be planned. The writer should develop the essay using reasons, examples, and details. The essay should express information in an organized manner, using effective linking words or transitional phrases to connect ideas; using a range of grammar and vocabulary for effective expression; using grammar and vocabulary accurately and idiomatic expressions appropriately; and following the conventions of spelling, punctuation, and layout.

**Test Taker-centered Computer-based Writing Test (T-CBWT)** is a proficiency test used to measure the writing skills of EFL learners who are at the undergraduate level. The test is computer-based, which means that the computer is used as a medium, not as a tool for rating the written pieces. It is a test that will be completed using the Microsoft Word processor. It is test taker-centered, which means it is designed to 'bias for the best' (See Fulcher, 2000: 97) keeping the test taker's best interest in mind by providing test takers with facilitative functions, required multiple drafts, and self-reflective questions.



**Facilitative functions** are functions or features which serve as resources that test takers may consult during the T-CBWT. They include the thesaurus, translation (English-Thai dictionary), spell check, and grammar check made available through the Microsoft Word processor. Another component is the self-reflective reminder questions checklist that would help the test taker reflect during the planning, monitoring, and evaluating stages of writing.

**Self-reflective reminder questions** are questions in a checklist form that will remind the test taker of what steps should be taken throughout the writing task. It is based on the belief in the power of self-assessment to improve one's writing. Detailed explanation of this feature is found in Chapter III under Research Instruments.

**Track changes** is a function found in the Microsoft Word program. It helps keep record of any alterations (inclusive of changes, additions, or deletions) made to a written piece in an infinity of levels. Any changes made to a piece of writing would either be marked in bright colors or noted in balloons in the right margin of the piece. However, the tracked changes in this study will not be displayed while the writer is writing so as not to distract the writer. Tracked changes will only be studied by the researcher.

**Linear writing** in a literal sense implies that a writer produces one sentence at a time, word by word, until the text is complete (Severinson Eklundh, 1994: 203). In this study, linear writing or linearity would refer to writing in a sequential manner where the writer separates the writing stage from the revision and editing stages.

**Non-linear writing** or recursive writing is when a writer writes and repeatedly adds new content, removes or changes content within the text which may or may not have already been completed, altering and shaping its global structure gradually (Severinson Eklundh, 1994: 204).

**English as a foreign language (EFL)** refers to a language that is taught and learnt for use in a setting where English is not the primary language, while English as a second language (ESL) refers to the teaching and learning of English in settings where English is the primary language.

## 1.5 Scope

This study employs descriptive and quasi-experimental research designs (Isaac & Michael, 1995), particularly a two by two factorial pretest posttest control group design (Campbell & Stanley, 1963). Variables studied include facilitative functions and required multiple drafts, which are the independent variables, and the T-CBWT scores, the dependent variable. Data was collected using the following instruments and data collection methods: a computer-based writing test (CBWT), a Test taker-centered Computer-based Writing Test (T-CBWT), retrospective questionnaires and interviews. The writing task in the T-CBWT is of the evaluative or argumentative type. The population is non-native speakers of English in their first undergraduate year at Chulalongkorn University in the Faculty of Commerce and Accountancy. The data analysis methods include quantitative methods: Analysis of Variance (ANOVA) as well as qualitative methods: textual analysis and content analysis.

## 1.6 Limitations

Some limitations of this study are noted as follows:

1. According to Krejcie and Morgan's (1970: 608) table for determining sample size, the sample size representative of a population of 500 is 217. Thus, the number of (144) subjects who participated in this study may not be an acceptable representation of the population of 525. Furthermore, the population purposively selected for this study is that of Thai first-year Chulalongkorn University undergraduate students studying in the Faculty of Commerce and Accountancy in the academic year 2006; therefore, the results of the study may be generalized only to populations having similar characteristics and language backgrounds.
2. The Test Taker-centered Computer-based Writing Test is a proficiency test that can be applied to students from all fields. However, gathering data from subjects studying in the Faculty of Commerce and Accountancy restricts the researcher to narrow the generalization of the results to include students from related fields (e.g. Economics, Business Education, and Business Law), and not other fields, who share similar English language backgrounds. Students studying in other

science or humanities-related faculties may have also come from similar backgrounds as students of the Faculty of Commerce and Accountancy.

3. General English Proficiency level was not controlled for in the study.
4. The instrument, namely the Test Taker-centered Computer-based Writing Test used in this study comprises writing processes employing the Microsoft Word and its functions to suit the purpose of the study and may not be generalized to other types of computer-based writing tests.
5. Essays written by test takers in this study are evaluative or argumentative essays, with controlled length and assigned topics; therefore, they may not be generalized to essays of other rhetorical types.
6. Due to limitations of computer lab availability and time conflicts, it was not possible to deliver the T-CBWT, to all participants within one session. However, the test administration followed the same procedures across sessions.

### **1.7 Assumptions**

The following are assumptions borne in mind prior to conducting the study:

1. Participants are computer literate or have at least some basic knowledge of how to operate the computer, specifically the Microsoft Word processor. They are also able to use an English computer keyboard.
2. Participants are willing to do their best in completing the writing tests and to answer the retrospective questionnaires and questions during the interviews truthfully.

### **1.8 Significance**

The findings of this study are expected to enrich our knowledge of how best to assess writing using computer technology. Theoretically, the findings of this study will contribute to a better understanding of Thai EFL writing processes or strategies in a test situation and the motives underlying such processes. The study of subjects' drafts will reveal certain characteristics of the writing processes of subjects, allowing us to observe closely how writers develop and organize their ideas or how

they revise their texts. We will also be able to examine how subjects take advantage of the facilitative functions available to them. Comprehension of these processes will provide insights into how EFL writers can effectively perform in a test situation or what it is that impedes their writing performance.

In turn, this knowledge of EFL writing in a computer-based testing environment will be useful for the development of EFL writing pedagogy. Writing processes as observed in this study will reflect how writing is learnt and taught in schools, pointing to possible directions to the improvement of English writing instruction both at high school and university levels. Moreover, the area of computer-assisted language learning may also make use of the findings of this study.

The T-CBWT, with some adjustments, may potentially become a useful approach to assess writing for such purposes as summative tests or even placement and proficiency tests, especially for learners who are frequent computer users or who have regular access to computers. As the T-CBWT is administered with the concern about biasing for the best, using this writing test as a summative or formative test may ultimately yield positive impact on the way L2 writing is taught and learnt in the Thai EFL context. Lastly, the T-CBWT serves as a launch pad for future development of other computer-based writing tests that can be better implemented, administered, marked and at the same time fair for test takers. Consequently, it will assist educators and test users in the validation of writing assessments.

## **1.9 Overview**

Chapter 1 has presented the overall background and rationale of the study. The objectives and research questions corresponding to the current issue in the area of computer-based writing tests have been outlined. Additionally, this chapter has described the scope, assumptions, definition of terms, limitations as well as the significance of the study.

Chapter 2 reviews literature pertaining to issues and research approaches about which this study is concerned, discussing the nature of writing, second language process writing, strategies second language learners employ when writing, second language revision strategies, writing assessment and issues of concern when assessing writing.



Chapter 3 focuses on research methodology, presenting the research design, stages of research, population and sample, research instruments, data collection and analyses, respectively.

Chapter 4 reveals the results of the study, answering the four research questions. The chapter consists of four major sections. The first looks into the effects of the T-CBWT on written performance, answering the first part of research questions one and two and research question three. The second reports the effects of the T-CBWT on writing processes addressing the second part of research questions one and two. The third concerns test takers' writing behaviors, responding to the first part of research question four. The final section looks into the second part of research question four reporting on test takers' opinions towards the T-CBWT.

Chapter 5 summarizes and discusses the findings, describes practical implications for writing assessment and instruction and offers recommendations for future research.



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## CHAPTER II

### REVIEW OF RELEVANT LITERATURE

An abundance of research has been conducted on writing, taking interest in the numerous variables that affect second language writing performance in both test and non-test situations. This chapter reviews literature relevant to the underlying concepts of this study. The first part of the literature review discusses the nature of writing, looking into models of writing processes and the different perspectives towards writing and writing pedagogy. The second part concerns second language process writing by looking into research conducted on second language process writing. The third part examines strategies second language learners employ when writing and focuses on second language revision strategies. The final part covers writing assessment and the various issues of concern when assessing writing.

#### **2.1 The nature of writing**

To assess writing first necessitates the understanding of writing and its nature. How writing has been viewed in different perspectives will provide a broad foundation that links us to the philosophy behind a "Test taker-centered Computer-based Writing Test". Writing is generally a challenging task for both native and nonnative speakers, as it involves a multiplicity of skills (Kroll, 1990b: 140). Even for the native speaker, writing is not naturally acquired. The ability to write can only be mastered through training, instruction, practice, and experience (Grabe & Kaplan, 1996: 6). The difficulty of writing is mainly due to the large number of constraints, including the manipulation of several structural levels, such as the text structure, paragraph structure, sentence structure, and word structure. All these, as Collins and Gentner (1980: 67) have observed, must be fulfilled at the same time when expressing an idea. Researchers have long been interested in the cognitive processes that are carried out before such an idea can be expressed.

### 2.1.1 Writing processes

The ways researchers have viewed writing have evolved throughout the years. Some see writing as static, as an object that can be dissected and analyzed. Such a model views writing as being a product. Other models see writing as an ongoing process. The very first paradigms viewed the writing process as being a linear progression, a series of separate sequential steps, thus named, the 'Stage Models of Writing'. One of the most prominent examples of the stage model is Rohman's (1965) Prewrite-Write-Rewrite model (Flower & Hayes, 1981: 367). However, because stage models of writing, which normally consist of planning, prewriting, drafting and revising stages, mirror the growth of the written product, rather than the internal processes of the individual producing the written piece, researchers then ventured into the cognitive aspect of writing processes.

Probably the earliest study focusing on the cognitive processes of writing was conducted by Flower and Hayes (1981: 365-387). Their findings based on protocol analysis, have established a cognitive process model of writing. Seeing writing as a thinking process (Furieux, 1998), Flower and Hayes explain that writing involves three major elements: the task environment - the rhetorical problem or the assignment and the evolving text, the writer's long-term memory in which knowledge of the topic, the audience, various writing plans are stored; and the writing processes which basically consist of planning, translating, and reviewing.

Flower and Hayes (1981) explain further that planning incorporates three sub-processes. The first sub-process is generating ideas which involve retrieving relevant information from the long-term memory. Organizing ideas is the second sub-process which has to do with grouping ideas and forming new ideas. The third yet major planning sub-process includes goal setting. Flower and Hayes argue that developing and refining one's goals is not restricted to the initial "pre-writing stage", but can be an on-going process throughout the composition.

Translating, according to Flower and Hayes (1981), is the process whereby meaning, even images, and plans are converted into written forms. Reviewing could be done either for the purpose of further translation or for systematically evaluating or revising, which are two sub-processes of reviewing. Hayes, Flower, Schriver, Astratman, and Carey (1987) later reintroduced four sub-processes for reviewing:

task definition, evaluation, strategy selection, and modification of text. These sub-processes represent a clearer-cut exemplification of the reviewing process. In sum, Flower and Hayes' cognitive process model emphasizes that during the entire act of composing there is interaction among the various components of the process and sub-processes as well as non-linear and repeated cognitive activity.

Having criticized Hayes and Flower's model for assuming a single writing process for both proficient and less proficient writers (Mu, 2005: 3), Bereiter and Scardamalia (1987) see the writing process as being composed of two cognitive models. The knowledge-telling model, which is employed by less skilled writers, involves converting oral language into written forms. While the knowledge-transformation model, employed more by expert writers, is concerned with more complex writing processes, such as information ordering, relative salience of information, audience expectation and logical pattern of argument organization. However, recursive and interactive stages of the writing processes are again key concepts found in Bereiter and Scardamalia's (1987) model.

Five writing processes were distinguished by Burnett (1994), namely inventing and exploring, planning and organizing, drafting, revising, and editing. In the first stage of inventing and exploring, knowledge is assessed and available sources are sought. Planning, Burnett argues, may occur simultaneously with inventing and exploring. When planning, writers will think of scope, content, purpose, task, audience, organization, and design. Again, overlapping may occur during the drafting stage, where writers may also still be planning. Similarly, the revising stage, where writers examine choices in content structure, organization, etc., may overlap with the drafting stage. In his model, while editing has more to do with the correction of grammatical and mechanical errors, it is considered similar to revising and may occur at anytime of the writing process.

To add on to earlier knowledge that viewed writing as an individual's cognitive process, researchers started investigating other factors that affect the writing process. Researchers soon viewed writing as more of a social process, taking up the conversation or social constructionist mode. This process model argues that a writer is part of a social community in which the writer socially constructs a piece of writing, receiving feedback from peers or readers through dialogue and



conversation. Responding to a multitude of voices as well as written texts, the writer shapes and molds the written piece.

Hayes (1996), for instance, expanded the previous Flower and Hayes (1981) model by taking into consideration context factors, such as audience, collaborators, and composing medium. Such context factors influence cognitive processing in goal setting, motivation, task assessment and planning. Reading is a key component for this model since, to Hayes, writing processes rely heavily on knowledge in the working memory.

Taking second language (L2) writing processes into account, Grabe and Kaplan (1996) maintain that context, cognitive processing, and verbal processing must be incorporated. According to this model, the writing process starts with internal goal setting in the verbal working memory. This internal goal-setting process takes a mediating position between context and verbal processing. Contextual factors, which include situation (participants, setting, task, text, and topic) and performance (textual output), interact with cognitive and verbal processing (language competence, knowledge of the world, and on-line processing assembly). In this model like in previous ones, all components interact with each other.

Also taking factors that influence the writing process into consideration, Celce-Murcia and Olshtain (2000) explain the writing process as the interaction of top-down and bottom-up processing. The top-down processing has to do with the writer's background knowledge on content, discourse knowledge and awareness of goals and audience, while bottom-up processing is related to language knowledge (i.e., grammar, spelling, vocabulary, punctuation and cohesion) and editing. According to this model, writers use a combination of these two forms of processing to produce texts and these two types of processing can work together only through the activity of revision and metacognition, which connect these two types of processes. Therefore, evaluation and reformation strategies are crucial throughout the writing process.

Although the various models of writing processes may be different in the conceptualization of details, all see writing as involving some stage of planning, composing and reviewing. These processes are interactive, circular, and overlap with each other. In the present study, the researcher follows the stage model of

writing, as it is deemed appropriate for structuring the writing test tasks and utilizing this model allows tasks to be carried out within a limited amount of time. Within the stage model, test takers are required to follow certain stages of writing (producing three drafts, each draft concentrating on different tasks –planning, writing, revising and editing) while their cognitive writing processes will, naturally, be in a recursive manner.

In a writing test situation, the written product, rather than the writing process, is normally of utmost interest. However, the writing process is brought into a Test taker-centered Computer-based Writing Test situation so that test takers can focus on the development of their product through a clear-cut process. The imposed drafts are of dual importance. Firstly, test takers can narrow their focus on different aspects of the task with each draft they write. Secondly, through this process, the idea that effective writing can only be produced through thorough revising and editing may be instilled.

### 2.1.2 Process writing

The term “process writing”, different from “writing process” described in the previous section, is also relevant to the understanding of the T-CBWT. Confusion over the term “process” has led some to think that it is a name of a theory of writing. Susser (1994: 32) clarified this by giving the term three definitions: (1) “a component of most twentieth century writing theories [or models] (parentheses added)”, as those discussed in the previous section (2) “the act of writing itself” and (3) “[a term used] to describe writing pedagogies” (Parentheses added).

The researcher continues to look to Susser for a clear delineation between the terms *writing process* and *process writing*. *Writing process*, according to Susser (1994: 34), is used to refer to the act of writing, while *process writing* is used to refer to processed-based writing pedagogies. Process writing pedagogies, he explains, occurred as a reaction against product-oriented pedagogies and gradually introduced to the ESL/EFL profession in the 1980’s. “Process writing” consists of two components: awareness and intervention (ibid).

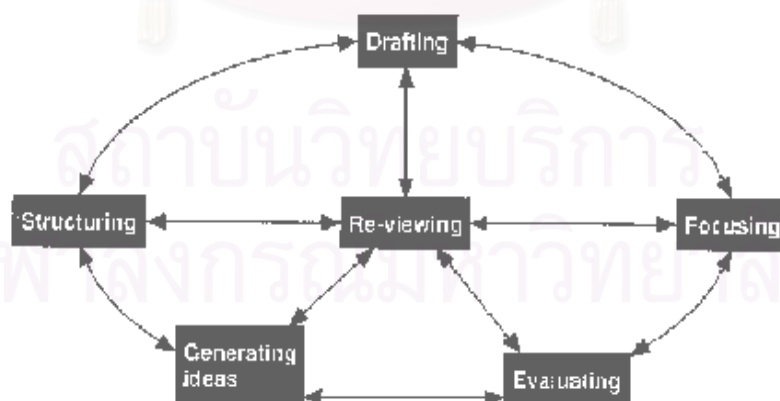
In the process approach to writing, awareness is key (ibid). Students must be made aware that writing is indeed a process, involving processes that lead to

discovery of generated ideas, although in some cases (See Parkhurst, 1990.) writers do already have a premeditated mental model of what they want to say even before they start writing. Aside from awareness, intervention or involvement of peers and teachers is incorporated with the aim to help writers (Susser, 1994). Procedures are used and “designed to help students think through and organize their ideas before writing and to rethink and revise their initial drafts” (Applebee, 1986: 95 as cited in Susser (1994: 35)).

As part of intervention and to help make learners aware of composing processes, “Process instruments” have been developed by Faigley, Cherry, Jolliffe and Skinner (1985) so that learners could consciously focus on aspects such as time spent on planning or even strategies involved in planning (e.g. creating goals, generating content, organizing). White and Arndt (1991) suggest questions that can be used to help students with generating ideas and organization. Language awareness activities, for example the use of a flowchart, can also help students with planning and organizing their ideas before drafting and revising. However, the flowchart would be interpreted as having a cyclical nature, as learners may jump from the revising stage back to the prewriting step as they find necessary.

White and Arndt's (1991: 4) diagram (Figure 2.1) offers a framework which tries to capture the recursive, not linear, nature of writing.

**Figure 2.1 White and Arndt's (1991) diagram of process writing**



The focusing stage deals with the real purpose of writing. Brainstorming may help to generate ideas, tapping into writers' long term memory to see what they can say about the topic. Structuring has to do with organizing and reorganizing ideas in a way that would help the reader to follow the text. Drafting shows the transition

from writer-based ideas into a reader-based text because at this stage multiple drafts are produced, each influenced by feedback from the teacher or from peers. Activities such as reformulation and the use of checklists in guiding feedback help learners develop essential evaluating skills. Initially, feedback focuses on content and organization. Then comments on language are given on penultimate drafts for final adjustments. The re-viewing stage means to stand back from the text and look at it with fresh eyes, asking oneself if it is right. Throughout the entire process, evaluation is given to assist students step by step and not only in the end when the final product is complete.

This concept of writing as a learning activity, where the development of ideas is formed concurrently with writing and where multiple drafts, followed by continual revisions are perceived as a natural production process is not in any way universal (Kietlinska, 2006). It is also recognized that international students in particular are not accustomed to the concept of multiple drafts (Leki, 1992: 71). Thus, in the present study the researcher adopts a similar process approach as that stated above by incorporating both awareness and intervention into the writing test. By awareness and intervention, the researcher requires test takers to write drafts, concentrating on aspects of content, organization, and language respectively in each draft written; a self-reflective reminder questions checklist that test takers can refer to throughout the task is also prescribed. Although linear steps of writing are imposed on test takers in the experimental groups, it would only be natural that test takers go through a cyclical process when working on the task. The linear stages are simply to make test takers aware that writing is indeed a process. The researcher argues that, as much as possible, awareness and intervention can and should be stimulated even during tests and especially in second language writing assessment so that EFL learners, especially, will be accustomed to treating the task of writing as a process.

## **2.2 Second language writing processes**

Research on second language writing has in general been dependent on first language (L1) research and L1 writing models have had significant influence on L2 writing instruction and the ongoing development of a theory of L2 writing. Needless to say, cognitive research in writing has increased our understanding of writing processes and has contributed to writing instruction and assessment. There have



been counter arguments, however, against such models of writing processes, which are based on L1 writers, asserting that not all models are appropriate for the L2 context. This is maintained by Kern (2000) who claims that the Flower model, in particular, does not take into account cross-cultural differences or sociocultural variation found in the function of the written language. Kogen, (1986: 25) also stated that “writing ability is more closely linked to fluency in and familiarity with the conventions of expository discourse”. Therefore, the fact that L2 writers are still in the process of acquiring these conventions, combined with their limited knowledge of vocabulary and language structure, can thus inhibit their writing performance. Furthermore, these process models do not account for growing language proficiency, which is a vital element of L2 writing development (Myles, 2000).

Although there have yet to be writing process models particularly for L2 learners, follow-up research conducted supports the cyclical nature of writing process in L2 writers. (See Bereiter & Scardamalia, 1987; Cumming 1989; Friedlander, 1990; Hall, 1990; Kellogg, 1996; Leki 1995; Raimes, 1987; Silva, 1993; Zamel, 1983 and 1985). These studies have revealed similar features of L2 writing in comparison with L1 writing. Silva (1993: 657-677) points to evidence which suggests that in order to develop ideas and rhetorical and linguistic mechanisms to express themselves, L2 writers, similar to their L1 counterpart, employ a recursive composing process, which include planning, writing and revising. Apart from such comparisons made between L1 and L2 writing, Silva (1993: 668-669) has concluded that from previous studies conducted, L2 writing is strategically, rhetorically, and linguistically different from L1 writing and that it is necessary to look beyond L1 writing theories in order to better describe L2 writing, which at present bears no comprehensive theory.

Of late, the notion of “post-process” has been brought up by Atkinson (2003) as a fresh basis on which to further investigate, expand and broaden the domain of L2 writing (Atkinson, 2003: 10-11). With this “post-process” notion in mind, Mu (2005: 3) recently proposed exploring L2 writers’ metacognitive and cognitive strategies in particular, especially since numerous researchers (such as Arndt, 1987; Raimes, 1985; Zamel, 1982) claim that writing strategies can distinguish successful from less successful writers. Writing strategies are of relevance to this study since strategies employed during the writing processes of test takers could reveal trends

that are important in understanding the behavior of test takers in writing test situations. The following section expands on L2 writing strategies.

### **2.3 Second language writing strategies**

Cognitive writing processes of L1 and L2 may be similar in terms of the cyclical and recursive nature, nevertheless it has been found that strategies used differ between L1 and L2 writers. Since L2 writing involves complex processes, L2 writers often find it difficult to develop all aspects of the writing simultaneously. Consequently, learners would use only those aspects that have already been internalized (O'Malley & Chamot, 1990). Such aspects may include those found in one's communicative language ability (Bachman, 1990) for instance, linguistic knowledge or strategic knowledge.

In this part, the researcher focuses on strategic knowledge of second language writers, using Mu's (2005) taxonomy of ESL writing strategies as a basis. The researcher has chosen Mu's taxonomy because it has been established by syntheses of previous classifications of ESL writing strategies (e.g. Arndt, 1987; Riazi, 1997; Sasaki, 2000; Wenden, 1991; Victori, 1995) in light of the understanding of the theories associated with writing instruction, specifically contrastive rhetoric, cognitive development, communication and social constructionism. These theories, which Mu finds closely associated with the four approaches in ESL composition teaching (namely the rhetoric approach, the process approach, the communicative approach, and the social approach respectively), some of which were briefly mentioned earlier in this chapter, can provide a theoretic framework for the classification of ESL writing strategies (ibid).

Mu marks out five categories of strategies employed by ESL writers, namely rhetorical strategies, metacognitive strategies, cognitive strategies, communicative strategies and social/affective strategies outlined in Figure 2.2.

**Figure 2.2 Taxonomy of ESL writing strategies** (Mu, 2005: 10)

<b>Writing strategies</b>	<b>Sub-strategies</b>	<b>Speculation</b>
Rhetorical strategies	Organization Use of L1 Formatting/Modeling Comparing	Beginning/developing/ending Translate generated idea into ESL Genre consideration Different rhetorical conventions
Metacognitive strategies	Planning Monitoring Evaluating	Finding focus Checking and identifying problems Reconsidering written text, goals
Cognitive strategies	Generating ideas Revising Elaborating Clarification Retrieval Rehearsing Summarizing	Repeating, lead-in, inferencing, etc. Making changes in plan, written text Extending the contents of writing Disposing of confusions Getting information from memory Trying out ideas or language Synthesizing what has been read
Communicative strategies	Avoidance Reduction Sense of readers	Avoiding some problems Giving up some difficulties Anticipating readers' response
Social/affective strategies	Resourcing Getting feedback Assigning goals Rest/deferral	Referring to libraries, dictionaries Getting support from professors, peers Dissolve the load of the task Reducing anxiety

- Rhetorical strategies, according to Mu (2005), encompasses L2 writers' strategies used in organizing and presenting ideas in writing conventions that are acceptable to native speakers of English, for instance, L2 writer's contemplation of

the target genre or rhetorical organization; translating generated ideas in L1 into L2; producing relevant elements of paragraphs such as topic sentences, supporting sentences, transitions and concluding sentences.

- According to Oxford (1990: 136), “metacognitive” means beyond, beside or with the cognitive, thus, metacognitive strategies, being indirect strategies, are actions which go beyond purely cognitive devices. They are strategies that writers use to control writing process consciously (Carson & Longhini, 2002) and that involve planning, monitoring or self-evaluation after the task has been completed.

- Cognitive strategies are defined by Carson and Longhini (2002) as strategies that writers use to implement actual writing actions, as it is a direct strategy (Oxford, 1990:37) requiring mental processing of the language. The function of cognitive strategies is to manipulate or transform the target language (Oxford ,1990: 43).

- Communicative strategies, or what some call compensation strategies, also direct strategies, are used to make up for inadequate knowledge of the target language with respect to grammar and especially vocabulary (Oxford, 1990: 47). Cohen (1998), however, defines communicative strategies as means writers use to express their ideas in a most effective way.

- While Oxford (1990) defines affective and social strategies (also indirect strategies (ibid)) as separate strategies, they are described by Carson and Longhini (2002) as strategies that writers use to interact with the target discourse community for support and to control their emotions, motivation, and attitude in the process of writing. Now that common ESL writing strategies have been outlined, we proceed to the various researches conducted on ESL writing strategies for further detailed understanding of what is known about L2 writing or the characteristics of L2 writing strategies. There have been studies on both general L2 writing strategies or L2 writing strategies in comparison with those of L1 writing as well as studies that have focused specifically on revision strategies which play an important role in L2 writing as illustrated in the following part.

### **2.3.1 Research on second language general writing strategies**

A qualitative research examining the writing experience and strategies of 5 ESL students of different language backgrounds in their first semester of study in a

university in the United States was conducted by Leki (1995). Interviewing subjects, observing classes and analyzing subjects' written materials for their courses as well as journals, Leki found specific strategies used by these students. The strategies included clarifying strategies, focusing strategies, relying on past writing experiences, taking advantage of L1 and their native culture, using current experience or feedback, looking for models, using current or past ESL writing training, accommodating teachers' demands, resisting teachers' demands, and managing competing demands. These strategies were successfully used to complete writing tasks. Some students were more aware of their strategy use than others were. It should be noted that this study portrays strategies used by advanced ESL students at the undergraduate and graduate level during their initial adjustment to academic experience in the U.S. where demands in relation to writing would have been perplexing.

In six case studies, which examined the composing processes of six ESL students coming from different language backgrounds, Zamel (1983) observed writing behaviors during the composing process and interviewed them after. It was found that each student had individual composing strategies. Although most of them knew the first step was to come up with concepts, then to order them and finally to express them, the sequence of writing events did not necessarily follow this order even with frequent evaluation and reformulation. For the least skilled writer, Zamel found that she had little insight into where her ideas were going or how her ideas could be developed. She failed to understand that writing is a process and that successive drafts were for the purpose of reformulating, developing ideas or correcting mistakes. The study's implication for L2 writing is that L2 writers should be given direct experience with the composing process in relation to how their ideas can be effectively communicated through the development of a relationship between the writer and reader as well as the enhancement of linguistic improvement.

Raimes (1987) examined the writing strategies of eight ESL students (speaking Chinese, Spanish, Farsi, and Haitian Creole), observed and compared their composing behaviors with L1 writers. Her study, conducted through the use of think-aloud protocols, showed that strategies employed in L2 writing incorporated planning, rehearsing (searching for memories or experiences that could be written about), rescanning, reading the assigned topic, revising and editing. L2 writers did



very little articulated planning, however, rescanning and rereading previously written segments were often performed and seemed to aid the development of subsequent ideas. Rereading the assigned topic was frequently performed. Revising and editing, however, was mostly performed during the writing of the sentences rather than between sentences or while rereading the whole passage. For L2 writers, revising and editing was not a “clean-up operation” that was done after the entire process of writing but was performed while an idea was being translated. Raimes concluded that in general, L1 basic writers and L2 writers shared similar strategies. Raimes’ study, however, concentrated on subjects’ writing processes in a non-test situation.

Cumming (1989) explored the effect of writing ability and L2 proficiency on writing processes and the interaction between the two with the purpose of discovering difficulties in L2 writing. Data was gathered from twenty-three Francophone students by means of think aloud techniques and written tasks. Findings revealed that problem-solving strategies of varying degrees were used when composing. In terms of strategies used, proficient writers seemed to use a knowledge-telling model throughout the entire writing process, while less proficient writers used the knowledge-telling process less, instead concentrated more on decisions made at the word and phrase level. Cummings maintains that second language proficiency does not influence the thinking process or the quality of writing in L2.

An investigation into the writing processes of three Chinese postgraduate students in Australia was carried out by Mu and Carrington (2007). Data was collected from a semi-structured interview, questionnaire, retrospective post-writing discussion, and written drafts. Findings indicated that rhetorical strategies, metacognitive strategies, cognitive strategies and social/affective strategies were employed during the writing tasks. Participants in this study, who were able to master metacognitive strategies, as adults are usually capable of, preferred the strategy of extensive reading from which they were able to gain both information relevant to the target field and idiomatic expressions. Additionally, with the exception of rhetorical strategies (organization of paragraphs), the metacognitive, cognitive, and social/affective strategies transferred across languages positively.

This study supports Silva's findings (1993) that L2 writing process is different from L1 writing processes in terms of strategies use, rhetorical style and language.

A study on Thai students conducted by Khongpun (1992) explored general composing and thinking processes of five Thai high school students through protocol analysis. Findings revealed that these students composed in both first and second language. The subjects wrote in a similar manner, manifesting mental planning and relied on internal resources. They alternated among writing, repeating and rehearsing.

In a more recent study on strategies in reading and writing, Baker and Boonkit, (2004) investigated learning strategies employed by Thai undergraduate students studying EAP reading and writing courses. The researchers found that successful writers pay attention to every level of their writing as their work progresses. Furthermore, they tend to go back to their work to edit grammar, vocabulary, and mechanics more than less successful writers. There was more frequent use of metacognitive, cognitive and compensation strategies than social or affective strategies. In this study, data was retrieved from questionnaires. Although additional data was gathered from learning diaries and interviews to counter the artificial nature of questionnaires, data was not obtained from observing actual writing processes.

The studies mentioned above, are somehow supported by the abovementioned report by Silva (1993) who examined 72 research studies conducted on L1 in comparison to L2 writing processes. In this report, general composing processes have been found to be similar in L1 and L2, however, L2 writing was found to be more constrained, more difficult, and less effective (e.g. Silva, 1993). In terms of planning, it was reported that most L2 writers did less planning at the global and local levels; more time was devoted on generating material, while organizing generated material in the L2 was more difficult (Silva, 1993: 661). Regarding transcribing, producing written text in the L2 was laborious and time consuming with more time spent referring back to the prompt, to the outline or dictionary (ibid). L2 writers were found to write at a slow rate and produced fewer words (ibid). As for reviewing, L2 writers tend to reflect and revise on their writing less, making changes based on what "sounds" good and focusing more on grammar and on mechanics (ibid: 663)

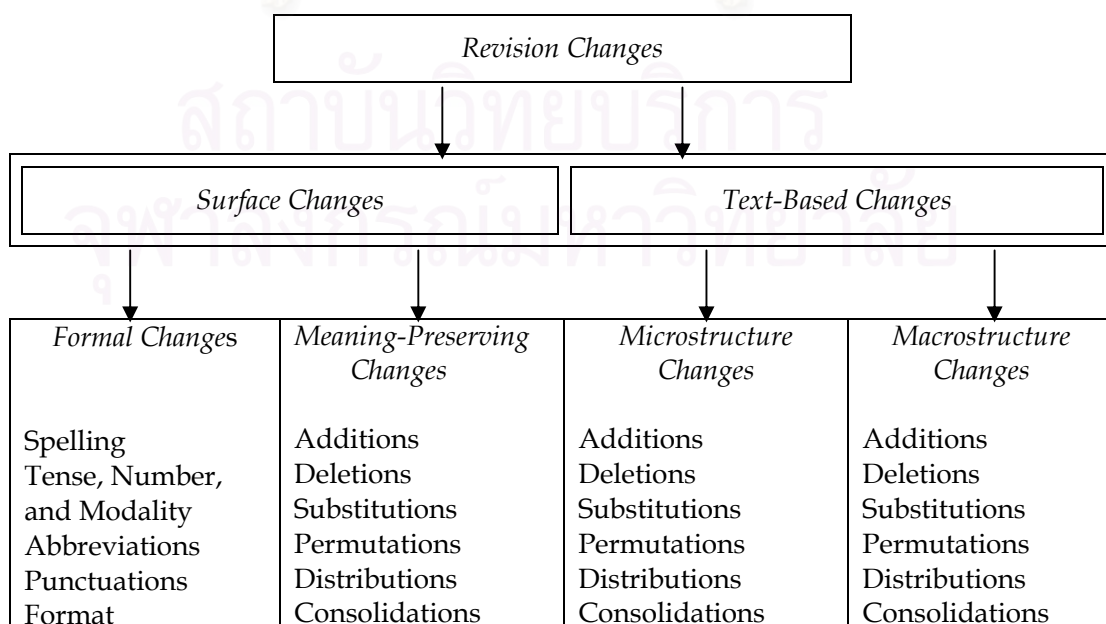
The plethora of research studies on L2 writing has given us a detailed description of L2 writing processes and strategies. Research by Bridwell (1980), Boshier (1998), Sommers (1980), Wallace et al. (1996) suggest that as part of L2 composing processes, revision is an indispensable phase in text development and good writing is a result of effective revision. That said, the following section outlines solely L2 revision strategies that have been evident in research.

### 2.3.2 Research on second language revision strategies

Research suggests that proficient writers make use of multiple revisions in order to improve their text whereas less proficient writers determine to write correctly at their first attempt (e.g. Jones, 1981 and Perl, 1980). The issue of revision strategies as well as general writing strategies is of relevance in this study since the T-CBWT requires test takers to revise on their drafts. Thus exploring research carried out specifically on revisions strategies would provide background knowledge of the characteristics of revision strategies employed by successful and less successful L2 writers.

Faigley and Witte (1981: 403) have designed a taxonomy of revision changes, which is a system for analyzing the effects of revision changes on meaning that has been tested and can be applied reliably (ibid: 405). Figure 2.3 below presents Faigley and Witte's (1981) taxonomy of revision changes.

**Figure 2.3 Taxonomy of revision changes (Faigley and Witte, 1981: 403)**



Employing their taxonomy in two studies of different types of writers, Faigley and Witte found that to revise successfully does not result from the number of changes a writer makes to the work, but from the degree to which the revision can effectively result in a written piece that meets the demand of the task. This study was conducted presumably on L1 learners in a non-test situation.

As Faigley and Witte's Taxonomy is a comprehensive and clear description of types of revision changes and has been used and cited in numerous studies (e.g. Al-Amer, 2000; Sakontawut, 2003; Tagong, 1991), the present study will also utilize Faigley and Witte's Taxonomy to study how EFL learners revise during the writing test. The following are definitions of each of the terms as explained and illustrated by Faigley and Witte (1981: 402-405):

**Formal changes:** grammatical and mechanical changes

**Meaning preserving changes:** changes that paraphrase the concepts in the text but do not alter them

**Additions:** raise to the surface what can be inferred

e.g. You pay 2 dollars. → You pay a two-dollar entrance fee.

**Deletions:** the reader is forced to infer what had been explicit

e.g. several rustic looking restaurants → several rustic restaurants

**Substitutions:** words or longer units that represent the same concept

e.g. out-of the way spots → out of the way places

**Permutations:** rearrangements within substitutions

e.g. springtime means to most people → springtime, to most people,  
means

**Distributions:** one segment turns into more than one segment

e.g. I figured after walking so far the least I could do would be to  
provide a relaxing dinner since I was hungry → I figured the least  
it owed me was a good meal. All that walking made me hungry.

**Consolidations:** two or more segments turn into one

e.g. And there you find Hamilton's Pool. It has cool green water surrounded by 50 foot cliffs and lush vegetation. → And there you find Hamilton's Pool: cool green water surrounded by 50-foot cliffs and lush vegetation.

**Text-based changes:** meaning related changes

**Microstructure changes:** meaning changes that would not change the summary of the text

**Macrostructure changes:** major revisions to the sentence and even paragraph level that would alter the summary of the text

One study employing Faigley and Witte's Taxonomy was that of Hall (1990) who videotaped four advanced ESL writers (Polish, Swiss-French, Norwegian, and Chinese), and examined the revision processes in both their L1 and L2. Subjects were asked to write two argumentative essays in English and in their native language. Findings indicate that the process of revision is similar across languages and that proficient writers are able to apply revising skills in their L1 to their L2. However, revising in the second language took more time, was more recursive and more flexible than L1 revision. It was also found that over half of both L1 and L2 revision took place during the actual transcribing of the drafts. The revision behavior of the subjects seemed to be "erratic". Among the number of the few revisions made, word level changes predominated and more substitutions than deletions or additions were found. Implications point to the importance of teaching students how to individualize their revision processes instead of merely prescribing revision.

In a similar study conducted closer to home, Tagong (1991) examined revision strategies that four Thai students employed when revising their Thai and English essays. Each student was asked to produce two essays of the expressive and argumentative type, one in Thai and the other in English, each consisting of three drafts. Altogether 24 drafts of each language were collected and analyzed using Faigley and Witte's (1981) taxonomy of revision. Findings indicated that all four participants made very few changes to both English and Thai essays. Any revisions made were at the meaning-preserving level. The few additions, deletions and



substitutions made were at the word and phrase level. The participants indicated that for the most part the formulation of ideas was in Thai and that although thinking in Thai facilitated the flow of ideas, it also hindered their ability to express ideas in English.

In Porte's (1996) study, the investigation of revision strategies of 15 Spanish native speaker undergraduates reveal, through their writing and post-writing interview protocols, that in fact less-able writers did attend to meaning when revising. However, the amount of meaning related revisions was small since, from their experience, revising for meaning was never one of their priorities. In detail, more than half the subjects did not know how to go about revising for meaning. Meanwhile, a few said they tried to avoid revising for meaning as it required a lot of time of which would be better spent on fixing vocabulary or grammar since there was an assumption that the final grade was based on the severity of surface errors (ibid: 113).

To sum up findings from previous research, many L2 writers were found to focus on surface features more than meaning features in their writing (Faigley & Witte, 1981; Hall, 1987; Tagong, 1991; Zamel, 1982, 1983). Skilled L2 writers tend to revise more at the discourse level (Cumming, 1989; Raimes, 1987; Zamel, 1982, 1983), while unskilled L2 writers revise more at the word and phrase level (Raimes, 1987; Zamel, 1982, 1983). Findings from most of the studies exploring L2 revision or writing strategies were case studies that took place in an ESL environment where subjects had immediate need to use the language and subjects were typically heterogeneous in terms of educational background. The few studies that involved Thai students as subjects (e.g. Baker & Boonkit, 2004; Benson, 1980; Benson et al, 1992; Gates, 1978; Hirokawa, 1966; Intaraprawat, 1988; Indrasuta, 1987, 1988; Tagong, 1991) were for the most part Thai students studying in an ESL context (Silva, 1993). Moreover, the studies mentioned above have focused primarily on L2 writing strategies employed in a non-test situation. Writing processes and strategies as observed in the current study would provide additional insight into the processes and strategies of EFL writers in a test situation.

## **2.4 Writing assessment**

Much research has been conducted in the area of second language writing assessment especially on timed impromptu writing with the focus on the reliability of the writing tests since it was important for high-stakes writing tests to be accepted by educational institutions and large testing organizations (Weigle, 2002: 59). Later, it was pointed out that such testing procedures which brought about reliability in fact reduced validity (Huot, 1990 and 1996). Since then, in the early 1980s, the focus of research on writing assessment shifted to the issue of validity (Weigle, 2002). With validity in mind, researchers had to study various factors in writing assessment that affect test scores. Adapting from McNamara (1996), Weigle (2002) listed such factors as follows: the writing task, the text, the rater, the scale, the context, and the writer and/or interactions among these variables.

Research findings have suggested that variables of the task component of writing tests are elements that must be manipulated and controlled to ensure that every test taker has the opportunity to perform their best (Hamp-Lyons, 1990: 73). According to Hamp-Lyons (1986) and Ruth and Murphy (1988), task variables include length of time to write; use of paper and pen, typewriter or word processor; as well as a large number of variable elements that make up the topic or prompt itself. Adapting from Purves et al. (1984) and Hale et al. (1996), Weigle (2002: 63) suggests a comprehensive list of various dimensions of task variables in direct writing assessment. Apart from time allowed and transcription mode, she includes the following: subject matter, stimulus, genre, rhetorical task, pattern of exposition, cognitive demands, specification of audience/role/tone, length, prompt wording, and scoring criteria. These dimensions of tasks have the potential to affect test scores. The following section reviews literature relevant to dimensions of task variables evident in the test taker-centered writing test.

### **2.4.1 Test structure**

Test structure or test method brings us back to the notion of product or process approach to writing. As writing instruction has since shifted towards a more process-oriented approach over the last 2 decades, recent research in the assessment of writing has focused primarily on process writing (Lee, 2006). Thus, following the process approach to writing pedagogy, and in the attempt to make direct writing

tests more authentic, some researchers have examined ways to assess writing in a more process-oriented manner, such as portfolio-based assessment (e.g. Belanoff & Dickinson, 1991; Holt & Baker, 1990 or Ruetten, 1994) or workshop-based writing tests (e.g. Cho, 2003; Lee, 2006).

A study conducted by Cho (2003), compared the results of second language writing in a product oriented writing test to that of a process-oriented writing test. Fifty-seven graduate-level international students volunteered to take two writing tests. The process-oriented test was conducted in the form of a workshop, building in activities that writers normally do - brainstorming, receiving some kind of stimulus before writing, producing first drafts, giving and receiving feedback from peers, and producing a final draft. The entire process, lasting 6 hours, was carried out in two days with a total of 3 hours running time per day. This process-oriented writing test was an attempt to correspond to constructs of the cognitivist approach to how writing process works.

Comparing the results of the process-oriented writing test to those of the product-oriented test (which lasted 70 minutes including 10 minutes time to see a videotaped lecture), for many of the examinees the essays written on the workshop-based test showed significantly better performance in terms of content and organization than that of the product-oriented writing test. However, Cho stated that the factor of test time may have attributed to the difference in test scores. It was also noted that the product-oriented test was too strict and the workshop-based writing test was too lenient. However, an important issue this study raised from its finding is that "what the examinees can show on a test is predetermined by what test developers value and by the boundaries of the test design." (Cho, 2003: 184). Cho argues that product-oriented writing test compromises an examinee's opportunity to do well on the test in favor of the efficiency of test administration. At the same time, though, it was noted that the nature of such a workshop-based test was largely dependent upon financial resources.

Being accepted widely, the process approach that has been adopted in such writing assessments is perhaps the most effective in aiding the actual process of writing. However, there have been some criticisms over this approach. Horowitz (1986), for instance, brings up some shortcomings of the process approach, stating that emphasizing on multiple drafts may leave students unprepared for essay

examinations or the overusing of peer evaluation may leave learners with an unrealistic view of their own abilities. Moreover, despite being familiarized with peer reviewing in a training session prior to the actual test, some participants may not respond to peer writing critically enough, providing inadequate feedback. Specifically, comments from peers may focus on surface forms rather than ideas and organization, while comments may also be vague and unproductive (Leki, 1990). This may happen especially in EFL contexts where, culturally and affectively, L2 learners are not comfortable sharing their work with peers. Additionally, they may feel ashamed, threatened and even doubtful of feedback from peers as compared to feedback given to them by teachers, as many researchers in the EFL context have found (Chinnawongs, 2001; Ge, 2005; Kim & Kim, 2005; Moon, 2000). In a study conducted by H. Lee (2005), peer raters were found to be so lenient that they did not have a predictable rating pattern and that they were not regarded as expert raters due to their linguistic incompetence. This is one of the challenges of process-based writing assessment that stems from how writing pedagogy is approached in many EFL contexts.

Writing, as Zamel (1987: 701) reports, “continues to be reduced to a set of discrete steps and prescriptive principles that students are exhorted to follow in order to learn to write well”. Although much effort has been put into shifting product-based writing instruction to process-oriented writing instruction, the same does not appear the case for many writing classes that still adopt the controlled composition approach (Silva, 1990: 13). Many teachers still hold that “students need mastery over the sentence before proceeding to the paragraph, and mastery over the paragraph before proceeding to the essay” (Raimes, 1984: 83). This makes the task of teaching composition easier for the teacher to handle in the classroom (ibid.) so the teacher is still in control and dependent upon in many EFL writing courses. Moreover, it remains that language teachers’ feedback reflects attempts to comment more on surface features than on the content or meaning. In turn, EFL learners have become accustomed to the product approach to learning how to write and trust in feedback, mostly on the surface changes received only by the teacher.

Although the process approach for writing assessment may be theoretically sound in the aiding of writing process, another reason for the difficulty in implementing process-based writing assessment in an EFL context has to do with



resources. In terms of practicality and financial resources, it may not be viable especially when testing involves a large number of examinees. The process approach to assess writing, be it portfolio or workshop-based, requires time, human resources and financial resources, which may not be easy to acquire.

On the other hand, the product approach to writing assessment does not go without faults. In light of the issue of fairness to L2 learners, we cannot deny that the product approach to writing assessment, one that requires examinees to write “single-drafted and severely-timed essays”, as Cho (2003) puts it, one that does not allow examinees to rely on resources of any kind, is somehow unfair to L2 writers. In an EFL context, although writers may not ordinarily receive feedback from their peers, other types of resources (the dictionary, internet, etc.) would still be available to them in a non-test situation. Depriving them of such resources in test situations would be neither authentic nor fair. Allowing them such resources, conversely, would be “biasing for best”, as articulated by Swain (Fox, 2004). Whether to allow examinees resources during the assessment of writing would be further elaborated in Section 2.4.5.

This brings us to the concept of fairness in language testing. Aside from being a concept within the framework of social justice, fairness in language testing has been voiced in a variety of perspectives by many researchers (See Bachman, 2000; Elder, 2000; Hamp-Lyons, 2000; Lowenberg, 2000; Spaan, 2000). Kunnan (2000: 1), for instance, stated that language test developers and researchers, although concerned with the concept of fairness when they investigate tests for technical features such as validity or reliability, have not actually acknowledged fairness to be their primary focus. Shohamy (2000), in gathering questions about the use of tests from a number of studies conducted over the past years, addresses the issue of impact of tests on learning and teaching, which is the type of fairness about which the current study is concerned. A test taker-centered computer-based writing test in the present study stems from a quest for fairness in terms of impact.

Hence, a related issue in this study concerns impact or washback, which may be negative or positive depending upon the approach or test method. Exploring the literature on the issue of impact on language testing, Bailey (1996) has provided a general definition of washback as the influence of testing on teaching and learning. In her article, she cites Green (1985) who suggests that language tests should be



designed to elicit the best possible performance from the test takers (bias for best) and for test developers to make positive washback their primary goal for developing communicative language tests. With the implementation of the test taker-centered computer-based writing test, the researcher hopes to create beneficial impact or washback. Should test takers of the current test bring with them a learning experience that prompts them to perform better in their writing and should teachers tailor their writing activities in class to the requirements of such a test, resulting in better teaching and learning in writing, the current test would have succeeded in producing positive washback. Washback may not be so easily proven or measured, thus it would be an interesting area to be further investigated in another study.

#### **2.4.2 Topic choice and topic type**

Raimes (1990: 433), on evaluating the TOEFL test or written English, raised the concern about topics given to native and non-native speakers of English, stating that caution must be given to the comparability of the topic types both between topic types given to L1 writers and L2 writers, who come from different cultural backgrounds. Further, it was suggested that only one topic type (asking writers to address no more than one task) should be presented to examinees, although different types of topics are offered at different test administrations (ibid: 435). Raimes also questioned the lack of topic choice given to examinees (ibid).

Research on choice of topic has been carried out by Polio and Glew (1996), who observed that students would much prefer to be able to choose their topic, as it gives them the opportunity to select one that they are most familiar with or one on which they have more knowledge of vocabulary. Additionally, it was found that the time used for topic selection did not necessarily interfere with the time allotted for completing the writing task.

In a more recent study on prompt choice in university level writing test for non-native speakers of English, Weigle et al. (2000) found corresponding results. They learned that testees choose personal over non-personal topics due to their familiarity with such topics. However, non-personal topics would be chosen not because of familiarity of the subject matter, but because they perceived themselves as having the ability to organize and develop such topics.

In the present study, the researcher did not provide subjects with topic choices due to experimental reasons. Having them select a preferred topic would not make it possible to compare performances. However, the topics used in this study have been adjusted to suit the socio-cultural background of the writers.

#### **2.4.3 Stimulus material**

Reading input is another task variable that researchers have been concerned about, especially on the issue of whether to provide learners with reading stimuli and how much to provide them with. In an L1 study by Smith et al. (1985), it was found that students performed better on a task that involved reading several short excerpts on a topic than when they read only one excerpt.

Another study (Campbell, 1987) examined the use of background information by native and non-native English-speaking university students when they were asked to write a paper based on the same background information from a reading text. Findings found the 20 non-native speakers of English using significantly more information from the source text than the native speakers and the information derived from the source text were not reworded well enough to constitute paraphrases. The 10 native speakers, on the other hand, produced better quality writing due to more consistent academic style and tone.

In an L2 study, Lewkowicz (1997) found that by providing stimulus material, EFL writers developed their ideas less than those who did not receive reading stimulus. Moreover, there was a tendency for them to rely on the language of the source text. As much as the researcher wanted to provide sufficient stimulus material in this study, it was deemed sufficient to supply test takers with only a short prompt that included translated key words. This was to avoid test takers in this experiment from being too dependent on the language and on ideas found in the source text, just as Lewkowicz's (1997) subjects did. The test task was straightforward and the researcher believed that test takers could rely on their own ideas and experience, as well as language to complete the task.

#### 2.4.4 Time allotment

Ample research has been conducted on the effects of time allotment on L2 writing performance. In Livingston's (1987) study, adding a 10-minute planning period before a 20-minute writing period tended to increase writing scores of high ability students. Nevertheless, for most of the students, the effect of the extra ten minutes given was small, especially for middle and low ability students. Even when comparisons involved quite large differences in time allotment, like in Kroll's (1990b) study, for example, essays that were written in class received only slightly higher scores in comparison to essays written at home over an extended period. Results showed insignificant differences. These two studies, however, were conducted in a non-test situation where outcomes may be different otherwise.

In a study on the effects of amount of time allowed on the Test of Written English (TWE), Hale (1992) examined students' performance on TWE prompts under two time limits - 30 minutes, as on the current TWE, and 45 minutes. Mean scores were found to be significantly higher under the 45-minute test, indicating that providing additional time produced a modest but reliable increase in scores. The significance of the effect was comparable for students of low versus high proficiency. Similarly, Biola (1992) and Younkin (1986) as cited in Powers and Fowles (1997) have found that allowing more time results in higher scores.

However, some studies did not yield similar results, especially for less proficient writers. An early study (Wild, Durso and Rubin, 1982) investigating subgroup performance according to age, gender, and ethnicity has shown very high correlation between performance on more time and less time allowed on two versions of a test. Allowing more time would normally result in better performance for everyone, however, in this study no particular subgroup benefited outstandingly from additional time given.

The National Assessment of Educational Progress or NAEP conducted research, giving students twice as much time on one informative, persuasive, and imaginative topics at each grade level (Freedman, 1991). Results show that with increased time all students scored significantly better on the persuasive tasks, while the informative tasks showed no differences. However, the extra time provided was more helpful to White students than to Black or Hispanic students, widening the gaps between these groups in the assessment results.

Similar outcomes were found in Powers and Fowles' (1997) studies. They conducted a speededness study to determine the effects of giving different time limits on GRE examinees' writing performance. The participants who were prospective graduate students were asked to write 2 essays each, one essay given 40 minutes and the other essay given 60 minutes. Findings revealed that overall, performance were significantly better on the 60-minute essay. However, the additional 20 minutes did not seem to benefit examinees who identified themselves as slow writers.

Of the studies mentioned above, none were conducted in an EFL environment. Although the majority of studies points to no significant difference when less-able writers are given more time to write, empirical research is warranted in an EFL context. In the present study, subjects are given additional time of up to 90 minutes to write a 350 word-essay in order to, as much as possible, ensure that the writing text gathered would be truly representative of the writers' written proficiency. Moreover, it is a chance to address the fairness issue regarding time. Fairness in writing assessment is mentioned as a reoccurring theme in the following section.

#### **2.4.5 Reference material: The dictionary and thesaurus**

In fact, whether to allow test takers the use of dictionaries has long been a controversial issue. Weigle (2002) maintains that traditional language tests generally do not allow the use of dictionaries since vocabulary knowledge is considered part of the construct being measured. Thus, allowing the use of a dictionary may pose as a threat to the validity of the test. Nevertheless, Weigle (2002: 106) states that when defining 'writing ability' with a broader perspective, arguing that a good writer does indeed know how to use the dictionary effectively to his/her advantage, the availability of the dictionary does not necessarily have to be precluded.

To the best of my knowledge, there have been few L2 studies conducted both on the effects of dictionary use on the performance of reading tests (See Bensoussan et al., 1981; Hurman & Tall, 1998; Nesi & Meara, 1991) as well as on writing tests (Refer to East, 2006; Tall & Hurman, 2000.). Both have suggested that dictionary availability renders no statistically significant difference to test scores.

In East's (2006) study, it was examined whether bilingual dictionaries allowed in timed writing tests of German as a second language actually helped in promoting quality writing with regard to lexical accuracy, sophistication and test scores. Findings revealed an increase in test takers' lexical sophistication with dictionaries allowed. Although there was no improvement in overall test scores with dictionary use, East (2006) concluded that allowing dictionary use in writing tests is potentially beneficial in terms of enhancing writing quality at least in the lexical area. Also, the frequent inaccuracy of the use of the dictionary in East's study may be sufficient to conclude that providing the dictionary in a writing test is a liability (ibid) rather than an asset. Nevertheless, should the continued provision of dictionaries in writing tests leads to future training in the effective use of the dictionary, such a test would thus result in positive impact. Dictionary training would then "lead to a situation in which test takers using dictionaries are able to increase the lexical sophistication of their writing and *at the same time* (Italics original) use this increased range of lexis more accurately, thereby contributing positively to an overall increase in writing quality" (ibid: 195).

East (2006) further suggests that where timed writing tests are retained due to practicality and ease of administration, the inclusion of dictionaries, particularly when linked to prior training, may help enhance writing quality in comparison with 'without dictionary' tests. Also, it should be recognized that allowing dictionaries in writing tests reflects the construct being tested especially since such a test accurately reflects how L2 writing is carried out in non-test situations; thus including resources, such as dictionaries may be a way of overcoming one limitation of the timed writing test (ibid: 195).

Tall and Hurman (2000) examined how candidates in 26 schools used their dictionaries in their French written exam and solicited their opinions on dictionary use. Three types of bilingual dictionaries were selected and students' views on their usefulness were gathered. The majority of candidates consulted their dictionaries frequently, while only a few used the dictionary to check their answers and to understand the task. Most candidates felt confident if they had dictionaries available during the exam. At the same time, though, 16% of all the 301 candidates made negative comments about having dictionaries available, stating that looking up words took up a lot of time, made them dependent upon it and stopped them from



thinking on their own. Nevertheless, it was apparent in their study that participants opted for the more user-friendly dictionary that was well designed and of good quality, ensuring rapid and effective use.

To the best of my knowledge, there have yet to be studies that have looked into the use of thesaurus, or both dictionary and thesaurus provided by the Microsoft word processor. Nor have there been studies conducted locally on how such resources would affect writing performance. The current study would then take the opportunity to examine how the provision of such resources, imposed draft writing combined with sufficient time allotment would affect writing scores in a Thai EFL tertiary context.

#### **2.4.6 Transcription mode: Handwriting or word processing**

Research on writing on the computer began in the 1980's with the birth of the word processor. Studies first conducted in instructional contexts comparing handwriting with word processing (or computer writing) yielded mixed results on diverse aspects, such as on student attitudes towards writing instruments, length, product, and process. Due to the increase use of computers in assessment, concern has been raised about the influence of computers on test takers' performance in comparison to the traditional pen and paper tests.

##### **2.4.6.1 Effects of transcription mode on test taker preference**

One of the first few questions that researchers would be interested in seeking answers to would be on transcription mode preference of test takers. Research in instructional settings, for instance in Bean's (1983) study, has reported that students have a positive outlook towards writing on the word processor. Because students enjoyed using word processing, the computers in fact motivated them to spend more time with revisions (ibid). Bean (1983: 4) confirmed that at least for some students in his study, the computer was able to make a significant positive impact on revising habits.

In the assessment context, several studies showed that ESL test takers preferred using the computer as a medium of writing (e.g. Harrington, 2000; H.K. Lee, 2004). In H.K. Lee's (2004) study, most of the participants revealed that they

preferred the computer-delivered English placement test as opposed to the written version regardless of the scores they obtained on the computerized mode. This was due to the convenience that the computer had to offer against the more cumbersome and time consuming process of correcting and editing their essays on paper. Many believed they performed better working on the computer. Additionally, we learn from this study (ibid) that test takers preferred simpler software; some wanted access to spell-checkers and online dictionaries. H.K. Lee (p.18) suggests that provisions of such functions should be taken into consideration when implementing computer delivered tests to better simulate the actual writing situation, as would be done in the present study.

#### **2.4.6.2 Effects of transcription mode on product**

On the effects of transcription mode on the quality of written product, conflicting findings were found. In a classroom setting, Daiute (1986: 141-159) studied the effect of a word processor on the amount of writing. When compared to the handwritten drafts, secondary school students wrote fewer words on the computer drafts. To be exact, after prior typing and word processing practice, students produced more words in the same amount of time with pen (ibid). This may have been due to either the manual chores (typing and giving commands) involved in using the computer or the amount of time they spent on editing and making changes.

In a recent study, Li (2006) studied the computer writing processes and quality of texts of twenty-one Mandarin speaking student volunteers who were relatively proficient in English, having had either 5 years experience in studying in English medium high schools in Toronto before enrolling in a Canadian university or obtained TOEFL scores of at least 550. During their writing on the McIntosh, no time limits were set for the participants and no spell-checker or grammar checker was available. To ensure that all changes were recorded, all participants who also took a pen and paper based writing session, were required to use only pen and no erasers. Findings in the study indicated that this group of ESL writers was able to create longer essays with higher quality on the computer than they did with pen in this non-test context.

In a direct writing test, when comparing 10<sup>th</sup> grade students' performance by handwriting and by computer, Wolf et al. (1996) found that the word processed essays were longer and had a more formal tone. In contrary, the handwritten counter part was shorter and had a less formal tone. They reported that students with less experience using the word processor scored significantly lower when typing than when writing. Thus, prior experience with word processing may affect student performance. Of course, it could also be the case that when a direct writing test is a speed rather than a power test, the outcome would be as it was in this study.

Similarly, Russell and Haney (1997) reported a similar effect for examinees with very high levels of computer experience and comfort. Their study reveals that students from technology-oriented schools received higher scores on a computer-based writing assessment than on a paper-and-pencil version of the assessment. A textual analysis of sixth to eighth-graders' essays revealed that those using the computer had the tendency to write nearly twice as much in terms of characters, words and paragraphs.

In Harrington et al.'s (2000) study, the mode effect in writing quality and scoring of an English placement test with a large sample size of 480 college students was examined. The students were randomly assigned into three groups, each of which would use different methods of writing: hand-written writing, transcribed (first handwritten by participants then typed on the computer by the researchers), and computer writing. Results indicated that there were no significant score differences across the three groups. This may be because subjects of a more recent time have become more familiar with computer usage, although it was noted that not all students who took the test were on par with each other in terms of computer writing background.

Similar findings were revealed in Y-J. Lee's (2002) study where six Korean undergraduate and graduate students took part in two writing tests across modes with two different prompts that seemed rhetorically comparable. The analyses showed that there were no significant differences across modes, suggesting that the mode of composition does not affect scores. In addition, Y-J. Lee (2002: 152) noted that although the word-processed essays were longer than the handwritten ones, the longer sentences produced on the computer did not seem to add much to the effectiveness or quality of the written products as indicated by the scores.

However, Wolf and Manalo (2004) in seeking to determine if performance on the TOEFL writing direct test was comparable for examinees when given the choice to compose essays in handwriting as opposed to word processing, findings supported earlier studies. From data collected from 133,906 second language participants taking the computer-based TOEFL in 1998 to early 1999, they specifically found, using general linear modeling, that examinees with weaker English scores performed better on handwritten essays, while examinees with better English scores did not perform differently on the two test modes. It was interpreted from the findings that examinees with lower levels of language proficiency - who may also tend to have less experience with using computers - may have to deal with additional cognitive demands when responding to a writing prompt on a keyboard (ibid).

In a different study, H.K. Lee (2004) worked with 42 volunteer subjects (most (37) of whom were graduate students), who have taken a paper-and-pencil based ESL placement test and were asked to take the computerized version (on the McIntosh) of the same test. It was found that organization was enhanced in the computer-based mode, most likely due to extra time available when writing on the computer as opposed to writing on paper, which took up more time. Furthermore, test takers were able to write more sentences on the computer, enhancing their content overall. The improvement of linguistic expression with computer writing seems to imply that subjects did focus their attention to global, not merely local, level errors during the revision process.

A traditional qualitative study was conducted by Gubtapol (2002) who explored how 33 Thai university students edit their writing using word processing programs in a non-test situation. The study revealed that the use of word processing programs helped Thai students approximate edited American English especially with capitalization, singular and plural forms, subject/verb agreement and the use of periods and commas.

To sum up, there have been conflicting findings as to whether producing essays on the word processor leads to better performance. It appears that writing on the computer tends to result in longer texts than hand written ones. However, with regard to performance, it would seem logical to state that prior experience with the computer and how proficient test takers are in their second language would

influence the quality of the essay to a certain extent. Because the MS Word, which is one of the most popular word processors used in Thailand and one that a majority of EFL learners are frequent users of, will be employed in the current study, the researcher will be able to observe whether writing assessment on the computer is possible for Thai EFL learners in this particular context.

#### **2.4.6.3 Effects of transcription mode on rater scoring**

The influence of transcription mode on rater scoring in test situations is thus another concern possibly stemming from presentation effect. In a classroom setting, Hawisher (1987) found that essays produced with paper-and-pencil received comparable quality ratings to those produced with a computer. He further suggested that there was no positive relationship between extensive revision and quality ratings. Powers et al. (1994) investigated whether essay score differences resulted from the transcription mode or from the scoring mode. College students produced two essays across paper-and-pencil and computer modes. They employed the double transcription method, which means that the original handwritten essays were converted to word processed format, while the original word-processed essays were transformed to handwritten format. Results revealed that the hand written essays received higher scores regardless of the mode in which the essays were originally produced. This was also found in Daiute's (1986: 155) study where drafts written in pen received significantly higher scores than those written on the computer.

Meanwhile, a number of studies in the area of assessment have pointed out the relationship between poor handwriting and low marks given by raters (e.g. Chase, 1986 as cited in H.K. Lee, 2004; Russell, 2002a: 13). These studies have shown, in other words, that computer generated essays received significantly higher scores. Other studies, conversely, showed that raters are more likely to award a lower grade to typed essays than to their handwritten counterpart (e.g. Bridgeman & Cooper, 1988; Sweedler-Brown, 1991, both cited in H.K. Lee, 2004). Thus, there has yet to be a consensus to this issue. However, under time constraints, which may be imposed on raters, severely illegible essays are more likely to be given low scores, as Sloan and McGinnis (1978) also reported raters who have to assess many essays as rapidly as possible tended to assign lower scores to messy handwritten essays than to neat ones



(H.K. Lee, 2004: 13). Hence, it may be logical to suggest that “word-processed essays are more resistant to discrepancies in score judgment between readers” (ibid.) and perhaps this ‘presentation effect’ can be eliminated by having readers rate typed essays of comparable format. In the current study, font style and size would be in the same format on all test takers’ drafts to avoid any discrepancies between raters.

#### **2.4.6.4 Effects of transcription mode on process**

Probably the issue of most interest among researchers is the difference between the processes that occur when writing on paper and those that happen when writing on a computer since computers can have a significant effect on writing processes, being able to either facilitate or interrupt the cognitive processes involved in planning, producing a text, and revising (Neuwirth, 1990; Owston et al., 1992 as cited in Y-J. Lee 2002).

It appears that findings from studies conducted in the instructional setting have not been able to reach a consensus. In another phase of Diaute’s (1986: 153) study, it was found, against her expectations, that students made significantly fewer revisions when they worked on the computer than when they wrote with pens. Apparently, students did not use the word processing functions as much as they could have. ‘Additions’, which were the most frequently occurring revision type, were made towards the end of texts, actually lengthening their texts. With regard to editing, it was found that composing on the computer did not lead to more errors than composing in pen. Particularly, students corrected more errors on the computer than they did in pen, confirming that the word processor had a positive effect on editing.

In another classroom study comparing the use of the word processor and paper and pencil in writing, Collier (1983) examined whether such tools would significantly increase the number and complexity of writing processes and improve the overall effectiveness of writers’ revising strategies. Collier identified four types of operations offered by the computer, namely addition, deletion, substitution, and reordering in six areas of revision (punctuation, words, phrases/clauses, T-units, idea clusters and paragraphs). It was evident that his subjects’ writing supported the use of the substitution operation in the area of words, phrases, and clauses more than

idea clustering or paragraph. Collier maintains that hand written tasks are more effective for content revisions. In other words, the word processor encourages revision merely at the surface level. It is to be noted, however, that this study was conducted when the word processor was just introduced to college students. The fact that computer writing is becoming more common among students now, to investigate whether the results of a similar study proves true in the current environment would be enlightening. Further, had the four inexperienced writers in Collier's study in fact been unskilled in revision initially, his research findings would not have been surprising.

A decade later, another classroom study comparing high school students' writing performed on the computer and writing by hand was conducted by Peterson (1993). It was discovered that word processing appeared to help students write longer texts (supporting Diaute's 1986 findings) and add more words during the revision process, but did not lead to greater revising in structure, punctuation, grammar or spelling areas.

Other L2 studies conducted in classroom settings, comparing writing processes between writing on paper and writing on the computer, reported a longer planning phase (e.g. Akyel & Kamisli, 1999; Li & Cumming, 2001 both cited in H.K. Lee, 2004), while others observed a shorter planning time in computer writing (Haas, 1989; Li, 2006). Some L2 research findings pointed to an enriched and extensive higher level revision process (e.g. Chadwick & Bruce, 1989; Phinney & Khouri, 1993; Li, 2006 ) while writing on the computer, whereas others demonstrated that writers' attention to local appearance during the writing phase obstructed substantial revision (e.g. Bridwell-Bowles et al., 1987; Collier, 1983; Haas, 1989). Several ESL researcher findings (Li, 2006; Li & Cumming, 2001) indicated that computer writing results in better quality essays.

Especially in test situations, where examinees are already under the pressure of producing a well-written essay under limited time, the word processor, as suggested by Diaute (1985), can help writers by eliminating physical and psychological constraints and thus, facilitates revision. L1 research evidence to date seems to point to an increased number of changes in students' drafts because technology promotes extensive and easy revision (Y-J. Lee, 2002). Y-J Lee (2002) examined differences in the composing processes of six ESL Korean students with

high proficiency in English when they wrote timed-essays on paper and on the computer. Although the small number of subjects prevents any generalization, we learn from the writers' self-reports that, participants had the tendency to compose a rough form of their essays on the computer first, then went back to expand it by adding sentences or sometimes paragraphs, which would be difficult to do on paper. All participants expressed that although they would have revised more after completing essays on paper, the limitations imposed by this mode made it impossible. For instance, indenting each paragraph, inserting sentences or paragraphs were impossible to do. Thus, because of this limitation, they revised their essays much less at any level in the paper mode (ibid). In addition, on the computer mode pre-writing time was shorter, while pause duration was longer.

Hence, no consensus as to which transcription mode leads to effective writing processes has been reached. As H.K. Lee (2004: 7) noted, specific research contexts and procedures seem to account for the different research outcomes. The research to date has shown conflicting findings regarding the various aspects of writing with pen or with the computer. Moreover, none of the above mentioned studies were carried out in EFL contexts. As most of the studies were conducted on either L1 subjects or subjects with extensive exposure to the L2, offering a closer focus on written products, composing processes and even writers' transcription mode preference in an EFL context may help illuminate such behaviors of a distinct group of L2 learners, thus additionally contributing to earlier research.

## **2.5 Computer-based writing assessment**

Although computers have played an important role in language testing since 1935 (Fulcher, 2000), it has become of increasing interest since constant advancement of technology has allowed us to be more creative in the use of computers to assess language skills. Especially for administrative purposes, computers offer numerous advantages, such as efficient storage of tests and written responses, neatly typed texts to distribute to raters, etc. Computer-based writing assessment in particular is an area in the field of language assessment where additional research is still welcome. Many concerns and issues have been raised with respect to computer-based writing assessment, such as how writing can be fairly assessed or how computers may have an effect on how test takers write, etc. Many studies have been

conducted on the various ways word processing on the computer affects writing, in test and non-test situations, as somewhat elaborated in the previous section. This section, unlike the previous which compares computer-writing to the handwriting mode, discusses two studies (Kim, 2002 and Y-J. Lee, 2006) in detail due to their contextual similarity to the current study.

In a recent study conducted by Y-J. Lee (2006), 100 graduate students from various fields took a process-oriented computer-based writing placement test (The CEEPT or Computerized Enhanced ESL Placement test, which is the computerized version of the process-oriented test initiated by Cho (2001) and cited earlier in this chapter and in the previous chapter.). The purpose of the study was to investigate the effect of the revision sessions facilitated by the computer on the quality of the revised drafts. In this test, examinees were given extended time to plan, produce and revise essays with the feedback from peers and the support from available resources (articles and video). In the morning workshop session, which included the brainstorming and discussion activities, examinees produced their first drafts. In the afternoon session, there was a 'peer review familiarization' task and the actual peer review session after which the revising of first drafts took place. Essay writing and revising were both done on the computer using the Microsoft Word program; however, test takers were restricted to only the copy and paste functions. The spell-check, grammar-check, dictionary or thesaurus functions were not allowed. The study investigated what level of revision test takers focused on and the extent to which the quality of written products differed between the first and second drafts. The results showed improved quality of revisions made, as there were significant score differences between drafts written, more words produced, and more organized drafts. The study did not emphasize, however, on how the use of the computer as a tool had any effect on the examinees' writing performance.

Although Y-J. Lee's (2006) study was able to capture authentic writing practices in terms of offering opportunities for discussions and peer review, the test was not analogous to everyday computer writing in terms of providing the opportunity to use functions that would generally be available to computer writers (e.g. spell and grammar checkers, dictionary, thesaurus). Indeed because that was not the focus of the study, such functions were not incorporated. Seemingly and conventionally, test takers cannot have their cake and eat it too. As East (2006) has



suggested, one way of altering the condition of L2 writing assessment in order to “find a balance between good measurement and good writing” is to add extra time to complete a task, building in feedback opportunities as Cho (2001, 2003) and Y-J. Lee (2006) have done in their studies or to add extra time and allow resources like in Green’s (1985) study. In the EFL context where severely-timed single drafted essays are the norm, including access to complete word processing functions would make up for the gap in L2 writers’ linguistic knowledge and promote the use of metacognitive strategies (e.g. self-monitoring) or social/affective strategies (e.g. resourcing). The inclusion of such functions is thus a means to compensate for the one distinct weakness of the timed test, the lack of resources, which also counts as the artificiality of the test format. That such functions are likely to have a positive effect on EFL writers’ performance on a test needs to be empirically supported.

In sum, instead of adopting the process approach to writing assessment, which would not be plausible in the EFL context, the current study would incorporate the use of all the functions available on the Microsoft Word as is done in that of Kim (2002). In Kim’s (2002) study, 87 ESL students enrolled in ESL courses at an American university took a group-administered computer-based writing test using the Track Changes function of the Microsoft Word processor. Additionally, the writing test was administered to 19 students individually in order to closely observe their writing processes. The individual test takers then participated in stimulus recall. All test takers’ essays were scored based on holistic and analytical rating scales which focused on language, organization, and content.

Kim used regression analysis to determine which subscales were significant predictors of good academic writing. To explore students’ strategies during the writing test, qualitative analyses concerning textual changes and verbal protocol were also carried out. In her study, Kim’s test takers relied heavily on the computer functions available (e.g. spell-check, grammar-check, thesaurus), however, the effect of the word processor functions on writing performance was not explored. Moreover, the effect of the presence versus absence of these functions or the extent to which an individual’s use and its effect were not investigated. Such features will be explored in the current study.

Kim’s and previous computer writing studies, which were for the most part conducted in an ESL context, have not shown how writing behaviors and writing



processes have been influenced by facilitative functions on the computer or by self-reflective questions. Moreover, the process-oriented approach in writing has not been able to find a place in large-scale or summative assessment contexts due to the concerns of cost effectiveness and difficult administration. Therefore, a computer-based writing test that is based on the process-approach - requiring written drafts - and provides facilitative functions deserves to be examined closely, taking into account EFL test takers' writing performance, writing processes, as well as their opinions towards the test.

## **2.6. Summary**

The literature review discussed here illustrates the body of research on the nature of writing, second language writing processes, L2 writing strategies, writing assessment and computer-based writing assessment. The discussions earlier in the chapter concerning writing process provide some insights into the constraints that second language writers may face. Writing in a second language may be hampered due to the need to focus on language prior to the content. The need to devote cognitive resources to generate language may imply that not much attention can be given to higher order functions of the task, such as content or organization (Weigle, 2002). Moreover, the cognitive process of text interpretation or reading as Hayes (1996) has highlighted as being a key process in writing may add to the difficulty of writing. The current study looks into ways that second language writers can be assisted in the writing process in test situations. Apart from test takers' language ability and individual characteristics, the nature of the test structure (e.g. aspects of testing conditions, input) in many ways influences test takers' performance on a test. The assessment of writing proficiency, in which the use of computer technology is continually expanding to include EFL regions, needs to be studied in terms of the effects these new test methods have on test takers' performance. The following chapter discusses methods in which the variables in the present study are investigated.

**CHAPTER III**  
**METHODOLOGY**

This study examines the possible influence of a test taker-centered computer-based writing test on test takers' writing performance. The chapter presents the methods applied in this study, covering the research design, participants, description of instruments employed, procedures of data collection and data analyses.

**3.1 Research design**

To explore the research questions posed in this study, both quantitative and qualitative analyses were performed. The quantitative part employs a randomized block design and a two by two-factorial pretest posttest control group design (Isaac and Michael, 1995). The two by two-factorial design was selected because it is a design where the effect of different treatment combinations can be studied at the same time, enabling the researcher to study the two main treatments or factors of interest in this study simultaneously. Specifically, the two factors are the facilitative features and required multiple draft writing. Figure 3.1 illustrates the two by two-factorial design in this study.

**Figure 3.1 Factors and levels**

Factor A: Facilitative Functions		
	With functions	Without functions
<b>Factor B: Multiple Drafts</b>	<b>Group A1 (1) N = 36</b>	<b>Group A2 (2) N = 36</b>
+ Functions	+ Functions	- Functions
+ Drafts	+ Drafts	+ Drafts
<b>With drafts</b>		
- Functions	<b>Group B1 (3) N = 36</b>	<b>Group B2 (4) N = 36</b>
+ Drafts	+ Functions	- Functions
- Drafts	- Drafts	- Drafts
<b>Without drafts</b>		

**Note: N=Number of subjects per block**

The randomized block design, a design that requires forming blocks or groups of matching subjects that are relatively homogeneous (Trochim, 2002), is selected for this study to ensure that variance in the data is reduced. The qualitative analysis part is descriptive and closely examines the characteristics of the test takers' written products and processes via textual and content analyses. These qualitative analyses are also conducted for triangulation purposes.

### 3.1.1 Variables

Several variables (Figure 3.2) taken into account in this study are the independent variables or the manipulated test features found in the T-CBWT (the required multiple drafts and the facilitative functions). The independent variables are expected to have some effect on the subjects' T-CBWT writing scores, or the dependent variable. The means of the test takers' writing test scores serve as the dependent variable.

**Figure 3.2 Variables studied**

	Variables	Execution	Scale
Independent	1. Facilitative features 2. Required multiple drafts	Both variables manipulated	N/A
Dependent	T-CBWT scores	Variable will be measured and scored	Continuous: interval

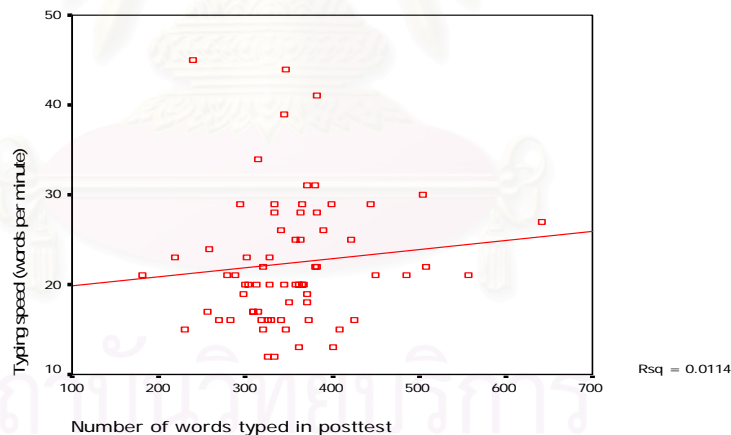
Another variable, which the researcher suspected to have an impact on test takers writing performance, is their English typing ability, which may either quicken or hinder their performance on the test. The subjects' typing speed was obtained by having subjects take a typing speed test via <http://www.typingtest.com> (Appendix F), a free typing speed test that can be accessed on the internet. The typing speed is measured by the average number of words per minute. This typing test was mostly completed on subjects' own time - some were completed in the computer lab right after they have completed the test and questionnaire - and results were sent directly to the researcher's email address.

In the pilot study, test takers' typing speed did not seem to have an effect on their writing performance. That is, within the 90 minutes given, test takers who were able to type fast in English did not necessarily perform well on their writing. Moreover, those who were not fast typists were still able to accomplish the writing task, reaching the expected number of (~350) words within the given time.

From the main study, sixty-nine subjects (almost 50% of the sample) submitted the typing test results which were used to describe the relationship between the two variables. The Pearson Correlation Coefficient was used to calculate any linear relationship occurring between subjects' typing speed and the number of words they were able to type during the posttest as well as the possible relationship taking place between their typing speed and posttest scores or the dependent variable.

The scatterplot initially studied and illustrated in Figure 3.3 showed no linear relationship between typing speed and the number of words typed.

**Figure 3.3 Relationship between typing speed and number of words typed in posttest**



The coefficient and the associated value  $p$ , as shown in corresponding Table 3.1 below, confirmed the results of the scatterplot in that a negligible or almost no relationship exists between typing speed and the number of words typed ( $r = .107$ ,  $p > .05$ ). Thus, typing speed in this study apparently is not associated with the number of words the subjects are able to type.

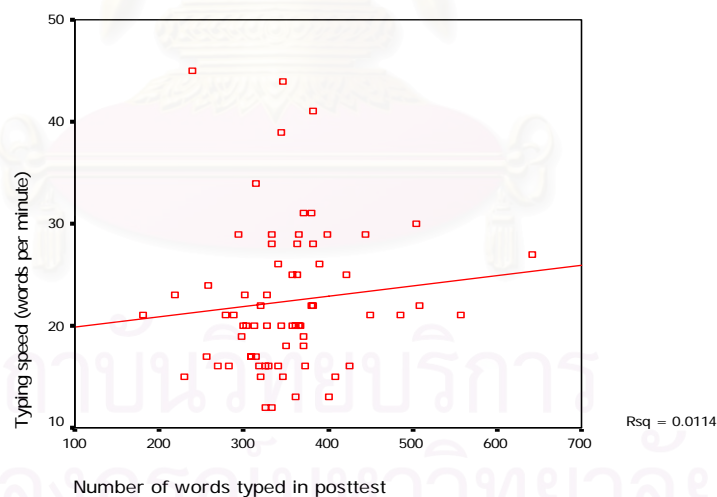
**Table 3.1 Correlation between typing speed and number of words typed in posttest**

Correlations(a)			
		Number of words typed in posttest	Typing speed (Words per minute)
Number of words typed in posttest	Pearson Correlation	1	.107
	Sig. (1-tailed)	.	.192
Typing speed (words per minute)	Pearson Correlation	.107	1
	Sig. (1-tailed)	.192	.

a Listwise N=69

Another test was conducted to check whether a relationship existed between the typing speed and posttest scores, the dependent variable. From the scatterplot shown in Figure 3.4, there seems to be a linear relationship between the two variables.

**Figure 3.4 Relationship between typing speed and posttest scores**



However, the coefficient and the associated value  $p$ , as shown in corresponding Table 3.2 below, again indicates that a non-significant relationship exists between the typing speed and posttest scores ( $r = .209, p > .05$ ).



**Table 3.2 Correlation between typing speed and posttest scores**

		<b>Correlations(a)</b>	
		Posttest Scores	Typing speed (Words per Minute)
Posttest Scores	Pearson Correlation	1	.209
	Sig. (1-tailed)	.	.065
Typing speed (WPM)	Pearson Correlation	.209	1
	Sig. (1-tailed)	.065	.

a Listwise N=69

According to Franzblau (1958), the classical and typical interpretation of " $r$ "<sup>1</sup>, ranging from zero to about .20, may be regarded as indicating no correlation. Later scholars (Hinkle, Wiersma & Jurs, 1988) explain that a correlation of less than .30 indicates little, if any, relationship between the variables. Thus, from the calculated output, typing speed in this study, against the researcher's expectations, is held unassociated with the posttest scores.

To reconfirm, a similar test was carried out to check the relationship between the typing speed and number of words typed during the pretest ( $r = .209, p > .05$ ) as well as the relationship between typing speed and pretest scores ( $r = .142, p > .05$ ), with the same outcome that no relationship existed between the typing speed and the pretest scores or the number of words typed during the pretest (See [Appendices G and H](#) for scatterplots and correlation coefficients). Therefore, typing speed was dismissed from being an extraneous variable in this study.

Although typical moderator variables in TESL and language acquisition research (when they are not the major focus of the study) include sex, age, culture or language proficiency of the subjects (Henrichsen, L., Smith, M. & Baker, D., 1997), I do not consider gender or age as having any related effect on the subjects' writing performance. This is because the subjects are homogeneous in terms of nationality and cultural background and because they are studying in a Thai university at the same level, it is assumed that their age and educational backgrounds are similar.

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<sup>1</sup> **Typical Interpretation** One old classic and typical interpretation of " $r$ " is as follows:  
 " $r$ " ranging from zero to about .20 may be regarded as indicating *no or negligible correlation*.  
 " $r$ " ranging from about .20 to .40 may be regarded as indicating *a low degree of correlation*.  
 " $r$ " ranging from about .40 to .60 may be regarded as indicating *a moderate degree of correlation*.  
 " $r$ " ranging from about .60 to .80 may be regarded as indicating *a marked degree of correlation*.  
 " $r$ " ranging from about .80 to 1.00 may be regarded as indicating *high correlation*.  
 A. Franzblau (1958), *A Primer of Statistics for Non-Statisticians*, Harcourt, Brace & World. (Chap.7) *Italics in original.*

### **3.2 Stages of the research**

Overall, four main stages took place in the study. (1) Firstly, the instruments were self-developed and validated by five content experts in the applied linguistics field. (2) Then the pilot study was conducted from the beginning to the end of August 2006 in order to try out the administrative and analytic procedures that would be used in the main study and also to adjust problematic procedures involved in administering the tests, to refine the instruments (the tests, questionnaires, rating scales) and to improve the qualitative part of the study. Volunteer participants in the pilot study were 30 first-year undergraduate students from the Faculty of Commerce and Accountancy, Chulalongkorn University academic year 2006 and were from the same population as that of the subjects in the main study. To try out procedures, similar random assignment and administration steps were used as those in the main study. (3) Subsequently, revisions were made to the tests, the test administration, rating scales, questionnaires, interview questions, and to both the quantitative and qualitative data analysis procedures. (4) Finally, the main study was conducted, whereby tests and retrospective questionnaires were administered followed by stimulated retrospective interviews.

### **3.3 Population and samples**

The population in this study is from a context where English is used and taught as a foreign language, as the researcher is interested in studying how the selected factors would affect subjects from a Thai EFL environment.

#### **3.3.1 Population**

The population of the study is 525 Thai first-year Chulalongkorn University students studying in the Faculty of Commerce and Accountancy in the academic year 2006. They are both male and female freshmen who have newly entered the university from Thai high schools, mostly being high schools in Bangkok. Their ages range from 17-19. Their English proficiency levels differ due to varying previous background in, experience with, and exposure to the English language.

Although the T-CBWT is a proficiency test that may be administered to undergraduate students of any year, first year university students have been selected

for this research project because the researcher is interested in exploring writing processes of students who have not yet been influenced by English college writing. Needless to say, had the T-CBWT been applied to fourth year students in their final year of university study, subjects would have shown increasing interest in college writing as a preparation to studying abroad, thus leading them to take additional writing classes, which may have contaminated the research data collected.

Because writing deficiencies of university graduates have recently been a concern of employers especially in the business sector (Thapanachai, 2005), Commerce and Accountancy students were purposively selected.

### 3.3.2 Samples

There were 144 samples participating in this study. Note that the 30 volunteers who participated in the pilot study were excluded from the population. The purposively selected population consisted of 525 students of which the representative sample size, according to Krejcie & Morgan's (1970: 608) Table (Appendix D), is two-hundred seventeen. The stratified random sampling technique was employed to select two-hundred nineteen<sup>2</sup> students from the population. This technique was utilized to make sure that any key characteristics of individuals in the population were included in the sample. Stated differently, as students carry with them different English proficiency levels measured by the Chulalongkorn University Test of English Proficiency (CU-TEP), the stratified random sampling technique would ensure that students of all proficiency levels would be selected for the sample in the same proportion existing in the population.

Stratified sampling was achieved in steps. (1) The population was first categorized into three general proficiency groups using their Chulalongkorn University Test of English Proficiency (CU-TEP) scores as a basis. The mean score was 475.89; the standard deviation (S.D.) was 40.69. Those whose scores were at or below -1 S.D. of the mean score were grouped as the lower intermediate group, those between -0.5 S.D. to 0.5 S.D. were the intermediate group, and those at or above 1 S.D. were the advanced group. (2) When the three proficiency groups were

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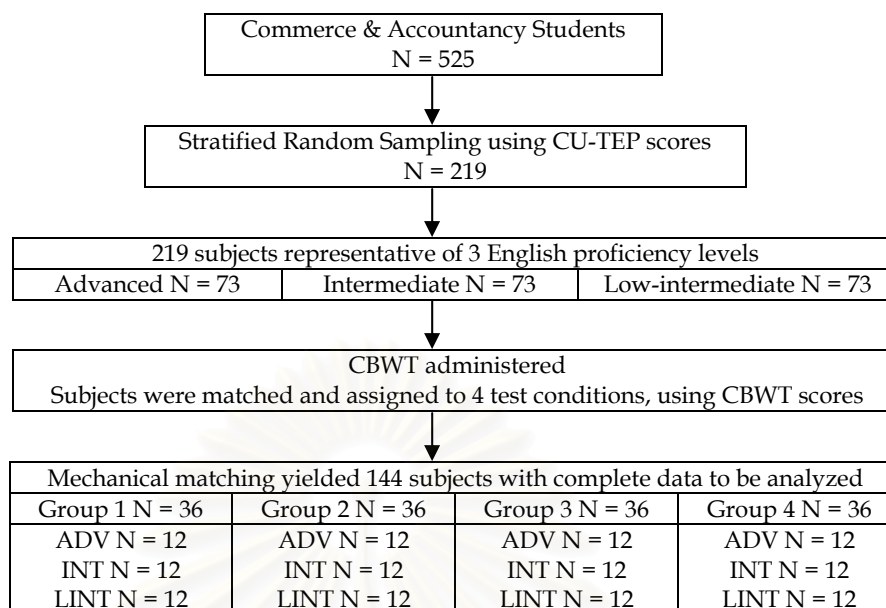
<sup>2</sup> Two-hundred nineteen, rather than two-hundred seventeen, subjects were selected in order to render exactly 73 subjects per writing proficiency level (Advanced, Intermediate, Low intermediate).

identified, the researcher randomly selected subjects from the three strata, using a table of random numbers (Fraenkel & Wallen, 2000: 646-647). The samples' proficiency based on their CU-TEP scores was used to obtain the representativeness by maintaining the same proportions of proficiency levels as the population.

(3) The population's English class schedules were traced and arrangements to meet with the population in all 12 classes were scheduled separately with their class teachers. With permission from the instructors, the researcher approached each class, explained to the population about the research project, the tests, and procedures for data collection. Those who were randomly selected agreed and signed up to take the computer-based writing pretest (CBWT), motivated by the opportunity to gain experience from writing in a computer-based test situation and learn something about their own writing. A few other students who were not enlisted also signed up. (4) Two hundred nineteen students from the population of ~500 took the writing pretest (CBWT), of which the scores were used as the criterion to mechanically match (Fraenkel & Wallen, 2000: 294) and assign subjects into separate experimental groups and the control group.

(5) Once obtained, the CBWT scores were studied to see how they dispersed and were divided into three writing ability groups. The mean score was 47.125, the standard deviation (S.D.) was 8.668. Those whose scores were at or below -1 S.D. of the mean score were grouped as the lower intermediate group, those between -.5 S.D. to .5 S.D. were the intermediate group, and those at or above 1 S.D. were the advanced group. Those with scores higher than 51 were assigned to the advanced group; those with scores ranging from 43 to 50 were in the intermediate group; and those with scores less than 43 were in the low-intermediate group. Subjects from the three writing ability groups were then mechanically assigned to the four test groups (Referring back to Figure 3.1, Groups A1, A2, B1 are the experimental groups, and B2 is the control group). Those whose scores did not match and whose scores were extreme were excluded, rendering 36 subjects per group. At this point, the sample size was no longer representative of the population as some of the randomly selected subjects did not show up for the pretest, some dropped out during the posttest phase and some subjects had to be excluded during the mechanical matching phase, yielding a sample of 144 with complete data for the analyses. Figure 3.5 illustrates the sampling procedures in this study.



**Figure 3.5 Sampling procedures**

**Note:** N = Number, ADV = advanced, INT = Intermediate, LINT = Low intermediate writing proficiency level

Many researchers are uncomfortable with relying on random assignment if there are fewer than 40 subjects in each group, since random assignment cannot guarantee the equivalence of groups unless the groups are sufficiently large (Fraenkel & Wallen, 2000: 286); therefore, the four groups were tested for equal variances. Using the computer-based pretest scores, the mean and standard deviation of each group were first obtained as seen in [Appendix E Table 1](#). To ensure normality of each group, the mean and the median were compared and noted for their proximity with the 5% trimmed mean for each group closer, in value, to the median. When the mean and median for each group are not extremely different, the distribution is considered normal (กัลยา วานิชย์บัญชา ๒๕๕๐: ๒๐๐/Kalaya Vanichbuncha, 2006: 200). To confirm, the Test of Normality was performed. Because the sample size per group is less than 50, the Shapiro-Wilks, rather than the Kolmogorov-Smirnov, was calculated. The significance level of .621, .642, .860, .589 are obtained for Groups 1, 2, 3 and 4 respectively (See [Appendix E Table 2](#)), all being greater than .05 leads to the conclusion that the four groups are normal.

Since this research also requires a randomized block design, the equivalence of each level within the groups was compared ([Appendix E Table 3](#)). The outcome demonstrated that the mean scores of the advanced levels of all four groups were comparable, as were that of the intermediate levels of all four groups and that of the



low intermediate levels of all groups, yielding levels and groups that can be matched. To reconfirm, an examination of the Levene test for homogeneity of variances was conducted (See [Appendix E Table 4](#)). The significant value of the Levene's test was .779, ( $p > .05$ ), confirming that there was no significant difference in the scores of any two groups.

### **3.4 Research instruments**

Four instruments were used for data collection, consisting of (1) the test taker-centered computer-based writing test (T-CBWT) and a computer-based writing test (CBWT), its counterpart used as the pretest (2) an analytical rating scale (3) retrospective questionnaires and (4) stimulated retrospective interview questions. The writing test was developed based on the framework of test development (Bachman & Palmer, 1996) (See [Appendix A](#) for the Development of the T-CBWT). The analytical rating scale was adapted from several holistic and analytical rating scales. The retrospective questionnaires were developed based on guidelines by Isaac and Michael (1995). Stimulated retrospective interview questions were self-developed. All instruments were evaluated by experts in the applied linguistics field.

#### **3.4.1 The T-CBWT and the CBWT its counterpart**

Two tests were given to the subjects: the pretest (CBWT) ([Appendix J](#)) and the posttest (T-CBWT) ([Appendix K](#)). As stated earlier the CBWT was administered as the pretest in order to classify subjects into writing proficiency levels. The T-CBWT was then administered as the treatment. The two tests are specified as follows:

##### **3.4.1.1 Description of tests**

Just as student-centered learning is an approach that focuses on the needs of the student, so is the test taker-centered test, which takes the test takers' needs into account, especially pertaining to writing.

The test taker-centered computer-based writing test or T-CBWT is a direct writing test, requiring test takers to write an evaluative or argumentative essay. The

test prompt is similar to that of the Chulalongkorn University Language Institute or CULI Writing Test prompt. The T-CBWT also mirrors TOEFL's independent writing section, which requires students to express their opinion, in writing, and support it based on their own knowledge and experience (Educational Testing Service, 2005). In addition, the writing task is the same as that of the computer-based TOEFL and the Test of Written English (TWE) (ibid.).

Specifically, there is one controlled topic or test prompt which represents one task type, namely writing an evaluative essay of approximately 350 words. This follows the recommendation of TOEFL iBT Tips (ibid. 2005: 21), which states that "An effective essay will usually contain a minimum of 300 words..." The controlled test topic covers general topical knowledge about social/environmental issues since such issues are current and can easily be related to.

The T-CBWT encompasses a multiplicity of characteristics. What makes it distinct is that test takers use the Microsoft Word processor and its functions - translation (or English - Thai dictionary), thesaurus, spell-check and grammar-check functions - to facilitate their writing. Another facilitative feature is the Self-reflective Reminder Questions or SRQ ([Appendix M](#)) given to test takers in checklist form to guide them through their writing. The questions are divided into 4 sections: what the writer should do during the pre-writing stage, during writing stage, revising stage, and editing and proofreading stage. The self-reflective reminder questions are distributed to test takers in the Thai version for clarity and comprehension.

In addition, draft writing is required (of two experimental groups). Examinees must utilize the Microsoft Word's Track Changes device to document any changes in the writing made from draft to draft. Those that are required to produce drafts must follow a structured approach to writing. That is to (1) produce an outline, (2) write the first draft concentrating on content, (3) revise the first draft focusing on content and organization, and (4) edit the second draft, working on language, grammar, and mechanics.

Further, the T-CBWT allows test takers 90 minutes to complete the task. This time allotment is one hour longer than that of the standard 30-minute single draft writing tests of similar formats. Translated key words are provided so that all test takers have equal head start.

The test orientation, test instructions and test procedures were presented in Thai to test takers in a Power Point Slideshow (Appendix I) and on 4 handouts: (1) Instructions and prompt (Appendix K) (2) Self-reflective Reminder Questions (Appendix M) (3) Instructions Card (Appendix N), explaining the draft writing procedures and Track Change device and (4) Functions Card (Appendix O), explaining how to use the facilitative functions.

To clarify, the T-CBWT was given to subjects in three versions. The first version, given to experimental Group 1, allowed test takers to use facilitative functions and required them to write multiple drafts. The second version, given to experimental Group 2, required test takers to write multiple drafts without receiving help from the functions. The third version, given to experimental Group 3, allowed test takers to use facilitative functions. The control group, Group 4, received the parallel form of the CBWT with no facilitative features allowed nor draft writing. In sum, there were altogether 4 test conditions. Power Point presentations and handouts given to the four groups all corresponded to the type of test each individual took. Figure 3.6 presents a comparison between the T-CBWT and the CBWT.

**Figure 3.6 The T-CBWT and CBWT contrasted**

Test taker-centered computer-based writing test (T-CBWT)	Computer-based writing test (CBWT)
The manipulated independent variable used as posttest	Used as pretest
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• Prompts parallel to CULI writing test &amp; mirrors TOEFL's independent writing section</li> <li>• Employs the Microsoft Word program</li> <li>• Test takers' responses stored on computer</li> <li>• Administered, not scored via computer</li> <li>• Measures ability to write evaluative essays: one task type</li> <li>• Controlled topic &amp; short input given</li> <li>• Approximately 350 words required</li> <li>• 90 minutes allowed</li> <li>• <b>Either facilitative functions or required multiple drafts, or both, given</b></li> <li>• <b>Track changes device required</b></li> </ul>	<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• Prompts parallel to the T-CBWT</li> <li>• Employs the Microsoft Word program</li> <li>• Test takers' responses stored on computer</li> <li>• Administered, not scored via computer</li> <li>• Measures ability to write evaluative essays: one task type</li> <li>• Controlled topic &amp; short input given</li> <li>• Approximately 350 words required</li> <li>• 90 minutes allowed</li> <li>• <b>No facilitative functions or required multiple drafts</b></li> <li>• <b>Track changes device not required</b></li> </ul>

**CBWT: The counterpart**

The Computer-based writing test (CBWT) ([Appendix J](#)) is a writing test prompt which is parallel to the T-CBWT and was used as the pretest to measure the writing skills of participants in this study and to initially divide and match them into four similar groups before the manipulation. It is the replica of the T-CBWT but without facilitative functions or required drafts.

### 3.4.1.2 Dependability of the tests

The test prompts were adapted from TOEFL prompts, taking into consideration socio-cultural aspects and the degree to how test takers can relate and respond to the test prompt. Since the prompts were almost identical to that of the TOEFL independent writing prompts, its construct validity was assumed to be valid and attention was paid to its content validity. Three parallel test prompts were given to five content experts to evaluate. The experts were asked to give their comments on the appropriateness of the prompts as an instrument to measure the constructs (knowledge of syntax, vocabulary, cohesion) as well as the appropriateness of the test instructions, and parallel test forms.

The experts were asked to choose the most suitable in terms of content. Four out of the five experts agreed on the appropriateness of the current test prompt. Minor changes were made to the wording on the prompts to make it clearer to the test takers (See [Appendix B](#) for the Development of Test Prompts).

As stated by Bachman (1990: 183), a test is reliable if it can be assumed that the different forms of the test are equivalent, particularly that they are at the same difficulty level and have similar standard deviations. Thus, after being revised, the test prompts were tried out in the pilot study on 30 subjects and checked for level of difficulty using Scannell and Tracey's classical formula (1975: 223) to calculate the Difficulty and Discrimination values of both of the subjective tests.

The Difficulty Index formula (*ibid*) used is:

$$IDiff = \frac{S_H + S_L - [(n_T)X_{\min}]}{n_T(X_{\max} - X_{\min})}$$

When  $S_H$  = sum of scores of the group receiving high scores

$S_L$  = sum of scores of the group receiving low scores

$n_T$  = total number of subjects

$X_{\max}$  = the highest score awarded

$X_{\min}$  = the lowest score awarded

The Discrimination Index formula (ibid) used is:

$$IDisc = \frac{S_H - S_L}{n_H (X_{\max} - X_{\min})}$$

When  $S_H$  = sum of scores of the group receiving high scores

$S_L$  = sum of scores of the group receiving low scores

$n_H$  = total number of subjects in the advanced group

$X_{\max}$  = the highest score awarded

$X_{\min}$  = the lowest score awarded

The Difficulty Index (IDiff) for the pretest and posttest were 0.233 and 0.277 respectively, and the Discrimination Index (IDisc) for the pretest and posttest were 0.526 and 0.610 respectively. A test with a Difficulty Index<sup>3</sup> between 0.20-0.80 is a test that is not too easy or too difficult (สุพรรณ สุกมลสันต์ ๒๕๔๗/Suphat Sukamolson, 2004). A test with a Discrimination Index of more than 0.30 would be a reliable test that can be utilized (ibid).

To determine parallel forms reliability, a reliability coefficient was calculated (Appendix C) on the scores of the two measures taken by the same group of subjects in a counterbalancing technique applied during the pilot study. For the pretest, 15 volunteer students were given Form A1 and the other half was given parallel Form A2. The opposite was carried out during the posttest. In addition to the comparable means and standard deviations of the two forms (See Appendix C), the result of the Pearson's Correlation Coefficient, yields a high and positive correlation ( $r = .750$ ,  $p < 0.01$ ), assuring parallelism of the two forms. From the statistical tests conducted, it can be concluded that both forms are at the same difficulty level and are parallel forms that can be used reliably in the main study.

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<sup>3</sup> A test with a IDiff of below 0.20 is a test that is too difficult, while a test with a IDiff of over 0.80 is a test that is too easy (สุพรรณ สุกมลสันต์ ๒๕๔๗:๕๑/Suphat Sukamolson (2004: 51)).



### 3.4.2 Rubrics

The rubrics used in this study were developed for the evaluation of the written products for both the pretest (CBWT) and posttest (T-CBWT).

#### 3.4.2.1 Description of the rubrics

The analytical rating scale ([Appendix L](#)) used in the study was developed through the integration and adaptation of several holistic<sup>4</sup> and analytical<sup>5</sup> rating scales to ensure that as many relevant constructs as possible were incorporated. An analytic scale was chosen to enable investigation into the strengths and weaknesses in different areas of the test takers' writing performance. The rating scale focuses on three main aspects, namely, content, organization, and language use. It consists of nine subscales, which measured (1) clarity & explicitness, and (2) topic development & supportive examples; (3) rhetorical organization and (4) coherence; (5) knowledge of grammar, (6) vocabulary, (7) cohesion, (8) sentence structure and (9) mechanics. It was in a 5-point scale. Scores from 1 to 10, with 2 points allowed per subscale, indicated limited, flawed, moderate, competent, near-native/proficient respectively.

#### 3.4.2.2 Dependability of the rubrics and ratings

A holistic scoring system, which “offers no windows through which teachers can look in and no access points through which researchers can enter” (Hamp-Lyons, 1995: 759), “fails as a qualitative research tool” (ibid.). Thus, an analytical scoring system providing specific descriptors for different aspects of the written text, as opposed to holistic rubrics, was utilized in this study. The analytical rating scale was evaluated by five experts for appropriateness. Accordingly, adjustments were made before the three raters actually tried it out in the pilot study.

Rater training took place during the pilot study phase. At this time, the raters utilized the adjusted rating scale. Three raters, two of whom are experienced English

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<sup>4</sup> Writing Competency Exam Holistic Rating Scale (Retrieved August 2006), Idaho State University Writing Center Holistic Rating Scale (Retrieved August 2006), PSAT - A Writing Performance Definition (Retrieved August 2006), the Chulalongkorn University Language Institute's Scoring Scale for the Foundation English Course, TOEFL iBT Test - Independent Writing Rubrics (2005) the Michigan Writing Assessment Scoring Guide (Weigle, 2002)

language instructors and who had formerly taught a number of writing courses, and the researcher went through additional training during this time. Jacobs et al. (1981) and White (1984) provided guidelines for this rater training. Raters rated 9 samples written by pilot participants randomly chosen from the three proficiency levels. Samples that exemplified certain problematic situations, mostly samples that represented borderlines between two levels were discussed and clarified. Discrepancies were discussed, and additional alterations to the analytical rating scale were continuously carried out based on given comments.

With one established analytical scoring rubric used in the marking of the CBWT and T-CBWT, a possible source of rater inconsistency might have been inconsistent application of the rating criteria by different raters to different written samples (Bachman, 1990: 178-180). Thus to test inter-rater reliability, the Pearson product-moment correlation coefficient was calculated as suggested by Weigle (2002: 135) and seen in Section 3.5.3.2 below.

### **3.4.3 Retrospective questionnaires**

Two questionnaires were developed and used in this study for different purposes. Retrospective Questionnaire 1 was given out to test takers immediately after the CBWT (pretest) whereas Retrospective Questionnaire 2 was distributed after the T-CBWT (posttest).

#### **3.4.3.1 Description of the retrospective questionnaires**

Retrospective Questionnaire 1 ([Appendix P](#)) consists of two sections. The first section inquired information regarding test takers' English writing behavior on computers in non-test situations and a retrospective section solicited their writing behavior during the test on the computer-based writing pretest they had just taken. This questionnaire consisted of 4-point Likert scales and answer-choices format that were to be administered immediately after the pretest (CBWT). This questionnaire 1 was constructed for addressing the first part of research question 4 asking what the computer writing behaviors of the participants were.

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<sup>5</sup> Kim's (2002) Analytical Rubrics

Retrospective Questionnaire 2 ([Appendix Q](#)) also contains two main sections. Specifically, the first section related to participants' behavioral data on their usage of the facilitative features and their draft writing on the T-CBWT they had just taken. The second section included questions focusing on subjects' opinions towards the facilitative functions, draft writing and the T-CBWT. It was to be administered immediately after the test. It consisted of a 4-point Likert scale together with open-ended questions. Questionnaire 2 was constructed to address the second part of research question 4, asking for participants' opinions towards the T-CBWT, as well as the second part of research question 1, inquiring how the facilitative functions in the T-CBWT affected test takers' English writing processes.

### **3.4.3.2 Dependability of the retrospective questionnaires**

A 4-point Likert scale, rather than a 5-point Likert scale, was employed in both questionnaires in order to reduce the 'central tendency bias' which occurs when respondents try to avoid choosing extreme responses (Wikimedia, 2006). Such an even point scale requires respondents to exercise their discretion, hence, reducing the chance of respondents simply giving neutral responses without consulting the questions asked. An even-point Likert scale has become popular in social science studies since 1990 (รังสรรค์ โฉมยา ๒๕๔๘/Rungson Chomeya, 2005) cited in Vongpadungkiat (2006). Further supporting its popularity, Stanford University found that when using both even-point and odd-point scales in an opinion survey with an equal number of items, the even-point scale provided higher reliability estimate than the odd-point scale (ibid).

After its development, the questionnaires were evaluated by five experts, revised, tried out in the pilot study, and modified once again. As the Cronbach alpha can account for weighted responses, it was used to estimate the questionnaires' reliability during the pilot study, with the alpha level set at 0.75. The Cronbach Alpha reliability estimate computed for Questionnaire 1 and Questionnaire 2 showed alpha values of above 0.75, indicating acceptable reliability (Hair, et al., 1995). For the main study, the Cronbach alpha was again carried out to estimate internal consistency, both questionnaires receiving an alpha value of above 0.75, indicating acceptable reliability (ibid). See [Appendix R](#) for details, as the reliability test was conducted on each of the items and sections separately.

### 3.4.4 Stimulated retrospective interview questions

Stimulated retrospective interviews were chosen over verbal protocols in order to avoid any potential intrusive effects of the verbal protocols. The retrospective interview was expected to provide an additional means to better understand the test takers' processes and strategies. Retrospective interview questions (Appendix T) were designed to elicit participants' recollection of their composing processes such as generation of ideas, pre-writing, text production, drafting, revising, and facilitative function usage. Data from this part would also assist in triangulation.

Questions used during the interview were initially validated by five experts and tried out in the pilot study. Additional questions were added to the list to assure that examinees would be able to elicit relevant data on their writing strategies during the test.



Figure 3.7 summarizes the instruments used in the study.

**Figure 3.7 Research instruments**

Instruments	Objectives	Characteristics	Distribution time	Validity checks	Reliability checks
CBWT	To categorize subjects into writing ability levels	A computer-based writing proficiency pretest without facilitative functions or required drafts	Before administering the T-CBWT Nov.-Dec. '06	All instruments were evaluated, revised, tried out during the pilot study, and revised another time before implementing during main study	IDiff = 0.233 IDisc = 0.526  Parallel form $r = 0.75$
T-CBWT	To assess writing performance & elicit subjects' writing processes	A computer-based writing proficiency posttest employing MS Word functions and required drafts	~ 6 weeks after administering the CBWT Jan.-Feb. '07		IDiff = 0.277 IDisc = 0.610  Parallel form $r = 0.75$
Analytical Rating Scale	To rate subjects' writing performance	Analytical measuring three main components & nine sub-components	Used for rating both the CBWT & the T-CBWT		Inter-rater $r = 0.78-0.94$ ( $p > 0.05$ ) Pretest Alpha = 0.96 Posttest Alpha = 0.98
Retrospective Questionnaire 1	To elicit subjects' computer writing behavior in non-test & test situations	4-point Likert scales & answer choices	Immediately after the CBWT		Cronbach Alpha = .8749
Retrospective Questionnaire 2	To elicit information on subjects' facilitative functions usage & draft writing behavior and subjects' opinions towards the T-CBWT	4-point Likert scales, answer choices & open-ended questions	Immediately after the T-CBWT		Five Sections:  Alpha = .9010 Alpha = .7527 Alpha = .7996 Alpha = .7722 Alpha = .8946
Stimulated Retrospective Interview Questions	To elicit subjects' writing processes & strategies used during the T-CBWT for triangulation	Semi-structured	During the main study after subjects have taken the T-CBWT		N/A



### 3.5 Data collection

Quantitative data were gathered from the CBWT, T-CBWT test scores, and the Likert-scale retrospective questionnaires. The administration of the two tests and questionnaires took place towards the end of November 2006 throughout mid January 2007, with a four-week interval spent on scoring between the two administrations.

Qualitative data were gathered from the open-ended questions posed in Retrospective Questionnaire 2, from text analyses performed on examinees' drafts and from the stimulated retrospective interviews, which were conducted at a later period.

#### 3.5.1 Test administrations

The two tests, as described earlier, were administered to gather data needed: the CBWT served as the pretest and the T-CBWT, the posttest. The tests were administered in a language lab by the researcher. Before the administration of each of the tests, a short orientation was given to the test takers. The orientation instructed test takers on the test procedures and directions. The pilot study showed that all of the students were familiar with the Microsoft Word program and had no difficulty understanding the training session. Correspondingly, during the main study, examinees did not seem to have a problem using the Microsoft Word processor.

After the orientation, they were given 90 minutes to complete the test. Subjects saved their written document onto the computer and completed the retrospective questionnaires immediately after. The researcher saved the written pieces on to a USB drive and backup floppy discs and collected their questionnaires. The only difference between the two test administrations was that the posttest orientation was presented via individual Power Point slideshows.

Revolving around the availability of the computer labs and examinees' schedules, the data could not be collected all in one time. It took roughly two weeks for the CBWT or pretest to be administered to all the subjects. After the pretests were scored, taking up to four weeks, the scores were used to divide the subjects into four groups, as explained earlier. The T-CBWT or posttest was then administered to

three experimental groups (Groups 1, 2, 3) and the parallel CBWT was administered to the control group (Group 4). An orientation to the test in the form of a PowerPoint slideshow, as described above, was previously sent to the subjects via email. The researcher called subjects one week in advance reminding them to participate in the posttest and to preview the PowerPoint slideshow so they may have time to prepare themselves.

Because of conflicting schedules of examinees belonging to the same experimental group, they could not attend the same testing session scheduled for the same time. Hence, it was inevitable to have subjects from different test groups take their test together in one session. Therefore, for every testing session, the researcher had to preset the computers to accommodate examinees scheduled to take the test according to their assigned test format on a particular date. The researcher attempted to have every other computer turned off. In short, computers were set up and previously assigned for each examinee according to their assigned test format.

When test takers entered the computer lab, they were given a test packet and a retrospective questionnaire. To illustrate, an experimental Group 1 test taker would receive a test packet consisting of the test prompt, an instruction card, a function card, a self-reflective questions checklist and the retrospective questionnaire. Then they were requested to sit at their assigned computer according to their test group and the computer that has been set up for them. They viewed the orientation slideshow and were encouraged to ask any questions they had before beginning the test. The researcher and a research assistant walked the test takers individually or in small groups through instructions as needed, and were available throughout the test in case questions arose. After having saved their work, test takers were asked to complete and submit the retrospective questionnaire within the test session.

### **3.5.2 Stimulated retrospective interview sessions**

The researcher made arrangements to meet with twenty-four subjects at a later period for the stimulated retrospective interviews. The purpose of the interviews was to elicit additional information on the test takers' writing processes and strategies that can also be used for triangulation. The twenty-four subjects, six

subjects from each test group, were asked to retake the writing posttest, emulating the actual test environment. This time, the participants were given only around 30 minutes to do the task just as a simulation. Stimulated retrospective interviews were conducted immediately after the simulated test. The interviews were also set up in a simulated manner - with all the components available that were there during the actual test (the computer, the PowerPoint slide show, test instructions and prompts, the subjects' essays on the screen and questionnaires, etc.) acting as retrieval cues to help subjects remember what they had done. However, not all interviews could be conducted as such since some subjects had classes to attend. Therefore, some interviews were conducted one day after the retest, at the latest, since it was the soonest time subjects were available. A small payment was offered in return for their time and services. These were individual sessions.

### **3.5.3 Scoring**

In addition to the rubrics try-out period during the pilot study phase, the same three raters mentioned earlier, carried out the following procedures to maintain reliability:

#### **3.5.3.1 Scoring procedures**

Raters scored samples independently, being given their individual score sheet and advised not to write any comments or underline errors when scoring scripts, to avoid influencing the scores given by others.

The raters, being unable to meet together to grade samples at the same time and same place (to eliminate unnecessary sources of variance and to create a positive social environment in the way of enforcing and maintaining rating standards), were checked on regularly to see that each agreed with and adhered to the rating scale.

Raters were given individual sets of Analytical Rating Scales, Individual Scoring Sheets ([Appendix L](#)) and hard copies of subjects' final drafts. They were left to mark the samples at their convenient time. Once rated, the researcher collected all the material from the raters. Scores awarded by all three raters were transferred onto one scoring sheet for convenience when keying in data, which was to be carried out by a research assistant. This score transferring process also allowed the researcher to

identify any irregular discrepancies among the scores awarded. When discrepancies occurred, the researcher had all raters evaluate the sample again pinpointing only the main category (content, organization, language) and not the particular sub-category that was marked irregularly. Raters would change the original score awarded only when they deemed it appropriate.

The following criteria was set to categorize writing proficiency levels: scores > 50 = high level, scores between 40-50 = intermediate level, scores < 40 = low intermediate level. (Pretest scores are reported as follows: Maximum score = 67, Minimum score = 27, Mean = 47. Posttest scores are reported as follows: Maximum score = 69, Minimum score = 27, Mean = 49.7.) Samples of scored texts can be seen in Section 4.2.2.4 Chapter 4 or in [Appendix Y](#).

### 3.5.3.2 Dependability of scoring

Rater consistency was initially checked using the Pearson product-moment correlation coefficient to compute the correlation between raters, which allowed the researcher to estimate inter-rater reliability in detail.

Using pretest scores, a significant positive relationship existed between all the raters on all three main aspects of the text (content, organization, and language) with an  $r$  ranging from 0.787- 0.937 ( $p < 0.05$ ). The highest correlation existed between rater 1 and 2 ( $r = 0.937$ ,  $p < .05$ ). However, the scores of three raters were averaged and counted as the pretest scores in order to arrive at a more appropriate proximation of the subjects' performance. Table 3.3 presents the mean of raters' scoring during the pretest, also illustrating the proximity of scores awarded.

**Table 3.3 Rater scoring on the pretest**

	Descriptive Statistics		
	Pretest Mean	Std. Deviation	N
Rater 1	46.508	9.6502	144
Rater 2	46.958	9.7614	144
Rater 3	48.000	8.8858	144

Table 3.4 presents the overall rater correlation using posttest scores, demonstrating acceptable inter-rater reliability. However, to elaborate in terms of the three main aspects of the text (content, organization, and language) in detail, a

significant positive relationship existed between all the raters on all three main aspects of the text with an  $r$  ranging from 0.829 - 0.971 ( $p < 0.05$ ). Although a higher correlation existed between rater 2 and rater 3 especially on the organization and language aspects with an  $r$  ranging from 0.919 - 0.971 ( $p < 0.05$ ), the scores of all three raters were averaged and counted as the posttest scores. Overall, the inter-rater reliability figures for all aspects of the text analysis were highly acceptable, each one well above 0.87.

**Table 3.4 Overall rater correlation on posttest**  
Correlations

		Rater 1	Rater 2	Rater 3
Rater 1	Pearson Correlation	1.000	.937(**)	.869(**)
	Sig. (2-tailed)	.000	.000	.000
	N	144	144	144
Rater 2	Pearson Correlation	.937(**)	1.000	.881(**)
	Sig. (2-tailed)	.000	.000	.000
	N	144	144	144
Rater 3	Pearson Correlation	.869(**)	.881(**)	1.000
	Sig. (2-tailed)	.000	.000	.000
	N	144	144	144

\*\* Correlation is significant at the 0.01 level (2-tailed).

In addition, the coefficient alpha, as recommended by Ebel (1979) cited in Bachman (1990: 181) was used to compute inter-rater reliability, as more than two raters were involved. The Cronbach alpha coefficient for the pretest was 0.96, while the alpha coefficient for the posttest was 0.98, demonstrating acceptable inter-rater reliability. An alpha higher than 0.75 is interpreted as an acceptable level of inter-rater reliability (Hair, et al., 1995).

### 3.5.4 Coding of textual changes

The purpose of textual analysis was to study the writing processes of test takers, particularly to examine the types of revision changes made by test takers. Approximately ten percent of the 144 test takers' essays were reviewed in detail. Specifically, they were essays from eighteen test takers (i.e. 18 x 3 drafts = 54). These essays included three drafts each from nine randomly selected test takers of Test Group 1 and nine randomly selected test takers of Test Group 2. The essays represented work from three writing proficiency levels - six advanced, six



intermediate, and six low intermediate test takers. Because the texts composed by test groups 3 and 4 did not require more than one draft, it was not possible to use the Track Changes device as the Track Changes device is only enabled when more than one draft is written.

An in depth report of the qualitative analysis was on drafts of 12 test takers randomly chosen from the 18 test takers mentioned above, equally representing test takers from both test groups and three proficiency levels. (i.e. Six test takers from Test Group 1 - two test takers each from the advance, intermediate and lower intermediate levels and the same for test takers from Test Group 2)

The coding process encompassed the researcher and an experienced writing instructor who graduated in the field of applied linguistics reviewing the second and third drafts for textual changes on subjects' drafts identified via tracked changes realized by the Microsoft Word program. Tracked changes such as additions were identified by underlined texts and deletions were identified by strikethrough texts.

The category of changes included revision changes as defined by Faigley and Witte (1981) which included surface changes and text-based or meaning changes. Surface changes are classified into formal changes and meaning-preserving changes. Formal changes involve spelling, tenses, agreement, punctuation and all grammatical changes that have no effect on meaning. Several grammatical items were added onto Faigley and Witte's (1981) list. Meaning-preserving changes include additions, deletions, substitutions, etc. Text-based changes or meaning changes are classified into microstructure and macrostructure changes, which concern meaning.

In addition to Faigley and Witte's revision changes, organizational changes, inclusive of local relocations and global relocations, were added to overall revision changes. Codes were assigned to each of the types of revision changes. A plus (+) sign, minus (-) sign or (0) was placed after each code to signify whether the change improved, impaired or did not make any difference to the quality of the text, respectively.

#### **3.5.4.1 Coding procedures**

Test takers' first draft, second draft and third draft were compared. Visible tracked changes indicated by underlined or strikethrough segments on test takers'

drafts assisted the researcher. The types of changes made by writers were identified and noted down on the right margin of the papers in pre-assigned codes. The types of revision changes were then tallied. (See [Appendix W](#) for Revision Changes Coding Scheme and refer to [Chapter II Pages 27-28](#) to revisit the definitions and examples of each term).

#### 3.5.4.2. Dependability of coding

The researcher and the instructor coded the 18 x 3 essays independently and met to discuss any differences in coding. Based on the coding of the texts, an approximately 95% agreement was achieved between the researcher and the instructor, judging from the few differences in coding instances there were between the two.

### 3.6 Data analyses

Data analyses were approached by way of quantitative and qualitative analyses. Major statistical data analyses were computed on SPSS for Windows Version 11.5.

#### 3.6.1 Statement of hypotheses

For this study, the following hypotheses were to be tested:

Hypothesis 1: There is a significant difference between the writing performance mean scores of the test group with facilitative functions (Group A1) and the mean scores of the test group without facilitative functions (Group A2).  $H1: \bar{x} A1, \bar{x} B1 \neq \bar{x} A2, \bar{x} B2$

Hypothesis 2: There is a significant difference between the writing performance mean scores of the test groups with multiple draft writing (Groups B1 and A2) and the mean scores of the test groups without multiple draft writing (Groups B1 and B2).  $H2: \bar{x} A1, \bar{x} A2 \neq \bar{x} B1, \bar{x} B2$

Hypothesis 3: There is a significant interaction effect between the writing performance mean scores of the test group with facilitative functions and multiple draft writing (Group A1), the mean scores of the test group without facilitative functions but with multiple draft writing (Group A2), the mean scores of the test group with facilitative functions but without multiple draft writing (Group B1) and the mean scores of the test group without facilitative functions or multiple draft writing (Group B2).  $H3: \bar{x} A1 \neq \bar{x} A2 \neq \bar{x} B1 \neq \bar{x} B2$

To find out whether or not facilitative functions and drafts and a combination of these two factors have an effect on test takers' writing scores (Research questions 1a, 2a and 3) the two by two between-subjects factorial design was conducted. For the first hypothesis, corresponding to the first part of research question one, the main effect for independent variable A (Factor A: Facilitative functions) was tested. For the second research hypothesis, corresponding to the first part of second research question two, the main effect for independent variable B (Factor B: Multiple drafts) was tested. For the third hypothesis corresponding to the third research question, the effect for the interaction of variables A and B was tested. Finally, textual analysis of the test takers' written products and content analysis of their opinions were used to explore the fourth research question.

### 3.6.2 Data analyses for the 1<sup>st</sup> part of research questions one to three

The first part of research questions 1 and 2, as well as research question 3 concerned the written product:

*1a. Do the facilitative functions (thesaurus, translation, spell-check, grammar-check, self-reflective questions) in the T-CBWT have a significant effect on test takers' English writing scores?*

*2a. Do the required multiple drafts in the T-CBWT have a significant effect on test takers' English writing scores?*

*3. Which combination of factors (facilitative functions and/or the required multiple drafts) of T-CBWT has a greater significant effect on test takers' English writing scores?*

To address these three questions and to test hypotheses 1, 2 and 3, the posttest scores (T-CBWT) from the four test groups were calculated and compared using the two-way ANOVA. The two-way between groups ANOVA permits the researcher to address (1) the effect of the facilitative functions (Factor A), (2) the effect of the required multiple drafts (Factor B) and (3) the effect of a combination of facilitative functions and required drafts (Factor AxB) on the test takers' written performance. A two factor ANOVA is normally performed when we wish to examine the effect of two independent variables on one dependent variable analysis (Hinton et al., 2004). Thus, the effect of the independent variables (facilitative functions and required multiple drafts) on the dependent variable (test takers' writing performance scores) can be investigated using this statistical analysis. Before performing the two-way between groups ANOVA, initial data analysis consisted of

descriptive statistics, test of population normality and a test of homogeneity of variance to meet the assumptions (Coakes & Steed, 2001).

In addition to answering these three research questions, the researcher was interested in further examining which test format or test condition had an effect on the performance of each analytical sub-component (i.e. clarity & explicitness, topic development & supportive examples, rhetorical organization, coherence, sentence structure, cohesion, vocabulary, grammar, mechanics) at each writing proficiency level (advanced, intermediate, low intermediate). Thus, test takers' sub-scores from each analytical category, rather than the total posttest scores, were used for analyses. To calculate this, the Kruskal-Wallis  $H$  test for independent samples, the nonparametric equivalent to the one-way ANOVA, was performed to accommodate the small sample size of each writing proficiency level. That is, each group being studied now consisted of 12 subjects. To illustrate, in each Test Group there are 12 subjects from the advanced writing proficiency level, 12 subjects from the intermediate writing proficiency level and 12 subjects from the low intermediate writing proficiency level. In other words, analyses were carried out to determine whether there was an effect of test condition on test performance of any writing sub-component within writing proficiency levels, rather than the entire group of mixed writing proficiency levels. The Kruskal-Wallis  $H$  test was run for every writing sub-component until results revealed a significant difference between test performances of the four test conditions on some analytical sub-components within the writing proficiency level.

Since the Kruskal-Wallis  $H$  procedure does not identify where the significant difference lies and visual inspection of mean ranks does not suffice to make conclusions, Mann-Whitney  $U$  tests were performed to indicate statistically where differences were, as suggested by ศิริชัย พงษ์วิชัย ๒๕๔๘: ๒๒๔/Sirichai Pongwichai, 2005: 224. The Mann-Whitney  $U$  test (or Rank Sums Test), the nonparametric counterpart to independent samples  $t$  test, allows us to decide when a difference between samples can be claimed at our chosen level of significance (normally  $p < 0.05$ ) (Hinton et al., 2004). This was carried out by comparing the differences of sub-scores (of the nine sub-categories measuring clarity & explicitness, and topic development & supportive examples; rhetorical organization and coherence;

knowledge of grammar, vocabulary, cohesion, sentence structure and mechanics) between two test groups or test conditions at a time across writing proficiency levels.

### 3.6.3 Data analyses for the 2<sup>nd</sup> part of research questions one and two

The second part of research questions 1 and 2 concerned the writing process.

*1b. Do the facilitative functions (thesaurus, translation, spell-check, grammar-check, self-reflective questions) in the T-CBWT have an effect on test takers' English writing process?*

*2b. Do the required multiple drafts in the T-CBWT have an effect on test takers' English writing process?*

These questions were investigated by two means: quantitative and qualitative analyses. For question 1b, whether facilitative functions had any effect on test takers' writing processes was observed by studying test takers' frequency of usage of the facilitative functions during the process of writing. Questionnaire 2 Section 1 Part A (Appendix Q) which is in Likert scale form consisting of 10 items provides information on this part. Only test takers from Groups 1 and 3 who had access to these facilitative functions answered these questions. Prior to the analysis, the following criterion was set with mean scores interpreted as follows:

- 1.00-1.49 A very low degree (< 5 times)
- 1.50-2.49 A low degree (6-10 times)
- 2.50-3.49 A somewhat high degree (11-15 times)
- 3.50-4.00 A very high degree (>15 times)

High scores indicated frequent usage of each of the facilitative functions while low scores indicated infrequent or no usage. Then mean scores and the standard deviation (S.D.) for each writing proficiency level as well as the total mean scores and S.D. were calculated.

For question 2b, whether required multiple drafts had any effect on test takers' writing processes was observed by what test takers did on each draft during the writing process. In particular, the type of changes made from draft to draft and whether the changes made improved, impeded or made no difference to the quality of the overall essay were examined via textual analysis. Altogether, fifty-four (18x3) essays from eighteen test takers were studied in detail. That is essays (all three drafts) from nine randomly selected test takers of Test Group 1 and nine randomly selected test takers of Test Group 2. The essays represent work from three writing



proficiency levels - six advanced, six intermediate, and six low intermediate test takers.

This analysis of this part was qualitative in nature and reported in a descriptive manner. As mentioned earlier, revision changes from draft to draft were studied based on Faigley and Witte's (1981) Taxonomy of Revision Changes (See [Figure 2.3](#)). From test takers' written essays, different types of changes were identified and noted down as previously explained in Section 3.5.4 Coding of textual changes. Additional quantitative analyses were carried out looking into frequencies of the types of changes made on test takers' drafts.

### 3.6.4 Data analyses for the 1<sup>st</sup> part of research question four

The first part of research question 4 concerned the computer writing behaviors of the participants.

#### *4a. What are the computer writing behaviors of the participants?*

Characteristics of test takers' English writing behavior on computers in **non-test situations** are derived from data in Questionnaire 1 Section 1 Part A ([Appendix P](#)). This part of the questionnaire was in Likert scale form consisting of 22 items. Before the analysis was performed, the following criterion was set with mean scores interpreted as follows:

- 1.00-1.49 Very infrequent (never)
- 1.50-2.49 Somewhat infrequent (rarely)
- 2.50-3.49 Somewhat frequent (sometimes)
- 3.50-4.00 Very frequent (often)

High scores indicate frequent behavior and low scores indicate infrequent behavior. Mean scores and the standard deviation (S.D.) for each writing proficiency level as well as the total mean scores and S.D. were then calculated.

Data regarding writing behavior in test situations was gathered from Questionnaire 1 Section 1 Part B and Questionnaire 2 Section 1 Part C, drawing particularly from their experience working on the pretest (CBWT) and posttest (T-CBWT). Section 1 Part B of Questionnaire 1 provides data from a Likert scale consisting of 12 items and data from a question and answer-choices part that provides nominal data revealing subjects' pre-writing, during writing and post-

writing behaviors. Prior to the analysis, the following criterion was set. The mean scores are interpreted as follows:

- 1.00-1.49 A very low degree (24-1%)
- 1.50-2.49 A low degree (49-25%)
- 2.50-3.49 A somewhat high degree (74-50%)
- 3.50-4.00 A very high degree (100-75%)

High scores indicate a high and somewhat high degree and low scores indicate a low degree to a very low degree. Mean scores and the standard deviation (S.D.) for each writing proficiency level as well as the total mean scores and S.D. were then calculated.

Another part of the questionnaire in question and answer-choices format found in Questionnaire 1 Section 1 Part C is related to subjects' pre-writing, during-writing and post-writing behaviors. The data in this section was in frequency counts, thus cross tabulations were performed in order to examine the association between variables, namely writing behaviors across writing proficiency level and writing behavior across test group.

To closely examine test takers' writing behavior or processes and strategies during the test, stimulated retrospective interviews were conducted and analyzed qualitatively. Particularly, the interest of the current study was to identify writing strategies the test takers employed during the writing test, especially with the availability of facilitative functions and the required draft writing. Altogether twenty-four test takers, representing an equal number of (six) test takers from each test group and each writing proficiency level, were randomly selected for the interview. Specifically, two subjects from each writing performance level (advanced, intermediate, and low intermediate). However, due to mechanical error, complete data from twenty-one subjects were available for analysis. That is six subjects from test group 1 (with facilitative functions and drafts), six subjects from test group 2 (with drafts), five subjects from test group 3 (with facilitative functions), and four subjects from the control group.

The interview sessions were held in Thai, tape-recorded, transcribed and translated before being coded. Berg (2004) describes qualitative data analysis as consisting of the following concurrent stages: data reduction, data display, conclusion and verification. Following Berg's framework, the data analysis procedures for the verbal protocols were:

Data reduction - After the recorded interviews were transcribed, the transcriptions were simplified by transforming raw data into clearer forms, such as eliminating exclamations or utterances that are distracting and do not contribute to the understanding of the discourse.

Displayed data - The reduced data was then displayed in the form of a table, grouping the interviewees according to their test groups and writing proficiency levels and their reported statements in short chunks that were grouped according to topic. These displays helped the researcher to easily identify patterns in the data.

Final analysis - Finally, the statements reported by interviewees were coded using Mu's (2005) taxonomy (See [Figure 2.2](#)) and rechecked.

After these three steps, with the help of another instructor, the researcher concluded the analysis with comparable results of that of the instructor. This served as an inter-coder reliability check to increase the reliability of the qualitative data analysis process.

### 3.6.5 Data analyses for the 2<sup>nd</sup> part of research question four

The second part of research question four concerns participant's opinions towards the computer-based writing test they took.

#### *4b. What are the participants' opinions towards the T-CBWT?*

This question was investigated both by quantitative and qualitative analyses. For the quantitative analyses, data was derived from Questionnaire 2 Section 2 Part B ([Appendix Q](#)). Before the analyses were carried out, the following criteria was set. High scores indicated positive views toward the T-CBWT and low scores negative views. The mean scores are interpreted as follows:

- 1.00-1.49 Strong, negative view
- 1.50-2.49 Somewhat negative view
- 2.50-3.49 Somewhat positive view
- 3.50-4.00 Strong, positive view

Then mean scores and the standard deviation (S.D.) for each writing proficiency level as well as the total mean scores and S.D. were calculated.

The first two open-ended questions in the questionnaire asked those who strongly disagreed or disagreed with the statements "I feel the T-CBWT can measure

my true ability to write English.” and “I feel that Self-reflective reminder questions should be provided during a writing test.” to give their reasons. The third question asked why they would want to take this type of writing test in the future. The final question asked for other suggestions. The answers of students in the three proficiency groups were grouped and categorized according to the aspects of the T-CBWT they expressed their views about. Frequency counts of these aspects were later carried out.

Figure 3.8 sums up the data analyses carried out in the study.

**Figure 3.8 Data analyses**

Research Questions	Instrument	Data	Collection procedures	Analyses method
1a,2a,3 Looking into effects of facilitative features & drafts on written product	T-CBWT	Quantitative: T-CBWT scores	Test administration	Two-way ANOVA, Kruskal-Wallis <i>H</i> , Mann-Whitney <i>U</i>
1b Looking into effects of facilitative features on writing process	Retrospective Questionnaire 2 Section 1 Part A	Quantitative: Likert-scale	Retrospective Questionnaire 2 administration	Quantitative: Frequency counts
2b Looking into effects of required drafts on writing process	T-CBWT	Qualitative: Drafts	Test administration	Qualitative: Coding of textual changes using Faigley & Witte's 1981 Taxonomy
4a Looking into test taker writing behavior & writing strategies	Retrospective Questionnaire 1 Section 1 Part B & Questionnaire 2 Section 1 Part C & Stimulated Retrospective Interview Questions	Quantitative: Likert-scale, answer-choices Qualitative: Verbal reports	Retrospective Questionnaire 1 administration & Stimulated retrospective interviews	Quantitative: Frequency counts  Qualitative: Coding of interview transcriptions using Mu's 2005 Taxonomy
4b Looking into test taker perceptions towards T-CBWT	Retrospective Questionnaire 2 Section 2 Part B	Quantitative: Likert-scale, answer-choices Qualitative: open-ended answers	Retrospective Questionnaire 2 administration	Quantitative: Frequency counts Qualitative: Content analysis of open-ended answers

## CHAPTER IV

### RESULTS

This chapter reports the results of the quantitative and qualitative analyses of the subjects' performance and processes on the test taker-centered computer-based writing test. The research questions posed in this study are answered in this chapter, using the data gathered from subjects' writing performance test scores, subjects' written products, retrospective questionnaires, subjects' verbal reports during audio taped stimulated retrospective interview sessions.

Particularly, the chapter consists of four major sections. The first section looks into the effects of the T-CBWT on written performance, answering the first part of research questions one and two and research question three. The second part concerns the effects of the T-CBWT on writing processes, drawing from questionnaire data and text analysis, thus addressing the second part of research questions one and two. The third section reports on test takers' writing behaviors as derived from results from questionnaires and verbal reports, responding to the first part of research question four. The final part concerns the second part of research question four reporting on test takers' opinions towards the T-CBWT.

#### **4.1 Effects of the T-CBWT on written performance**

To answer the first part of research questions 1 and 2 as well as research question 3, the effects of the T-CBWT on written performance was addressed by conducting a two-way ANOVA. Prior to conducting the two-way ANOVA, the following assumptions (Hinton et al, 2004: 203) were met: the scores were measured on an interval scale, were from normally distributed populations, and the scores in each group had homogeneous variances (See Appendix Z for details of assumption tests prior to the two-way ANOVA).

The two-way ANOVA results, analyzed by SPSS version 11.5, yielded five illustrations. The descriptive statistics as seen in Table 4.1 in the following page shows the means and standard deviation of each test condition. Note that the test



condition with the lowest mean (47.506) is the control group, while the other groups have more or less equal means (~50).

**Table 4.1 Descriptive statistics for posttest groups**

<b>Dependent Variable: Posttest Scores</b>				
FUNCTION	DRAFT	Mean	Std. Deviation	N
without functions	without drafts	47.506	9.1145	36
	with drafts	50.625	9.2264	36
	Total	49.065	9.2403	72
with functions	without drafts	50.631	7.8327	36
	with drafts	50.039	6.4823	36
	Total	50.335	7.1447	72
Total	without drafts	49.068	8.5832	72
	with drafts	50.332	7.9224	72
	Total	49.700	8.2549	144

The Levene Test illustrated in Table 4.2 demonstrates that the homogeneity of variance assumption has not been violated ( $p > .05$ ).

**Table 4.2 Levene's Test revisited**

**Levene's Test of Equality of Error Variances(a)**

**Dependent Variable: Posttest Scores**

F	df1	df2	Sig.
2.183	3	140	.093

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept+FUNCTION+DRAFT+FUNCTION \* DRAFT

Table 4.3 below presents the estimated marginal means. From this table, it is seen that the mean of the "without drafts" and "without facilitative functions" condition is the lowest.

**Table 4.3 Estimated marginal means**

<b>DRAFT * FUNCTION</b>					
<b>Dependent Variable: Posttest Scores</b>					
DRAFT	FUNCTION	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
without drafts	Without functions	47.506	1.373	44.790	50.221
	with functions	50.631	1.373	47.915	53.346
with drafts	Without functions	50.625	1.373	47.910	53.340
	with functions	50.039	1.373	47.324	52.754

The output shown in Table 4.4 in the following page illustrates that the main effects for facilitative functions and required draft writing are not significant ( $p > .05$ ). The main effect of facilitative functions on the writing performance scores can be studied from Table 4.2 under the FUNCTION Source, presenting  $F(1, 140) = .854$ ,  $p > 0.05$ . The main effect of required drafting on the writing performance scores, shown under the DRAFT Source, presents  $F(1, 140) = .847$ ,  $p > 0.05$ . The  $F$  values being higher than .05 indicate that neither the availability of facilitative functions nor required draft writing has an effect on writing performance. Because neither effect is significant, post-hoc analyses are not calculated. The output also shows under the FUNCTION\*DRAFT Source that there is no interaction effect  $F(1, 140) = 1.826$ ,  $p > 0.05$ . This means that writing performance is not affected by facilitative functions, whether or not required drafts were written, vice versa.



**Table 4.4 Tests of between-subjects effects**

Dependent Variable: Posttest Scores								
Tests of Between-Subjects Effects								
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power(a)
Corrected Model	239.472(b)	3	79.824	1.176	.321	.025	3.527	.311
Intercept	355692.960	1	355692.960	5238.996	.000	.974	5238.996	1.000
FUNCTION	58.014	1	58.014	.854	.357	.006	.854	.151
DRAFT	57.507	1	57.507	.847	.359	.006	.847	.150
FUNCTION * DRAFT	123.951	1	123.951	1.826	.179	.013	1.826	.269
Error	9505.068	140	67.893					
Total	365437.500	144						
Corrected Total	9744.540	143						

a Computed using alpha = .05

b R Squared = .025 (Adjusted R Squared = .004)

That the two-way analysis of variance revealed that neither the availability of facilitative functions nor required multiple drafts influenced the writing performance of test takers in any test condition prompted the researcher to further investigate whether test condition had an effect on examinees writing performance on different aspects (content, organization, language) at different writing proficiency levels (advanced, intermediate and low-intermediate). Specifically, analyses were carried out to determine whether there was an effect of test condition on test performance of any analytical sub-component (i.e. clarity & explicitness, topic development & supportive examples, rhetorical organization, coherence, sentence structure, cohesion, vocabulary, grammar, mechanics) within writing proficiency levels.

These analyses were carried out using the Kruskal-Wallis  $H$  test for independent samples, the nonparametric equivalent to the one-way ANOVA. Due to the small sample size for each group (now 12 cases per group), nonparametric tests rather than parametric tests were applied. The Kruskal-Wallis  $H$  is an appropriate test for these analyses because the data consists of more than three independent samples (subjects from the three writing proficiency levels) with unordered treatments. The Kruskal-Wallis  $H$  does not assume that the data are normally distributed, nor do the variances have to be equal (Lowry, 1999 - 2008). However, the samples have to be independent and randomly drawn from the source population and the sample sizes should be as equal as possible across groups, both of which are the cases in this study.

Positive results from the Kruskal-Wallis  $H$  tests reveal that, for all three proficiency levels, there exist significant differences between test performances of the four test conditions on some analytical sub-components. The Ranks table, Table 4.5, indicates the number of participants within each test condition and the mean rank of

**Table 4.5 Ranks description on low intermediate writers' mechanics scores**

Ranks			
	GROUP	N	Mean Rank
Posttest Mech	Facilitative Functions & Drafts	12	34.29
	Drafts	12	21.25
	Facilitative Functions	12	26.00
	Control Group	12	16.46
	Total	48	

**Note:** Mech = Mechanics

scores within each test group. If there were no differences between the groups' scores, we can expect the mean ranks to be roughly equal across the four groups.

To investigate whether the subgroups were different in mechanics scores, the Kruskal-Wallis Test  $H$  was conducted as illustrated in Table 4.6. For the low intermediate level writers, the four groups do not appear to be equal in their scores on Mechanics. In this analysis, the Kruskal-Wallis Chi-Square value of 11.836 and the Asymptotic Sig., the estimate of the true  $p$  value of .008 ( $p > 0.05$ ) together reveal that the difference between the scores on Mechanics of the four test groups is significant.

**Table 4.6 Kruskal-Wallis  $H$  Test on low intermediate writers' mechanics scores**  
Test Statistics(a,b)

Posttest Mechanics 3Raters	
Chi-Square	11.836
df	3
Asymp. Sig.	.008

a Kruskal Wallis Test

b Grouping Variable: GROUP

The Asymptotic  $p$  or "Asymp. Sig." as seen in Table 4.6 is an estimate of the true  $p$  value or probability value. If this Asymptotic  $p$  value is less than 0.05, then we overwrite the null hypotheses that there are no significant differences between Mechanics scores across groups and accept the alternative hypothesis which states that there are differences between Mechanics scores of at least 2 test groups at the 0.05 significance level.

To indicate where the difference lies between test groups, Mann-Whitney  $U$  tests were applied as post hoc tests, as recommended by ศิริชัย พงษ์วิชัย (๒๕๔๘: ๒๒๔)/Sirichai Pongwichai (2005: 224). The nonparametric Mann-Whitney  $U$  test is performed when the number of cases in each condition is equal to or less than 20 and there are two independent samples of ranks (Heiman, 2006). No tied ranks were present in any of the tests, yielding valid outcomes of the Mann-Whitney  $U$  tests. Table 4.7 presents the results of the Mann-Whitney  $U$  tests for the low intermediate writers. The table shows that the scores of the 'with facilitative functions and drafts' test group ( $\bar{x} = 6.25$ ) is significantly ( $p < 0.05$ ) higher than those of the 'with drafts'



test group ( $\bar{x} = 5.16$ ), the 'with facilitative functions' test group ( $\bar{x} = 5.66$ ) and the control group ( $\bar{x} = 4.83$ ) ( $p < 0.05$ ). The test also reveals that the scores of the 'with facilitative functions' test group is significantly higher than that of the control group ( $p < 0.05$ ).

**Table 4.7 Low intermediate writers' mechanics scores and Mann-Whitney *U* test results**

Test Group (Condition)	Means (SD)	Mann Whitney <i>U</i>	Exact Sig. [2*(1-tailed Sig.)]	Sig.
FFD	6.25 (.621)			
D	5.16 (1.26)	34.000	.028	.014*
FFD	6.25 (.621)			
F	5.66 (.778)	43.000	.101	.050*
FFD	6.25 (.621)			
C	4.83 (1.19)	21.500	.002	.001*
D	5.16 (1.26)			
F	5.66 (.778)	57.000	.410	.205
D	5.16 (1.26)			
C	4.83 (1.19)	58.000	.433	.221
F	5.66 (.778)			
C	4.83 (1.19)	40.000	.068	.034*

**Note:** FFD = Facilitative Functions and Required Drafts Test Group, D = Required Drafts Test Group, F = Facilitative Functions Test Group, C = Control Group

The Exact Significance value rather than the Asymp. Sig. for all of the Mann-Whitney *U* calculations is reported because the dataset in each group is small ( $N = 12$ ), thus reporting this significance level will reflect a more accurate judgment of significance (Hinton et al., 2004). Also, since the hypothesis is one-tailed (Null hypothesis: Scores of the experimental groups or groups with Facilitative Functions are higher than scores of the control group or groups without Facilitative Functions.), the  $p$  value is halved to ensure that the difference is in the correct direction (ibid.).

At the intermediate level, similar Kruskal-Wallis *H* results were found for Mechanics scores. Table 4.8 presents the differences in Mean Rank scores between the scores on Mechanics of the four test groups.

**Table 4.8 Ranks description on intermediate writers' mechanics scores**

		Ranks	
	GROUP	N	Mean Rank
Posttest Mech	Facilitative Functions & Drafts	12	32.83
	Drafts	12	22.00
	Facilitative Functions	12	27.79
	Control Group	12	15.38
	Total	48	

**Note:** Mech = Mechanics

Table 4.9 presents the Kruskal-Wallis  $H$  Test results of  $\chi^2 = 12.156$ ,  $df = 3$ ,  $p < 0.05$  which demonstrate that the difference between the scores on Mechanics of the four test groups is significant.

**Table 4.9 Kruskal-Wallis  $H$  test on intermediate writers' mechanics scores**  
Test Statistics(a,b)

Posttest Mechanics 3Raters	
Chi-Square	12.156
Df	3
Asymp. Sig.	.007

a Kruskal Wallis Test

b Grouping Variable: GROUP

For the Intermediate writers, the results of the Mann-Whitney  $U$  tests in Table 4.10 illustrate that the Mechanics scores of the 'with facilitative functions and drafts' test group are significantly higher than those of the control group ( $p < 0.05$ ). The Mechanics scores of the 'with facilitative functions' test group are also shown to be significantly higher than those of the control group ( $p < 0.05$ ). Why there was no significant difference between other test conditions will be discussed in the subsequent chapter.

**Table 4.10 Intermediate writers' mechanics scores and Mann-Whitney  $U$  test results**

Test Group (Condition)	Means (SD)	Mann Whitney $U$	Exact Sig. [2*(1-tailed Sig.)]	Sig.
FFD	6.83 (.389)			
D	6.16 (.834)	35.000	.033	.165
FFD	6.83 (.389)			
F	6.50 (1.00)	62.000	.590	.295
FFD	6.83 (.389)			
C	5.75 (.753)	19.000	.001	.005*
D	6.16 (.834)			
F	6.50 (1.00)	54.500	.319	.159
D	6.16 (.834)			
C	5.75 (.753)	47.500	.160	.080
F	6.50 (1.00)			
C	5.75 (.753)	40.000	.068	.034*

**Note:** FFD = Facilitative Functions and Required Drafts Test Group, D = Required Drafts Test Group, F = Facilitative Functions Test Group, C = Control Group

As predicted, Mechanics scores were also significantly different across test conditions among the advanced level writers as visually observed in Table 4.11, akin to that of the advanced and intermediates groups.

**Table 4.11 Ranks description on advanced writers' mechanics scores**

		<b>Ranks</b>	
	GROUP	N	Mean Rank
Posttest Mech	Facilitative Functions & Drafts	12	24.88
	Drafts	12	22.63
	Facilitative Functions	12	33.50
	Control Group	12	17.00
	Total	48	

**Note:** Mech = Mechanics

The Asymp. Sig. value of .017 presented in Table 4.12 indicates a significant difference between the scores on Mechanics of the four test groups in the advanced level.

**Table 4.12 Kruskal-Wallis *H* Test on advanced writers' mechanics scores**

<b>Test Statistics(a,b)</b>	
Posttest Mechanics 3Raters	
Chi-Square	10.248
Df	3
Asymp. Sig.	.017

a Kruskal Wallis Test

b Grouping Variable: GROUP

With regard to Advanced writers, the results of the Mann-Whitney *U* tests in Table 4.13 show that the Mechanics scores of the 'with facilitative functions' test group were significantly higher than those of the control group, the 'with required drafts' test groups, and the control group ( $p < 0.05$ ).

**Table 4.13 Advanced writers' mechanics scores and Mann-Whitney *U* test results**

Test Group (Condition)	Means (SD)	Mann Whitney <i>U</i>	Exact Sig. [2*(1-tailed Sig.)]	Sig.
FFD	6.83 (.577)			
D	6.66 (.887)	64.000	.671	.335
FFD	6.83 (.577)	42.000	.089	.044*
F	7.33 (.492)			
FFD	6.83 (.577)	45.500	.128	.064
C	6.25 (.965)			
D	6.66 (.887)	40.000	.068	.034*
F	7.33 (.492)			
D	6.66 (.887)	54.500	.319	.159
C	6.25 (.965)			
F	7.33 (.492)	26.000	.007	.003*
C	6.25 (.965)			

**Note:** FFD = Facilitative Functions and Required Drafts Test Group, D = Required Drafts Test Group, F = Facilitative Functions Test Group, C = Control Group

Upon examining clarity and explicitness, the Mean Rank visually observed in Table 4.14 pointed to differences across test conditions on the Clarity and Explicitness scores.

**Table 4.14 Ranks description on advanced writers' clarity & explicitness scores**

		Ranks	
	GROUP	N	Mean Rank
Posttest C&E	Facilitative Functions & Drafts	12	17.88
	Drafts	12	33.75
	Facilitative Functions	12	25.25
	Control Group	12	21.13
	Total	48	

Note: C&E = Clarity and Explicitness

The Kruskal-Wallis *H* test as shown in Table 4.15 revealed results of  $\chi^2 = 9.732$ ,  $df = 3$ ,  $p < 0.05$  with the Asymp. Sig. value of .021 interpreted as a significant difference between the scores on Clarity and Explicitness among the four test groups.

**Table 4.15 Kruskal-Wallis *H* test on advanced writers' clarity & explicitness scores**

Test Statistics(a,b)	
Posttest Clarity & Explicitness 3Raters	
Chi-Square	9.732
Df	3
Asymp. Sig.	.021

a Kruskal Wallis Test

b Grouping Variable: GROUP

Further, the Mann-Whitney  $U$  tests output seen in Table 4.16 indicates that Clarity and Explicitness scores of the 'with required drafts' test group were significantly higher than those of the 'with facilitative functions and drafts' test group, the 'with functions' test group and the control group ( $p < 0.05$ ).

**Table 4.16 Advanced writers' clarity & explicitness scores and Mann-Whitney  $U$  test results**

Test Group (Condition)	Means (SD)	Mann Whitney $U$	Exact Sig. [2*(1-tailed Sig.)]	Sig.
FFD	5.75 (1.05)			
D	6.83 (.717)	28.000	.010	.005*
FFD	5.75 (1.05)			
F	6.25 (.452)	45.000	.128	.064
FFD	5.75 (1.05)			
C	6.00 (1.04)	63.500	.630	.315
D	6.83 (.717)	39.000	.060	.030*
F	6.25 (.452)			
D	6.83 (.717)	38.000	.052	.026*
C	6.00 (1.04)			
F	6.25 (.452)	57.000	.410	.205
C	6.00 (1.04)			

**Note:** FFD = Facilitative Functions and Required Drafts Test Group, D = Required Drafts Test Group, F = Facilitative Functions Test Group, C = Control Group

In addition, the Mean Rank presented in Table 4.17 gives a visual estimation of a difference between test groups with regard to test takers scores on topic development and supporting details.

**Table 4.17 Ranks description on advanced writers' topic development & supporting details scores**

		Ranks	
	GROUP	N	Mean Rank
Posttest T&S	Facilitative Functions & Drafts	12	22.08
	Drafts	12	33.96
	Facilitative Functions	12	23.79
	Control Group	12	18.17
	Total	48	

Note: T&S = Topic Development and Supporting Details

The results of the Kruskal-Wallis  $H$  test presented in Table 4.18 uncover a significant difference ( $\chi^2 = 9.005$ ,  $df = 3$ ,  $p < 0.05$ ) between scores on Topic Development and Supporting Details across test conditions among the Advanced level writers.



**Table 4.18 Kruskal-Wallis *H* test on advanced writers' topic development & supporting details scores**

Test Statistics(a,b)	
Posttest Topic development & Supporting Details 3Raters	
Chi-Square	9.005
Df	3
Asymp. Sig.	.029

a Kruskal Wallis Test

b Grouping Variable: GROUP

Results of the Mann-Whitney *U* tests shown in Table 4.19 reveal that the scores for Topic development and Supporting details of the 'with required drafts' test group are significantly higher than those of the 'with facilitative functions and drafts' test group, the 'with functions' test group and the control group ( $p < 0.05$ ).

**Table 4.19 Advanced writers' topic development & supporting details scores and Mann-Whitney *U* test results**

Test Group (Condition)	Means (SD)	Mann Whitney <i>U</i>	Exact Sig. [2*(1-tailed Sig.)]	Sig.
FFD	5.91 (1.16)			
D	6.66 (1.07)	36.500	.039	.019*
FFD	5.91 (1.16)			
F	5.91 (.668)	63.000	.630	.315
FFD	5.91 (1.16)			
C	5.41 (1.16)	56.500	.378	.189
D	6.66 (1.07)	34.500	.028	.014*
F	5.91 (.668)			
D	6.66 (1.07)	31.500	.017	.008*
C	5.41 (1.16)			
F	5.91 (.668)	52.000	.266	.133
C	5.41 (1.16)			

**Note:** FFD = Facilitative Functions and Required Drafts Test Group, D = Required Drafts Test Group, F = Facilitative Functions Test Group, C = Control Group

As the scores under clarity and explicitness as well as topic development and supporting details were found to be significantly high for the advanced level writers in 'with drafts' test condition, a Kruskal-Wallis *H* test was calculated on overall content scores for confirmation.

**Table 4.20 Ranks description on advanced writers' content scores**

		<b>Ranks</b>	
	GROUP	N	Mean Rank
Posttest Content	Facilitative Functions & Drafts	12	19.00
	Drafts	12	34.17
	Facilitative Functions	12	25.58
	Control Group	12	19.25
	Total	48	

The Mean Ranks and results of the Kruskal-Wallis  $H$  test displayed in Tables 4.20 and 4.21 correspondingly show a significant difference between the overall Content scores across test conditions among the Advanced level writers ( $\chi^2 = 9.389$ ,  $df = 3$ ,  $p < 0.05$ ).

**Table 4.21 Kruskal-Wallis  $H$  test on advanced writers' content scores**

<b>Test Statistics(a,b)</b>	
	Posttest Content
Chi-Square	9.389
df	3
Asymp. Sig.	.025

a Kruskal Wallis Test

b Grouping Variable: GROUP

In sum, the outcome of the Kruskal-Wallis  $H$  tests interpreted jointly with results of the Mann-Whitney  $U$  tests reveal that test condition has an effect on Mechanics scores for all writing proficiency levels, also that test condition has an effect on clarity & explicitness scores as well as topic development and supporting details scores particularly for the advanced level writers.

From the exhaustive statistical test results, although there is no evidence from the two-way analysis of variance to conclude that either the use of facilitative functions or writing in drafts result in better writing performance, or that both factors combined lead to better writing performance, there is sufficient evidence, from the Kruskal-Wallis  $H$  tests, to state that test condition does in fact have an effect on certain aspects of writing across writing proficiency levels. The Mann-Whitney tests in particular confirmed that low intermediate, intermediate and advanced level writers in the 'with facilitative functions' test condition (regardless of whether or not they also had required drafts), obtained significantly higher scores on Mechanics than writers in other test conditions. Also, writers of the advanced level who were in

the 'with required drafts' condition obtained significantly higher scores on Clarity and Explicitness as well as Topic development and Supporting Details (or their overall Content scores) than advanced writers in other test conditions. This evidence points to implications discussed in the following chapter.

## **4.2 Effects of the T-CBWT on writing processes**

Data obtained from Questionnaire 2 Section I Part A1 provided information regarding the effects of facilitative function on writing processes, while information regarding what test takers did on each draft was derived directly from test takers' written drafts, on which textual analysis was performed. This section addresses the second part of research questions one and two.

### **4.2.1 Effects of facilitative functions on writing processes: Results from questionnaires**

Table 4.22 in the following page illustrates the degree of usage of the facilitative functions available to test takers Groups 1 and 3. The degree of usage is reported here in relation to test takers of each writing proficiency level. To easily observe the degree of usage of each facilitative function, question items have been rearranged from the original items found in the questionnaire. Prior to the analysis, a criterion<sup>1</sup> was set with mean scores interpreted accordingly.

Perhaps the most used facilitative function according to the data in Table 4.22 below, is the spell-check tool with test takers of all levels using the spell-checker to a somewhat high degree (3.08), approximately 11-15 times throughout the writing process and following the spell-checked corrections to a very high degree (4.14) throughout the process. The second most utilized facilitative function is the grammar-check function, following a similar trend. All writing proficiency levels used the grammar-check function to a somewhat high degree (3.04) and followed the grammar-checked advice to a very high degree (3.96) throughout the process.

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<sup>1</sup> 1.00-1.49 A very low degree (< 5 times)  
 1.50-2.49 A low degree (6-10 times)  
 2.50-3.49 A somewhat high degree (11-15 times)  
 3.50-4.00 A very high degree (>15 times)

Results show that the translation device (Item 5) was generally used to a somewhat high degree (3.36) and test takers on the whole also followed the advice provided by the translation device (Item 6) to a somewhat high degree (3.25) throughout the writing process. Conversely, the thesaurus (Item 7) was used in general to a low degree (2.39), about 6-10 times throughout the writing process. Test takers overall used the words as suggested by the thesaurus (Item 8) to a low degree (2.38).

**Table 4.22 Test takers' facilitative functions usage**

Identical items found on the Questionnaire	Facilitative Function Usage of Test takers from the Three Writing Proficiency Levels				Interpret- ation
	ADV (N=24)	INT (N=24)	LINT (N=24)	TOTAL (N=72)	
	$\bar{x}$ (SD)	$\bar{x}$ (SD)	$\bar{x}$ (SD)	$\bar{x}$ (SD)	
1. On this test, how much of the spell-check function did you use?	3.08 (1.40)	3.17 (1.39)	3.00 (1.15)	3.08 (.989)	Very high degree for all levels
2. On this test, how much of the spell-check advice did you follow?	3.88 (1.15)	4.46 (.658)	4.08 (1.06)	<b>4.14</b> (.997)	
3. On this test, how much of the grammar-check function did you use?	3.17 (.963)	3.04 (.955)	2.92 (1.10)	3.04 (.999)	Very high degree for all levels
4. On this test, how much of the grammar-check advice did you follow?	3.67 (1.29)	4.08 (.776)	4.13 (1.22)	<b>3.96</b> (1.10)	
5. On this test how much of the dictionary (translation) function did you use?	3.13 (1.32)	3.75 (1.35)	3.21 (1.14)	3.36 (1.29)	Somewhat high degree for all levels
6. On this test how much of the dictionary (translation) function did you follow?	3.25 (1.32)	3.21 (1.50)	3.29 (1.33)	3.25 (1.37)	Very high for INT
7. On this test, how much of the thesaurus did you use?	2.33 (0.88)	2.96 (1.00)	1.88 (1.10)	2.39 (1.37)	Low degree for all levels
8. On this test, how much of the thesaurus did you follow?	2.08 (1.17)	2.54 (1.10)	2.50 (1.28)	2.38 (1.19)	Somewhat high degree for INT
9. On this test, how much of the Self- reflective questions (SRQ) did you use?	1.75 (1.03)	2.25 (1.18)	1.75 (0.89)	1.92 (1.05)	Low degree for all levels
10. On this test, how much of the Self-reflective questions (SRQ) did you follow?	1.92 (0.88)	2.17 (1.0)	2.13 (1.39)	2.07 (1.10)	

**Note:** ADV = Advanced level, INT = Intermediate level, LINT = Low intermediate level

It should be noted, however, that intermediate writers used both the translation and thesaurus function to a significantly higher degree (3.75 and 2.96 respectively) than the advanced and low intermediate level writers did.

The least used facilitative function of all is the Self-reflective Reminder Questions (SRQ) (Items 9 and 10) with all levels consulting the SRQ only to a low degree (1.92 and 2.07 respectively), as little as 6-10 times throughout their writing process.

To sum up, if the amount of facilitative function usage can indicate whether the facilitative functions had an effect on the test takers' writing process, it could be said that the spell-check and grammar-check functions had more influence on test takers' writing processes by the amount of which they were utilized as compared to the other facilitative features provided.

#### **4.2.2 Effects of required multiple drafts on writing processes: Results from textual analysis**

The goal of this analysis was to better capture individual characteristics of writing. The results in this section are reported in a descriptive manner, emphasizing on individual writing patterns. Additional quantitative data reporting on frequencies of the types of changes made on test takers' drafts are also presented.

As previously explained, test takers were asked to use the Track Changes feature during their drafting. Only Groups 1 and 2, who were required to produce drafts, turned on the Track Changes feature, enabling any changes to be tracked and types of revisions to be studied. Revision changes from draft to draft were classified according to Faigley and Witte's (1981) Revision Change Taxonomy (See [Figure 2.3](#) for Revision Changes Taxonomy and definitions).

From the data analyzed, changes that were evident in test takers' drafts were all types of Formal (Spelling, Tense/Number/Modality, Abbreviations, Punctuations, Format) and Surface changes (Additions, Deletions, Substitutions, Permutations, Distributions, Consolidations) found in Faigley and Witte's taxonomy (Refer to [Figure 2.3](#)). Under Surface Changes, test takers were also found to make changes to grammatical areas of aspect, determiner, preposition, agreement (subject/verb agreement and pronoun agreement), and part of speech in addition to



the various Formal Changes laid out by Faigley and Witte. Organizational changes were also observed. However, there were no instances of Text-based Microstructure Consolidation Changes, Macrostructure Substitution, Permutation, Distribution, or Consolidation changes.

#### 4.2.2.1 Examples of surface changes

To introduce the types and characteristics of surface changes made, a summary of examples are listed in Figure 4.1 below. This figure presents examples of Surface Changes derived from test takers drafts. Strikethrough words indicate text deletions while underlined segments indicate text additions. Identification codes of individual test takers are shown in parentheses after each surface change example shown. The 'G' indicates which test group. 'ADV' indicates an example from an advanced writer; 'INT' indicates an example from an intermediated writer; and an 'LINT' in parenthesis illustrates an example from a low-intermediate writer. The number following the level indicator is the test takers' assigned identification number. To illustrate, G1ADV5 indicates test taker #5 from the advanced writing proficiency group who was in Test Group 1 (taking the test with allowed facilitative functions and required drafts). This code will be used throughout this chapter.

**Figure 4.1 Formal changes in test takers' drafts**

Formal Changes	Examples of Formal Changes by Test Takers
Spelling	(1)...people <del>can not</del> <u>cannot</u> use them. (G1INT19) (2)...that make the footpath smaller and <u>harder</u> to walk through. (G2LINT71)
Punctuations	(3)...we should make an extra space <u>,</u> independent from the old one on the footpaths to let the people walk comfortably <u>,</u> for them. (G1INT23) (4)...this restriction would lessen convenience for most people <u>,</u> (G2ADV37)
Format	(20) <del>h</del> <u>B</u> ased on people's rights and liberty, each individual should be able to get any job... (G2INT56) (21) Indentations added to beginning of paragraphs (G2LINT72)
Number	(5) It make less areas for vehicles than non selling on the streets <u> and</u> footpaths. (G1INT19) (6) Because vendors <u> need</u> to find new place to sell. (G2INT52)

Tense	(7) I <del>see</del> <u>have seen</u> a lot of street vendors in downtown. (G2ADV40) (8) For example, I once <u>walked</u> on the BTS bridges at the national stadium. (G2ADV40)
Modality	(9) They <del>do not</del> <u>cannot</u> sell in shopping centre because rent is very high. (G1LINT35) (10) Selling on the public streets <u>may</u> <del>is</del> caused of the accident... (G2LINT70)
Aspect	(11) For example, they are <u>hindering</u> the footpath... (G1LINT29) (12) However, the government should prepare the place for them for <u>selling</u> items... (G1INT20)
Agreement	(13) Finally, it is too dangerous for customers that eating on the streets because the streets <del>was</del> <u>were</u> build for car running. (G1INT19) (14) If you pass Bobae market, you will see the street vendors cross the road - like this road is <del>mine</del> <u>theirs</u> . (G1LINT35)
Part of Speech	(15) <del>Me</del> <u>I</u> myself am one of the people who have to depend on them. (G1INT23) (16) I agree with the <del>announced</del> <u>announcement</u> that street vendors selling food will be permanently banned...(G2LINT70)
Article	(17) The pollution will has <u>an</u> effect to brain lung and other part of body...(G2LINT72) (18) Thailand might be <u>a</u> <del>the</del> country which you can find something to eat or shop at anytime. (G2LINT71)
Preposition	(19) I disagree with this new restriction that street vendors...will be banned from selling on public streets and footpaths <del>in my</del> <u>community and in of</u> Bangkok. (G2INT52)

**Note:** Grammatical items added to Faigley and Witte's list are: part of speech, article, preposition.

Surface changes, according to Faigley and Witte's (1981) Taxonomy, are divided into Formal changes and Meaning-Preserving changes. Examples of Formal changes in Figure 4.1 above include spelling corrections and addition of punctuation marks. Format changes included font changes as well as the addition of spaces and alignment changes. Such changes, as Kim (2002) called them, were 'computer-specific' changes or changes that are aided by the MS Word program either instantaneously when mistyping or when test takers resort to the program's helping functions.

Test takers of both groups - the test group that was allowed MS Word features and test group that was restricted from such features, also produced other changes that relied on syntactic knowledge of the language. Referring to Figure 4.1 above, these grammatical changes included adding the plural form to nouns in Examples (5) and (6), making corrections to the tense in Example (7) or adding the past tense to the verb in Example (8), as well as changing modal verbs in Examples (9) and (10) and making corrections to aspect in Examples (11) and (12). Test takers were also aware of agreement and part of speech, such as subject/verb agreement in Example (13), pronoun agreement in Example (14), and part of speech corrections made in Examples (15) and (16). Several test takers made corrections to probably the most difficult aspects in English - articles and prepositions, as seen in Examples (17) through (19). These corrections of articles were made by low intermediate writers.

Apart from Formal Changes, test takers made an abundant of Meaning-preserving Changes to their drafts. Figure 4.2 below presents examples of Meaning-preserving Changes (MPC) from test takers' drafts. The most frequent type of Meaning-Preserving Change was Addition as seen in Example (20) and (21). These additions are made with the purpose of strengthening or modifying what the writer intended to express.

MPC Deletions were also performed. In Example (22), in order to clarify the intended meaning, the writer made a deletion, also making the sentence more concise. In Example (23), the writer wanted to make her statement less forceful. Thus, deleting could either make a sentence more concise, less repetitive or altering the strength of a particular assertion.

Another popular meaning-preserving change is Substitution. Words, phrases or sometimes clauses are replaced with others. Mostly, test takers performed substitutions with the purpose of sounding more academic, such as in Example (24). Many Substitutions, however, did not seem to make the effect of the sentence anymore different from the original, as seen in Example (25).

Less popular meaning-preserving changes are Permutations, Distributions and Consolidations. A MPC Permutation, defined by Faigley and Witte (1981), is a rearrangement within a substitution. Example (26) illustrates how a Permutation was performed. Although this Permutation did not result in a semantically correct

**Figure 4.2 Meaning-preserving changes in test takers' drafts**

Meaning-preserving Changes	Examples of Meaning-preserving Changes by Test Takers
Additions	<p>(20) So, <u>in my opinion</u>, I agree with the announcement... (G2LINT70)</p> <p>(21) Because the <u>street</u> vendors always selling on the street or footpaths so it can cause accidents to the people who driving or walking. (G1INT20)</p>
Deletions	<p>(22) Not all the street vendors <del>are the one who can't</del> can afford to own a shop. (G2INT56)</p> <p>(23) <del>The point is</del> does the grilled chicken with sticky rice at siam paragon have more nutrients...? (G2ADV43)</p>
Substitutions	<p>(24) <del>So</del> <u>Therefore</u>, they make the footpath narrow that is the cause of accident. (G1LINT29)</p> <p>(25) In summary, there are <del>a lot of</del> <u>many</u> disadvantages from selling food on public streets and footpaths... (G1INT19)</p>
Permutations	<p>(26) Moreover, people in Bangkok is not comfortable because it maybe have <del>seller a little</del>. → Moreover, people in Bangkok is not comfortable because it maybe have <u>a little seller</u>. (G2INT52)</p>
Distributions	<p>(27) So they make the footpath narrow that is the cause of accident and when we are hurried, we cannot walk fast because the people and the vendor distract us and that are very annoying. → So, they make the footpath narrow that is the cause of accident. When we are hurried, we cannot walk fast because the people and the vendor distract us and that are very annoying. (G1LINT29)</p>
Consolidations	<p>(28) Result in decreasing of National income Many people in rural areas who are waiting for growing season immigrate to Bangkok to find the jobs and most realize that selling on footpaths is easy for them. → Secondly, it results in decreasing of National income because most street vendors are people in rural areas who are waiting for growing season. (G2ADV37)</p>

**Note:** Examples taken from test takers' drafts are not altered from the original; ungrammatical or incorrect items are left as they are. Items in parentheses, if any, are added for clarification. The arrow symbol (→) indicates that the statement is "transformed into" the following one.

phrase, the structure was re-ordered, placing the adjective in front of the noun. MPC Distributions served to make longer sentences shorter and more effective, as in

Example (27). Transforming one sentence into two rids the possibility of an ungrammatical run-on. MPC Consolidations were scarce. In Example (28), transforming the two segments into one sentence achieved a concise sentence that linked two ideas, even though the two ideas do not show direct cause and result.

#### 4.2.2.2 Examples of meaning-related changes

Apart from Surface Changes, meaning-related changes or what Faigley and Witte call, 'Text-based Changes' were present in test takers drafts, especially Microstructure Changes or meaning changes that do not alter the summary of the entire text. The researcher interprets Microstructure Changes as those bringing new information to the paragraph, removing some ideas from the text or altering ideas within the text while having no overall effect (i.e. contradictions) on the main ideas of the essay. Examples of Microstructure Changes, from now on referred to as MIC, are displayed in Figure 4.3 in the following page.

Example (29) is a Microstructure Addition, adding specific information to the sentence, while the MIC Addition in Example (30) seems to have a linking effect to the paragraph that follows. Other MIC Additions in test takers' essays were also found to add new information through examples and details, refining content. Moreover, MIC Additions were performed for linking or transition purposes.

Although the MIC Deletion in Example (31) illustrates a better-structured sentence than when the selection is not removed, the selection, which was previously a MIC Addition, actually adds more substance to the essay. Thus, a Microstructure change can either improve or impede the quality of the essay. Other MIC Deletions found in drafts were performed with the purpose of removing any redundant or irrelevant information from the text.

Microstructure Substitutions performed resulted in modifications of the meaning of phrases or sentences to more appropriately reflect the writers' intentions. For instance, in Example (32), the writer replaced the word "safer" with a longer explanation, altering the meaning to meet the writer's objective.

Example (33) illustrates how a MIC Permutation was performed. Although this Permutation did not result in a syntactically correct phrase (lacking verb to be in



Figure 4.3 Microstructure changes in test takers' drafts

Microstructure Changes	Examples of Microstructure Changes by Test Takers
Additions	(29) It is wasteful because they can use this money for better things in the community <u>like education, social and economic.</u> (30) I agree with this statement <u>and these are the reason.</u> (G1ADV20)
Deletions	(31) Some vendors sell/lay their goods on the small footpath that make the footpath smaller and harder to walk through <del>and sight pollution to the city.</del> (G2LINT72)
Substitutions	(32) Thus, if there are no things on the footpaths, it is <u>safer.</u> → Thus, if there are no things on the footpaths, it is <u>more comfortable to walk on the footpath.</u> (G1ADV12)
Permutations	(33) However, the government <u>should be responsible for compromise by responsible by providing</u> the substitute area for the vendor so that they will have the area to make selling items and do not cause other the social problems. → However, the government <u>should compromise and responsible by providing</u> the substitute area for the vendor so that they will have the area to make selling items and do not cause other the social problems. (G1ADV7)
Distributions	(34) These problem can diminished by getting help from government to pass a law to control the street vendors to upgrade tt. → <u>Although street vendors sometimes cause problems such as low hygiene standard, disorder and unsatisfactory scene along the streets.</u> These problems can diminished by getting help from government to pass a law to control the street vendors to upgrade <del>##</del> <u>their standard and make things to be neat and acceptable.</u> (G2ADV37)

**Note:** Examples taken from test takers' drafts are not altered from the original; ungrammatical or incorrect items are left as they are. Items in parentheses, if any, are added for clarification. The arrow symbol (→) indicates that the statement is "transformed into" the following one.

front of the adjective), it served to clarify the phrase and make it more concise. The meaning has also changed slightly.

Microstructure Distribution as seen in Example (34) shows how one segment is transformed into two segments. Within this MIC Distribution, there is also a MIC Addition (the underlined part) that provides the reader with more specific detail. To perform this MIC Distribution, the writer used the complex sentence structure with the conjunction "although", slightly altering the meaning of the original sentence.

Meaning-related Changes also include Macrostructure Changes (MAC), major revisions that would alter the summary of the text. From the data analyzed only one test taker actually made a Macrostructure Addition as illustrated in Figure 4.4 below. This writer started the essay agreeing with the restriction on vendors. Later, however, the writer inserted this MAC Addition, describing the benefits of having vendors, a different topic altogether. Should a summary of the entire essay be made, it would concern the advantages and disadvantages of banning vendors and not the reasons to support this writer's standpoint. Thus, the MAC Addition in this case resulted in an unnecessary digression.

**Figure 4.4 A Macrostructure change in test taker's draft**

Macrostructure Change (MIC)	An Example of a Macrostructure Addition by a Low-intermediate Writer
Addition	(35) In the other hand, selling on the streets and footpaths can make people in that community have the market near their home so that they don't go shopping far away and it save the energy. Moreover, it make to happen the relation between people in that community. But it is a few of adventages if compare with disadvantages. (G1LINT70)

**Note:** Examples taken from test takers' drafts are not altered from the original; ungrammatical or incorrect items are left as they are. Items in parentheses, if any, are added for clarification.

In addition to revision changes found in Faigley and Witte's Taxonomy, the researcher observed two types of organizational changes made by test takers: local relocations and global relocations. Local relocations are phrases or clauses that are moved from one position to another within the paragraph, whereas global relocations are those which are moved from one position to another across paragraphs. These changes do not exist in Faigley and Witte's Taxonomy, but are also observed by Kim (2002) in her study. Examples of these organizational changes will be illustrated in the textual analyses of individual writers' drafts.

### 4.2.2.3 Quantitative analysis of revision changes

From the data studied in this part, the average number of revision changes made by 18 test takers from all three writing performance levels are reported in [Table 4.23](#). To determine the area in which test takers performed the most changes, the proportion of the number of changes in each area out of the total number of changes was computed. The percentages are shown in parentheses. The raw number of changes made in each area can be studied in [Appendix X](#). Advanced writers performed Microstructure changes (44.7%) most followed by Meaning-preserving changes (30.3%) and Surface changes (22%). Intermediate writers performed Meaning-preserving changes (46.0%) most followed by Microstructure changes (30.7%) and Surface changes (17.8%). Low-intermediate writers followed a similar trend as that of advanced writers. Macrostructure and organization changes were made the least in all levels. On average, intermediate writers made more revision changes, followed by low-intermediate writers and advanced writers.

**Table 4.23 Overall revision changes**

	MAC M (%)	MIC M (%)	MPC M (%)	SFC M (%)	ORG M (%)	Total M (%)
ADV (n=6)	0 (-)	9.1 (44.7)	6.1 (30.3)	4.5 (22)	0.6 (3)	20.3 (100)
INT (n=6)	0 (-)	8.3 (30.7)	12.5 (46.0)	4.8 (17.8)	1.5 (5.5)	27.1 (100)
LINT (n=6)	0.3 (1.4)	8.6 (38)	6.6 (29.1)	6.6 (29.1)	0.5 (2.1)	22.8 (100)

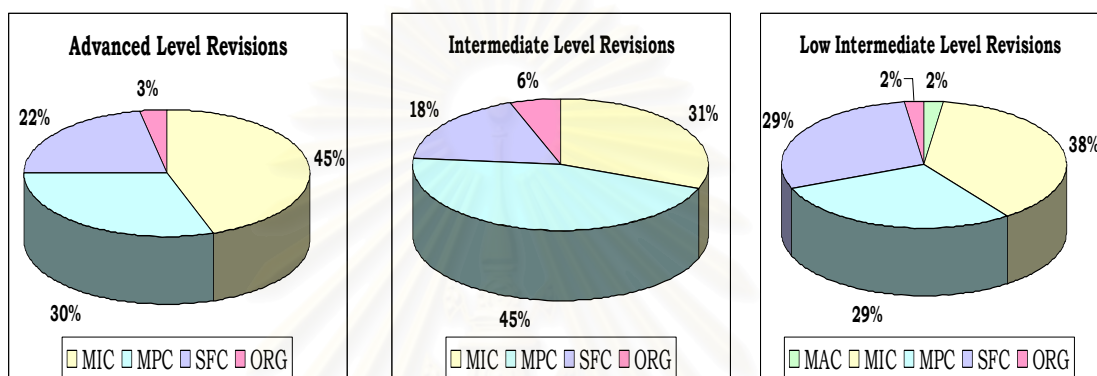
**Note:** SFC = Surface Changes, MPC = Meaning-preserving changes, MIC = Microstructure Changes, MAC = Macrostructure Changes, ORG = Organizational Changes, ADV = Advanced level writers, INT= Intermediate level writers, LINT = Low intermediate level

Figure 4.5 below jointly illustrates the proportions of the types of revisions made by all three writing proficiency levels.

Figure 4.5 in the following page illustrates that advanced writers performed mainly Microstructure changes (45%) followed by Meaning-preserving changes (30%), Surface changes (22%) and Organizational changes (3%). Intermediate writers performed Meaning-preserving changes (45%) the most followed by Microstructure changes (31%), Surface changes (18%) and Organizational changes (6%). Meanwhile, Low-intermediate writers followed a similar trend as that of the Advanced level

writers with 38% Microstructure changes, 29% Meaning-preserving changes, 29% Surface changes, and 2% Organizational Changes. A Low-intermediate writer made one Macrostructure change. Organization changes were made the least in all levels. On average, intermediate writers made more revision changes, followed by low-intermediate writers and advanced writers.

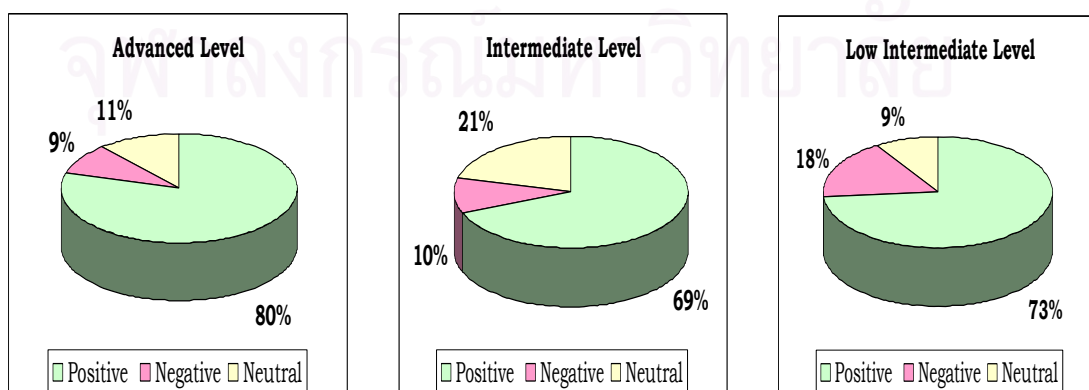
**Figure 4.5 Proportions of revision changes produced by three writing proficiency levels**



**Note:** MAC = Macrostructure Changes, MIC = Microstructure Changes, MPC = Meaning-preserving changes, SFC = Surface Changes, ORG = Organizational Changes

Not all revision changes improved the overall quality of the essay. Some changes made to the text worsened the quality of the text (negative changes), while other changes (neutral changes) had neither positive nor negative effect on the quality of the essay. The proportion of positive changes, negative changes and neutral changes made are illustrated via pie charts in Figure 4.6 below.

**Figure 4.6 Proportions of positive, negative and neutral revision changes**



Overall, test takers from the advanced writing proficiency level made 80% positive changes and 11% neutral changes to their drafts, while test takers from the intermediate writing proficiency level produced 69% positive changes and 21% neutral changes to their drafts. Test takers of the low intermediate writing proficiency level made 73% positive changes and 9% neutral changes to their drafts. They produced more negative changes than those from the advanced and intermediate levels.

In this section, the type, amount and quality of changes made by test takers offer the quantitative perspective of revision changes. The following section provides a detailed and descriptive analysis of test takers' revisions.

#### **4.2.2.4 Qualitative analysis of revision changes**

This section aims to capture individual writing processes focusing on the changes made from draft to draft. These 12 selected examples are not exhaustive but are selected for illustrative purposes. The examples are presented by grouping test takers based on the improvement they have made from pretest to posttest. That is test takers who have made significant improvement that their posttest scores shifted them one proficiency level higher than when they began with their pretest scores and test takers whose posttest scores have not changed drastically from their pretest scores. Each group contains representatives from all three writing proficiency levels and from Test Groups 1 and 2.

The same abbreviations previously used indicate the types of revision changes (e.g. SFC = Surface Formal Changes, MPC = Meaning-preserving Changes, MIC = Microstructure Changes, MAC = Macrostructure Changes, etc.) and the symbols (+, -, 0) indicate whether the change made is positive, negative or neutral respectively. To refer to test takers and their essays, English names were given to test takers in addition to the same identification codes assigned to each writer (e.g. G1ADV5, G2INT72). Figures L → M and M → H, for instance, identify test takers whose writing has improved, shifting them from low intermediate to the intermediate level and from intermediate level to the advanced level respectively. Figures L → L or H → H signify test takers whose writing scores did not change drastically and thus remain within the same level. Note that examples used as



illustrations in this section are not altered from the original; ungrammatical or incorrect items are left as they are.

#### 4.2.2.4.a Advanced level writers revision changes

Test takers from the advanced group for the most part remained high performing writers, whether or not they made many changes to their drafts. Some test takers from this group did not perform many revision changes, while others did. Their pretest and posttest scores are displayed to enable a comparison to be made.

Writer G1ADV5, Cheryl, submitted three drafts; however, the second draft showed no evidence of revision changes. In the 3<sup>rd</sup> draft (Refer to Figure 4.7), there were several positive surface changes (Example (2)) and one MIC Addition (Example (1)) which is incomprehensible to the reader. It seems as though this MIC Addition was a direct translation from Thai.

**Figure 4.7 3<sup>rd</sup> draft changes by test taker G1ADV5**

Cheryl G1ADV5: H → H Pretest score = 56.3 Posttest score = 55.6 (315 words)	
<p><b>MIC Addition -</b> (1) Added concluding sentence</p>	(1) <u>If they always think about not to increase the problems to others, to sell the goods on the street may not be banned anymore.</u>
<p><b>Surface Formal Changes +</b> (2) Correction: Added plural-s to nouns +</p>	(2) In conclusion, although selling goods on the street has the benefits to both of sellers and purchasers, doing this should not make other people hard to walk around or make traffic jam happen.

Being in Test Group 1, equipped with the help from the MSWord program, more revisions were expected. Overall, this advanced writer, Cheryl, was found to be a very light proofreader, as she did not revise much; however, sufficient convincing supporting details earned her high scores.

Test taker G2ADV37, Charlize, on the other hand, made substantial revision changes to the second draft (See Figure 4.8 below). This test taker performed many Microstructure Additions. Many of these MIC Additions were entire sentences (See

Examples (1) and (2)). Some were phrases (Example (3)) or words (Example (4)). These additions in general helped substantiate content.

**Figure 4.8 2<sup>nd</sup> draft changes by test taker G2ADV37**

Charlize G2ADV37: H → H Pretest score = 66.6 Posttest score = 67.6 (501 words)	
<b>MIC Additions +</b>	
(1) Added introduction	(1) <u>For the new restriction on my community about banning selling on public streets and foothbaths of Bangkok, I have three reasons to explain disagreement with this restriction.</u>
(2) Added entire sentences to explain and elaborate	(2) <u>With street vendors, we sometimes don't need to walk out of home, they could present service in frint of your houses.</u>
(3) Added phrase to elaborate	(3) In the world of competition, survival is the most importance so people would do anything to keep their lives last longer <u>without caring others.</u>
(4) Added transition word to link ideas	(4) <u>Consequently, they</u> immigrate to Bangkok to find the jobs and most realize that selling on footpaths is easy for them.
<b>MPC Addition+</b>	
(5) Added transition word and noun to link and clarify	(5) <u>Firstly, this restriction would</u> <del>L</del> essen convenience for most people.
(6) Added clause to specify or elaborate	(6) Without street vendors <u>who are normally seen around Bangkok on public streets and footbaths,</u> we may waste more times to shop food and products.
<b>MPC Substitution+</b>	
(7) Replaced noun with pronoun to avoid repetition	(7) Because we have to buy them <del>uy food and items</del> from markets, groceries and supermarkets.
<b>MPC Substitution+</b>	
(8) Replaced word with more appropriate meaning	(8) Then this could <del>cause</del> <u>effect</u> total economic statement of country.
<b>SFC Part of speech+</b>	
(9) Deleted -ed ending correcting to neutral verb after modal	(9) Because <del>M</del> <u>many</u> people in Bangkok couldn't refuse <del>d</del> the fact that they are used to buying food and other items from street vendors.

<p><b>SFC Part of speech+</b> (10) Added -ing ending to verb after preposition 'by'</p>	<p>(10) These make good chances for them to gain their income by <u>depending</u> on themselves.</p>
<p><b>SFC Agreement+</b> (11) Added -s ending to verb to agree with singular subject.</p>	<p>(11) Secondly, <u>It rResults</u> in decreasing of National income</p>
<p><b>SFC Format &amp; Spelling</b> (12) Changed from capital letter 'U' to small letter and corrected mistyped 'and'</p>	<p>(12) Finally, <u>uUnemployment angd</u> social problems will happen.</p>

This test taker also performed numerous Meaning-preserving Additions and Substitutions that served to elaborate, clarify or specify (See Examples (6), (8)), making the content more explicit and clear to the reader. Many MPC Additions were also for organizational purposes (Example (5)), while MPC Substitutions also worked to refine sentences, making them less repetitive (Example (7)).

Apart from changes that worked to improve content and organization, this test taker performed Surface changes in various areas. Examples (9) through (11) demonstrate that this writer was aware of Part of Speech in two particular areas as well as knowledge of subject verb agreement. Syntactic changes were limited to these two changes. Spelling and format were not ignored (as can be seen in Example (12)), neither were they extensive. Overall, this test taker attended to content, organization and language in the second draft.

In her 3<sup>rd</sup> draft, Charlize (G2ADV37) worked mainly on the conclusion, performing multiple Microstructure changes and correcting a misprint (See Figure 4.9 in the following page). She expanded and clarified the topic sentence of her conclusion by adding new information as in Example (1). However, the new information added conflicts with her main idea - disagreement with the ban of vendors, confusing the reader. A MIC Consolidation was performed first by adding a dependent clause (Example (2)) then by linking the two italicized segments from her 2<sup>nd</sup> draft (Example (3)), deleting misprinted item (Example (4)), and finally adding the underlined clause to complete the idea (Example (5)).

**Figure 4.9 3<sup>rd</sup> draft changes by test taker G2ADV37**

Charlize G2ADV37: H → H Pretest score = 66.6 Posttest score = 67.6 (536 words)	
<p><b>MIC Additions -</b> (1) Added a clause that contradicts main idea</p>	<p>(1) In conclusion, selling on public streets and footpaths may seem to be problems <u>but it isn't suitable to be permanently banned because it also has some disadvantages that we couldn't look over also.</u></p> <p>From 2<sup>nd</sup> Draft: In conclusion, selling on public streets and footpaths may seem to be problems <i>such as low hygiene standard, disorder and unsatisfactory scene along the streets. These problems can be diminished by getting help from government to pass a law to control the street vendors to upgrade them</i> →</p>
<p><b>MIC Addition +</b> (2) Added dependent clause</p>	<p>(2) <u>Although street vendors sometimes cause problems</u> (3) <i>such as low hygiene standard, disorder and unsatisfactory scene along the streets. These problems can be diminished by getting help from government to pass a law to control the street vendors to upgrade them</i> (4) <del>and</del> (5) <u>their standard and make things to be neat and acceptable.</u></p>
<p><b>MIC Consolidation +</b> (3) Transformed 2 segments into one, forgetting the punctuation</p>	
<p>(4) Deleted misprint</p>	
<p>(5) Added another clause to complete paused idea from the second draft</p>	

In this final draft, no other revision changes were made to the language or grammar. It may be logical to say that because this writer did not receive any feedback from the MSWord Grammar or Spell checkers, ungrammatical items may have been overlooked.

When comparing Cheryl to Charlize, we see that both advanced writers, performed revision changes to varying degrees. Cheryl made five revision changes (four positive changes and one negative change), while Charlize performed forty-five revision changes (thirty-nine positive items). It was expected that Cheryl having help from the MSWord functions would perform many revision changes, particularly Surface changes. However, she made only four. Conversely, Charlize, having no help from Grammar or Spell checkers, performed more (ten) Surface Formal changes. Moreover, Charlize performed many changes concerning content and organization, which resulted in a clear, substantial and explicit essay.

Unlike Cheryl and Charlize, the following two test takers also from the advanced writing proficiency level performed revision changes on all their drafts, increasing their writing scores somewhat. In her 2<sup>nd</sup> Draft, Gina primarily addressed content and organization (See Figure 4.10 below). A MIC Permutation was performed (Example (1)) on the introductory sentence for clarification purposes by rearranging and restructuring the sentence, adding on information and retaining the original idea. A MPC Consolidation (Example (2)) was performed by merging two sentences resulting in one concise sentence that preserved the meaning of the two sentences.

**Figure 4.10 2<sup>nd</sup> draft changes by test taker G1ADV12**

Gina G2ADV12: H → H Pretest score = 51.6 Posttest score = 55 (468 words)	
<p><b>MIC Permutation +</b>            (1) Substituted the first sentence from the 1<sup>st</sup> Draft with a new sentence, restructuring it by adding a modifying relative clause and deleting some areas of insignificance</p> <p><b>MPC Consolidation+</b>            (2) Merged two segments to create a concise sentence</p> <p><b>MIC Additions +</b>            (3) Added noun to specify</p> <p><b>MIC Addition -</b>            (4) Added phrase containing new idea that is ambiguous</p> <p><b>MIC Additions +</b>            (5) Added sentence which exemplifies</p> <p><b>MIC Additions +</b>            (6) Added concluding sentence</p>	<p><b>1<sup>st</sup> Draft:</b> I agree with this new restriction on my community. → <b>2<sup>nd</sup> Draft:</b> From the new restriction (1) <u>that banned the street vendors form selling on the public streets and footpaths</u>, I agree with it. <del>with this new restriction on my community.</del></p> <p style="text-align: center;"><i>Secondly <del>Finally</del>, the items that sell on publics streets and footpaths is cheaper than other place so there are many people there especially in the morning and evening. (2) It is very easy (3) <u>for the thieves</u> to steal <del>because there are many people. The thieves can take</del> the assets of the people effortlessly. (4) <u>Not only the buyer but also the seller.</u> (5) <u>When there are many people, they may be cheated by the buyer who don't pay the money.</u> (6) <u>Thus, this restriction can decrease the thieves.</u></i></p>



<p><b>Global Relocation 0</b></p> <p>(7) Switched positions of entire paragraphs by deleting the second paragraph and placing it before the conclusion</p> <p><b>MIC Substitution 0</b></p> <p>(8) Replaced with clause containing new and more convincing information but erroneous</p> <p>(9) Replaced with phrase that is more specific but uses inappropriate word choice</p> <p><b>Local Relocation +</b></p> <p>(10) Moved this sentence up from the very bottom</p> <p><b>MIC Addition+</b></p> <p>(11) Elaborated by adding new idea</p> <p>(12) Added a final closing sentence</p>	<p><b>3<sup>rd</sup> Paragraph:</b></p> <p><del>(7) Secondly, people will be danger from the vehicles on the street. Since when there are many street vendors on the footpath, there are a few area to walk. People have to walk on the street especially in the morning and evening that is very crowded. Thus, if there are no things on the footpaths, it is safer. →</del></p> <p><b>4<sup>th</sup> Paragraph:</b></p> <p><u>Finally</u>, people will be danger from the vehicles on the street. Since when there are many street vendors on the footpath, there are a few area to walk. People have to walk on the street (8) <u>that there are more vehicles</u>. Thus, if there are no things on the footpaths, it is (9) <u>more comfortable to walk on the footpath</u>.</p> <p><b>5<sup>th</sup> Paragraph:</b></p> <p>In conclusion, I agree with this new restriction, banned the vendors from selling on public streets and footpaths. However, I think that (10) <u>The government should make a choice for the vendors. For example, they should allow the vendors to sell on the public streets and footpaths in specific day (11) or provide the place for the vendors to sell their product instead of the public places.</u> (12) <del>These is</del> <u>are the best solutions way of this problem.</u> <del>The government should make a choice for the vendors. For example, they should allow the vendors to sell on the public streets and footpaths in specific day</del></p>
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Many MIC Additions were performed. Some served to modify (Example (3)), exemplify (Example (5)), and elaborate (Example (11)). Other MIC Additions successfully served to mark the endings of paragraphs lending the paragraph a sense of closure as seen in Examples (6) and (12). One MIC Addition found in Example (4), however, was not successful. Apparently, the test taker added a fragment, a phrase that was hanging out of context. Another type of content-related change was the MIC Substitution, as Examples (8) and (9) illustrate. However, both substitutions are erroneous when compared to the original statements.

Gina was one of the few writers who made organizational changes. She performed one Global Relocation (Example (7)), changing the 3<sup>rd</sup> supporting idea in the 1<sup>st</sup> draft into the 2<sup>nd</sup> supporting idea in the 2<sup>nd</sup> Draft, and vice versa. This was performed by using the 'cut' and 'paste' word processing functions. Doing this, however, did not have any impact on the quality of the overall essay. One Local Relocation did however benefit the concluding paragraph. As seen in Example (10), had the sentence not been moved from below to its current position, the essay would not have ended with an effective sense of closure.

In Gina's 3<sup>rd</sup> Draft (Figure 4.11), we see that she focuses mainly on clarifying the ambiguous areas found in her 2<sup>nd</sup> Draft. Unfortunately, her attempt to revise the

**Figure 4.11 3<sup>rd</sup> draft changes by test taker G1ADV12**

Gina G2ADV12: H → H Pretest score = 51.6 Posttest score = 55 (449 words)	
<p><b>MPC Permutation -</b> (1) Incorrectly rearranged the order of words</p> <p><b>MIC Addition +</b> (2) Added words to clarify meaning</p> <p><b>MPC Substitution+</b> (3) Replaced pronoun with specific noun and changed word choice</p> <p><b>SFC Number+</b> (4) Added plural -s ending to noun</p> <p><b>SFC Format+</b> (5) Changed the form of the word from spoken to written mode</p>	<p><b>2<sup>nd</sup> Draft:</b> <i>Not only the buyer but also the seller.</i> When there are many people, they may be cheated by the buyer who don't pay the money. →</p> <p><b>3<sup>rd</sup> Draft:</b> (1) <del>Not only the buyer</del> <i>Not the buyer only</i> (2) <u>be danger</u> but also the seller. When there are many people, (3) <del>they may be cheated</del> <u>the sellers are deceived</u> by the (4) <u>buyers</u> who <del>don't</del> (5) <u>do not</u> pay the money.</p>

sentence seen in Example (1) was only half way successful. Although clarification via the MIC Addition of “be danger” in Example (2) helped in comprehending the idea, it was not the correct part of speech. Moreover, the meaning preserving Permutation was actually unnecessary (See Example (1)) as the original structure of “not only the buyer” in her previous draft was already sequenced correctly. By replacing the pronoun “they” with a specific noun and substituting the word “cheated” with “deceived” (Example (3)), the original sentence was made better. The remaining Formal Changes in Example (4) and (5) also make the sentence grammatical and formal. In her 3<sup>rd</sup> Draft, Gina only a few revision changes that served to clarify more than correct grammatical errors or even add on to the content.

Angie is another test taker from the advanced writing proficiency level who focused on content-related and organizational changes in her 2<sup>nd</sup> draft. Like Gina, Angie made many Microstructure changes, constantly adding new information to her essay (See Figure 4.12 in the following page). The MIC and MPC substitutions (See Examples (1) and (3) respectively) as well as MIC Additions (Examples (2) and (9)) provided more substance and specifics. In Angie’s 2<sup>nd</sup> Draft, MIC Additions and MIC Substitutions were also used uniquely for linking ideas and creating unity. Examples (5) and (6) show how transition markers are inserted or added in place of other words, creating flow between ideas. Examples (4) and (7) illustrate how cohesion is achieved by adding entire closing sentences at the end of paragraphs.

Not all of Angie’s Microstructure changes improved the essay. In Example (8), a sentence that is ambiguous and not quite logical is added to the conclusion. The reader may be curious as to which people Angie was referring to and in which ways they were careless. Example (10) is interesting because it demonstrates a MIC Substitution that is performed within a Local relocation. The original part, which is deleted, is replaced with the final sentence now moved to the end of the paragraph. However, it is not an effective concluding sentence because it stresses the idea in the preceding sentence and does not deliver a sense of closure to the entire essay.

Figure 4.12 2<sup>nd</sup> draft changes by test taker G2ADV43

Angie G2ADV43: H → H Pretest score = 57.3 Posttest score = 67.6 (450 words)	
<p><b>MIC Substitution +</b> (1) Replaced sentence with another more concrete sentence</p> <p><b>MIC Additions +</b> (2) Added sentence stating reason</p>	<p>I disagree with the new restriction that would permanently banned the street vendors which selling food and all other items. (1) <del>The reasons in my opinion are listed as follows.</del> (2) <u>Although the vendors may lead to the trash problem because of careless people but the vendors have many advantages as well.</u> (1) <u>Moreover, if the vendors are banned, it could lead to many problems.</u></p>
<p><b>MPC Substitution +</b> (3) Replaced clause with another clause containing specific details</p> <p><b>MIC Addition +</b> (4) Added closing sentence, stressing idea stated in previous sentence</p> <p>(5) Added transition marker to link</p>	<p>Consequently, they would have to fight for a living. If they can't really find their new job, (3) <del>it could lead to the social problems.</del> <u>they would probably end up with being homeless people, robbers or hooligan.</u> (4) <u>Thus, many of social problems would follow.</u></p> <p>(5) <u>Another reason is that</u> people would have to spend more time getting things they want.</p>
<p><b>MIC Substitution +</b> (6) Replaced clause with transition marker</p> <p><b>MIC Addition +</b> (7) Added closing sentence</p>	<p>(6) <del>I think</del> <u>Furthermore,</u> it would waste my time travelling to and from the departmentstore. (7) <u>I'm really sure that not only me would have effected but also lots of people.</u></p>
<p><b>MIC Addition-</b> (8) Added sentence containing new information</p> <p><b>MIC Addition +</b> (9) Added sentence to elaborate</p>	<p>In conclusion, the street vendors may cause some problems (10) <del>but they also benefits lots of people as well.</del> (8) <u>However, if you think carefully, those problems are occurred from those careless people.</u> (9) <u>I'm pretty sure that if everybody have more considerations about buying things and littering, the problem would not occur.</u> (10) <u>In contrast, we would be able to get benefits from the street vendors without any problems follow.</u></p>
<p><b>MIC Substitution 0 within Local relocation</b> (10) Moved and replaced sentence with one that emphasizes the preceding</p>	

Only a few revision changes were made in Angie's 3<sup>rd</sup> Draft (See Figure 4.13 below). A MIC Substitution was performed (Example (1)) by replacing a transition word with a relative pronoun and verb, linking the previous sentence. Although the format was not adjusted, the substitution had a stronger effect than the previous linking word used. The MIC Deletion as seen in Examples (2) and (4) served to minimize the forcefulness of the original statement, also making the sentence more formal. Several Surface changes were made to correct grammatical (Example (5)) and mechanical (Example (3)) errors.

**Figure 4.13 3<sup>rd</sup> draft changes by test taker G2ADV43**

Angie G2ADV43: H → H Pretest score = 57.3 Posttest score = 67.6 (444 words)	
<p><b>MIC Substitution +</b> (1) Replaced linking word with relative pronoun and verb, linking the previous segment with the latter</p>	<p>So, I would need to go straight to the departmentstore or the shop just to get something to eat. (1) <del>Furthermore</del> <u>Which means</u> it would waste my time travelling to and from the departmentstore.</p>
<p><b>MIC Deletion +</b> (2) Removed clause, leaving a question in place</p>	<p>For example, you can get the sticky rice with grilled chicken for just 30 baht from the vendors but you might have to pay 100 baht to get them from Siam Paragon. (2) <del>The point is</del></p>
<p><b>SFC Format +</b> (3) Replaced small letter with capital letter.</p>	<p>(3) <del>d</del><u>D</u>oes the grilled chicken with sticky rice at siam paragon have more nutrients (4) <del>or can make you look better?</del> I guess not.</p>
<p><b>MIC Deletion +</b> (4) Removed second part of question</p>	<p>As you may known that people who (5) <del>selling</del> things on the street are very poor and low educated.</p>
<p><b>SFC Part of Speech +</b> (5) Removed -ing ending, correcting Part of Speech</p>	

Gina and Angie each made 18 revisions; Angie performing 14 positive changes and Gina making 11 positive changes. Track Changes clearly indicated that Gina's writing process involved global and local relocations in addition to content-related and language-related changes. Angie's essay, on the other hand, was focused heavily on content and organization by way of adding on sentences to link ideas.



Among the four advanced writers exemplified in this part, Angie and Charlize, who received higher scores than Gina and Cheryl, made more Microstructure changes that had the effect of generating more substance to the overall content of their essays. Many of these Microstructure changes were at the sentence level. Charlize, the only test taker equipped with Grammar and Spell check tools, was the heaviest proofreader in both content-related and surface-related areas, while the rest made fewer surface changes. Content-related changes were typically performed during the 2<sup>nd</sup> Draft, while surface changes could be found in both 2<sup>nd</sup> and 3<sup>rd</sup> Drafts.

#### **4.2.2.4.b Intermediate level writers revision changes**

Several test takers from the intermediate writing performance group improved their scores dramatically during the posttest, moving themselves up one level. Many, however, remained intermediate performing writers, whether or not they made many changes to their drafts. The first two intermediate writers, Jamie and Victor, had very different approaches to writing. Both, however, remained at the same level. The latter two intermediate writers, Kevin and Stephanie were able to rise up one level.

Jamie's 2<sup>nd</sup> and 3<sup>rd</sup> drafts revealed a similar trend in revision changes. In general, the majority of changes made to the drafts were at the phrase or word level. Refer to Figure 4.14 below for Jamie's 2<sup>nd</sup> draft revisions. Example (2) shows a word added to expand her idea. Examples (4) through (7) illustrate Meaning-preserving Substitutions mostly at the word level. Changes made in Examples (6) and (7) seem to be carried out in the attempt to avoid using the same word twice. The only change that was performed at the sentence, or in this case, clause level is illustrated in Example (3) where a clause, containing an idea that could be implied, was added.

**Figure 4.14 2<sup>nd</sup> draft changes by test taker G1INT19**

Jamie G1INT19: M→M Pretest scores = 47 Posttest scores = 46.3 (332 words)	
<p><b>SFC Number +</b> (1) Added plural -s to noun</p> <p><b>MIC Addition +</b> (2) Added word as an elaboration</p> <p><b>MIC Addition 0</b> (3) Added clause that can be inferred</p> <p><b>MPC Substitution 0</b> (4) Replaced with an inappropriate word</p> <p><b>MPC Substitution -</b> (5) Replaced with a word that does not seem sensible in the context</p> <p><b>MPC Substitution -</b> (6) Replaced with inappropriate word</p> <p><b>MPC Substitution +</b> (7) Replaced with a more specific word</p>	<p>Firstly, selling food of venders on the streets and the footpaths effects to traffic jam that obstacle car way running on the way. It make less areas for vehicle than non selling on the (1) streets_ (2) <u>and footpaths</u>. In addition, if there are many food stores, there are a large number of people exactly. (3) <u>Since people have to find some food for their hunger</u>.</p> <p>Secondly, food garbages of venders and buyers from opening food stores on the streets and the footpaths become dirty streets that (4) <u>persuade</u> <del>convince</del> many rats and insects.</p> <p>Thus dishes are unclean that affect to (5) <u>people</u> <del>purchase</del> health.</p> <p>In summary, there are a lot of disadvantages from selling food on public streets and footpaths, so the (6) <del>vendors</del> <u>salespersons</u> should move theirs stores from streets and footpaths to right places. For examples, the (7) <u>vendors</u> <del>sellers</del> should open the food stores on theirs own houses or the places that provided for selling food from allowing of government.</p>

Again, similar types of changes were performed in Jamie's 3<sup>rd</sup> Draft. Refer to Figure 4.15 for Jamie's 2<sup>nd</sup> Draft revisions. In addition to Meaning-preserving Substitutions (See Examples (2) and (11).) and a minor MIC Addition (Example (3)), Surface Changes were performed, all of which were syntactically correct as seen in Examples (1), (4), (5), (7), (8), (9) and (10).

**Figure 4.15 3<sup>rd</sup> draft changes by test taker G1INT19**

Jamie G1INT19 M→M Pretest scores = 47 Posttest scores = 46.3 (328 words)	
<p><b>SFC Spelling +</b> (1) Corrected spelling</p> <p><b>MPC Substitution -</b> (2) Replaced incorrect adjective for the noun</p> <p><b>MIC Additions +</b> (3) Added word to elaborate</p> <p><b>SFC Subject/Verb Agreement +</b> (4), (8), (10) Correction made (7) Verb corrected but aspect incorrect</p> <p><b>SFC Agreement +</b> (5) Replaced with appropriate word for countable noun</p> <p><b>SFC Format +</b> (6), (9) Corrected format</p> <p><b>MPC Substitution 0</b> (11) Replaced word that has same meaning</p>	<p>At the present, there are (1) <del>tremendous</del> <u>tremendous</u> selling food on public streets and footpaths that make (2) <del>a lot of</del> <u>many</u> troubles to social. Thus, there is the announcement of banning selling on public streets (3) <u>and footpaths</u> that I agree with this new restriction on my community because of five reasons.</p> <p>It (4) <u>makes</u> (5) <del>less</del> <u>fewer</u> areas for vehicle than (6) <del>non-selling</del> on the streets and footpaths.</p> <p>Fourthly, footpaths (7) <del>was build</del> <u>were building</u> for communication walking. If there (8) <del>are</del> <u>is</u> selling food on the footpaths, people (9) <del>can not</del> <u>cannot</u> use them.</p> <p>Finally, it is too dangerous for customers that eating on the streets because the streets (10) <del>was</del> <u>were</u> build for car running.</p> <p>In summary, there are (11) <del>a lot of</del> <u>many</u> disadvantages from selling food on public streets and footpaths, so the salespersons should move their stores from streets and footpaths to right places.</p>

In contrast to Jamie, who made Surface changes and many Meaning-preserving changes at the phrase or word level, Victor performed an abundant of complex changes at the sentence level. Refer to Figure 4.16 below for Victor's 2<sup>nd</sup> Draft revision changes. First of all, some Meaning-preserving Substitutions existed, such as in Example (2) where a word was replaced, Example (1) where an independent clause was replaced with another more specific one, or Examples (3), (7), and (15) where sentences were rephrased and moved to a different location within the paragraph.

MPC Distributions were also performed as seen in Examples (10) and (19). Long sentences were dissected into two or three shorter ones and were relocated within the paragraph. Conversely, several sentences were transformed into single segments with the operation of MPC Consolidations illustrated in Examples (17a) and (17b). All of these MPC Distributions and Consolidations were successfully carried out.

Additionally, Microstructure changes were performed. MIC Additions contributed more information to the content, clarifying (Example (2)), exemplifying (Examples (8)) or adding a punch line at the end of the essay (Example (22)).

**Figure 4.16 2<sup>nd</sup> draft changes by test taker G2INT58**

Victor G2INT58: M→M Pretest scores = 44.6 Posttest scores = 41.3 (297 words)	
<p><b>MPC Substitution +</b> (1) Replaced independent clause with one more specific to clarify</p> <p><b>MIC Addition +</b> (2) Added sentence to clarify previous idea</p> <p><b>MPC Substitution 0 within Local relocation</b> (3), (7), (15) Replaced sentence and moved to different location</p> <p><b>MIC Substitution +</b> (4) Replaced sentence with more specific one (5) Replaced unfinished clause with another to modify</p> <p><b>MPC Substitution 0</b> (6) Replaced word with another similar one</p> <p><b>MIC Addition +</b> (8) Added sentence to exemplify</p> <p><b>MIC Deletion -</b> (9) Removed potentially</p>	<p>I disagree with this restriction because (1) <del>we already know that thai people get used to the way they did</del> <u>most of thai people like to do something that is not very hard.</u> (2) <u>They like to do the simple thing.</u> For example, (3) <del>I often have noodle beside the road for my breakfast. Or my father usually buy</del> (4) <u>fruits with the street vendors which it is cheaper. orange from vendors that come to sell in front of my house</u> (3) <u>or me I like to have cart noodle for my lunch.</u> (5) <del>We know that most of thai people to buy everythings</del> <u>Many people know that thai people</u> (6) <u>like want to buy everything that is cheap even if it is not necessary.</u> (7) <del>And it is fun when people altogether in one place do everything to get a shirt, shoes or whatever that every person pay attention to them and if we get that it is a kind of win.</del> (8) <u>My aunt is a good example of this point she always buy clothes every time she goes to the market although she already have many in her house.</u> (7) <u>And sometimes I saw a lot of people in the market buy clothes which sold only 50 baht I think that is fun.</u></p> <p>(9) <del>I think that Thailand is not ready to do like</del></p>

<p>effective topic sentence</p> <p><b>MPC Distribution + within Local relocation</b></p> <p>(10) Transformed one sentence into three segments and moved to another position within the paragraph</p> <p>(19) Transformed one long sentence into two separate sentences</p> <p><b>MIC Deletion +</b></p> <p>(11) Removed informal transition</p> <p>(14), (16) Removed unwanted idea that can be implied</p> <p>(18) Removed an unwanted idea</p> <p><b>SFC Tense +</b></p> <p>(12) Replaced present tense verb with hypothetical past tense</p> <p><b>MPC Substitution +</b></p> <p>(13) Replaced pronoun with more specific noun</p> <p><b>MPC Consolidation + within Local relocation</b></p> <p>(17a) Transforms compound sentence into one simple sentence and moves to another location within the paragraph</p> <p>(17b) Transforms ideas from two sentences (17, 18) into one complex sentence</p>	<p><del>some counties that everybody have to buy everythings from supermarket. (10) <u>If we think of alternative way the street vendors sometimes help decreasing traffic jam because people do not need to go out for a long distant to buy food or items from supermarket and they also do not have to pay for the oil which is very expensive at the present.</u> (11) And If we (12) <del>ban</del> (13) them banned the street vendors what are they going to do. (14) <del>They do not have enough money to open their own company.</del> (15) <u>All of the thing they have done only enough for each day to eat.</u> (16) <del>But if we want to banned really it is sure that the problem will be made.</del> (17) <del>First, people will lost their job this is the most serious peoblem bacause this cause the effect to the whole country.</del> (18) <del>The economy will run roughly.</del> (19) <del>Second, this will cause people to become thieves because they do not have money to buy their food so they need to steal some money and if we did not solve this problem recently finally person will kill another person to get money this is another most serious problem.</del> (17a) <u>They will lost their job.</u> (15) <u>We all know that these people did not have their saving they sell day by day for their food and clothes.</u> (19) <u>After that these people will become theives recently. This will cause a murder.</u> (17b) <u>Also the GDP number will decrease which effect to the whole country.</u> (10) <u>But if we have these vendors on the street we will not need to go to the supermarket which is far away from our community.</u> (10) <u>This also help decreasing the traffic jam because people do not need to go out for a long distant to get some food or clothes.</u> (10) <u>Especially the price of oil is very high at the present.</u></del></p>
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<p><b>MIC Addition -</b> (20), (21) Added sentences that do not relate to contents in body and do not make sense</p> <p><b>MIC Addition +</b> (22) Added effective closing sentence</p>	<p>(20) <u>I wonder that Thailand have been totally change from the past year.</u> (21) <u>I think it is not a very good.</u> (22) <u>We already lost the river market and if we stiil have to lost street vendors I think there will be not more Thailand in the sight of anceters.</u></p>
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Some MIC Additions, specifically Examples (20) and (21) did not quite make any sense to the readers. Effective MIC Substitutions served to specify (Example (4)) and modify (Example (5)). There were also MIC Deletions performed to remove unwanted or unimportant sentences (Examples (14), (16), (18)) and a MIC Deletion to remove an informal transition (Example (11)). Unfortunately, one deleted sentence contained a good idea that was put to waste (Example (9)). Only one Surface change to tense was made (Example (12)).

Victor worked on only two drafts. Track changes revealed no revisions in his 3<sup>rd</sup> Draft. It is interesting to see that although Victor made numerous content-related revisions at the sentence level, similar to many advanced writers, his posttest score did not increase. This was because his first paragraph was dedicated to the benefits of having street vendors and the main ideas used to support his stance were not sufficiently elaborated in the second paragraph. More importantly, the majority of his revision changes were Meaning-preserving (10 altogether), adding no new ideas to his essay. Further, by performing Microstructure Deletions, ideas removed from the essay were not replaced with other more relevant ones. Although Victor did not perform as many Surface changes to the language as Jamie did, he possessed reasonable knowledge of basic sentence structure. Jamie, having access to Grammar and Spell checkers focused her revision chiefly on phrase or word level changes. Very few Microstructure changes were performed, and those that existed were at the phrase or word level that did not contribute to making her essay more substantial. Thus, it was apparent that revision for Jamie and Victor did not serve to improve their final drafts.

Kevin and Stephanie are two other intermediate writers. Both seemed to be well balanced in the way they revised their work, focusing their attention on content-

related changes as much as surface changes. Kevin was given access to the grammar and spelling tools, while Stephanie had none. Nonetheless, both writers' posttest scores increased, promoting them one level higher.

In Kevin's 2<sup>nd</sup> Draft was evidence of heavy content-related changes. See Figure 4.17 for examples of his 2<sup>nd</sup> Draft revision changes. Performing mainly MIC Additions, Kevin was able to expand ideas, making the sentence more dramatic (Example (1)); elaborate on previous sentence (Example (2)); modify (Examples (3) and (4)); and correct and clarify sentence (Example (5)). It is perceived that Kevin's MIC Additions are chiefly at the phrase level, and not entire sentences.

**Figure 4.17 2<sup>nd</sup> draft changes by test taker G1INT23**

Kevin G1INT23: M→H Pretest scores = 45 Posttest scores = 52 (353 words)	
<p><b>MIC Addition +</b></p> <p>(1) Added prepositional phrase to expand sentence to make it more dramatic</p> <p>(2) Added verb phrase to elaborate on the previous sentence</p> <p>(3) Added adjectival phrase to modify noun</p> <p>(4) Added verb phrase to modify</p> <p>(5) Added noun and verb to adjust sentence structure and clarify</p>	<p>Another reason why I have to disagree with this announcement is because this is what they have made for a living (1) <u>for may be decades or even for many of generations</u>. If not what will they do to support all of their expenses. What would their children will eat for their growth.</p> <p>So I think keeping them on the street would be the best choice to make. (2) <u>To keep them continue on their daily life</u>. If not it should have had an acceptable resolution to solve this problems.</p> <p>In my opinion we should make an extra space (3) <u>independent from the old one</u> on the footpaths (4) <u>to let the people walk comfortably</u> for them. Give them a freedom to sell whatever they want to sell. For the government (5) <u>thei duties is to</u> force them to pay for taxes. And make this as another beauty of Thailand as a giants of food producers in the world.</p>

Examples of Kevin's 3<sup>rd</sup> Draft are illustrated in Figure 4.18 below. In this draft, Kevin focuses much of his attention on surface level changes. Only one phrase level MIC Addition was performed (Example (15)). Meaning-preserving changes were numerous. Nearly half of the MPC Substitutions at the word level (Examples (2), (3), (6), (7)) did not make any difference to the essay, while the other half of the substitutions were carried out to amend the words into more academic ones (Examples (4), (11), (12), (13), (19)). A word was deleted to make the sentence more concise as seen in Example (16) and another word in Example (5) was deleted to sound more academic.

Remaining revisions were grammar-driven Surface changes, most of which were accurately performed, demonstrating Kevin's knowledge of the language. There were corrections made to part of speech (Example (1)), subject/verb agreement (Examples (8) and (17)), article (Example (10)), and punctuation (Examples (9), (14) and (15)).

**Figure 4.18 3<sup>rd</sup> draft changes by test taker G1INT23**

Kevin G1INT23 M→H Pretest scores = 45 Posttest scores = 52 (357 words)	
<p><b>SFC Part of Speech +</b> (1) Replaced pronoun</p> <p><b>MPC Substitution 0</b> (2), (3), (6), (7) Replaced with another that does not affect meaning</p> <p><b>MPC Substitution +</b> (4), (12), (13), (19) Replaced with more formal word (11) Replaced with more effective word</p> <p><b>SFC Agreement +</b> (8), (17) Replaced verb to agree with noun</p>	<p>(1) <del>Me</del> I myself am one of the people who has to (2) <del>rely</del> <u>depend</u> on them. As I usually come home late at night, I have to eat something to (3) <del>lesson</del> <u>decrease</u> my hunger before reaching home or even have my dinner on the street. (4) <del>So</del> <u>Therefore</u>, I think having them on the street will be (5) <del>really</del> good.</p> <p>Another reason why I have to disagree with this announcement is (6) <del>because</del> <u>that</u> this is what they have made for a living for may be decades or even for (7) <del>many</del> <u>several</u> of generations. What (8) <del>are</del> <u>is</u> their life going to be (9) ? Some of them may become (10) a thieves burglars drug sellers and finally end up in present.</p>

<p><b>SFC Punctuation +</b> (9), (14), (15) Added appropriate punctuation</p> <p><b>SFC Article +</b> (10) Removed singular article</p> <p><b>MIC Deletion +</b> (5) Removed word that may not be academic (16) Removed word as it can be implied</p> <p><b>MIC Addition +</b> (18) Inserted phrase to elaborate</p>	<p>Since last year the government of Thailand have announce their policy to be the kitchen of the (11) <del>earth</del> <u>world</u>. To be the biggest food producer of the world. Why not sticking with that goal? Why not follow the policy? (12) <del>Also</del> <u>In addition</u>, I think having plenty of choices to choose from everywhere in Thailand is a very attractive for all those foreigners.</p> <p>(13) <del>So</del> <u>Therefore</u>, I think keeping them on the street would be the best choice to make.</p> <p>In my opinion, we should make an extra space (14) <u>independent</u> from the old one on the footpaths to let the people walk comfortably (15) <u>for</u> them. Give them a freedom to sell whatever they want to (16) <del>sell</del>. For the government their duties (17) <del>is</del> <u>are</u> to force them to pay for taxes (18) <u>and having and eye on them</u>. (19) <del>And</del> <u>Moreover</u>, make this as another beauty of Thailand as a giants of food producers in the world.</p>
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Stephanie performed exhaustive revision on her 2<sup>nd</sup> and 3<sup>rd</sup> drafts, reflecting her determination to improve the quality of her essay and succeeded in doing so. Stephanie initially had 290 words on her first draft and through revisions on the 2<sup>nd</sup> and 3<sup>rd</sup> Drafts, was able to result in an essay of 478 words. Figure 4.19 below presents the changes she made on her 2<sup>nd</sup> Draft. In terms of content-related changes, many Microstructure Additions (altogether 9), were performed, substantiating her essay to a great degree.

MIC Additions included those at the word level such as a transition (Example (18)) for the purpose of linking ideas, a noun (Example (30)) to specify or an adjective (Example (26)) to modify amount. MIC Additions also incorporated structures at the clause or sentence level serving different purposes. Example (20) illustrates a sentence added to create a dramatic effect. Examples (24), (25) and (34) show sentences added to elaborate, expand ideas and explain further.

Figure 4.19 2<sup>nd</sup> draft changes by test taker G2INT56

Stephanie G2INT56 M→H Pretest scores = 45.3 Posttest scores = 56 (437 words)	
<p><b>MPC Distribution +</b> (1) Transformed one complex sentence in 1<sup>st</sup> Draft into two sentences in 2<sup>nd</sup> Draft to clarify</p> <p><b>MPC Consolidation +</b> (2) Combined ideas from 2 sentences in 1<sup>st</sup> Draft into one sentence in 2<sup>nd</sup> Draft for clarity</p> <p><b>MPC Substitution 0</b> (3) Replaced word with another similar meaning</p> <p><b>MPC Substitution +</b> (4) Replaced pronoun and adjective with article in preparation of adding adjective clause</p> <p><b>MPC Addition +</b> (5) Added relative clause to modify and specify (7) Added main clause to expand ideas</p> <p><b>SFC Format +</b> (5) Replaced small letter with capital letter (9) Replaced capital letter with small letter</p> <p><b>SFC Preposition -</b> (8) Incorrectly changed preposition</p> <p><b>MPC Deletion +</b> (10) Removed clause to correct sentence structure</p> <p><b>MPC Deletion 0</b> (11) Deleted transition</p>	<p><b>1<sup>st</sup> Draft/1<sup>st</sup> Paragraph:</b></p> <p>(1) In my opinion, I personally disagree with this new restriction <i>based on people's right and liberty to earn a living.</i> (2) As long as the job does not hurt anyone then it shouldn't be probitted. →</p> <p><b>2<sup>nd</sup> Draft/1<sup>st</sup> Paragraph:</b></p> <p>(1) In my (3) <del>opinion</del> <u>point of view</u>, I personally disagree with (4) <del>the this new</del> restriction (5) <u>which permanently banned street vendors from selling on public streets and footpaths of Bangkok.</u> (2) <del>Based on people's right and liberty,</del> (7) <u>each individual should be able to get any job and</u> (8) <del>to</del> <u>earn for a living,</u> (9) <del>A</del>as long as the job does not hurt anyone (10) <del>then it shouldn't be prohibited.</del></p> <p><b>1<sup>st</sup> Draft/2<sup>nd</sup> Paragraph:</b></p> <p>(11) As we know, (12) there are street vendors everywhere in Bangkok and our population has long been living with them. (13) It might seems to be quite messy sometimes but have we ever recognize how convenience they are. (14) Bangkok is such a big city and there're millions of lives keep moving each day. (15) I think street vendors are actually still necessary for Bangkok busy lives especially in rush hours. →</p> <p><b>2<sup>nd</sup> Draft/2<sup>nd</sup> Paragraph:</b></p> <p>(11) <del>As we know,</del> (14) Bangkok is such a big city (16) <del>and there're millions</del> (17) <del>of</del> <u>with</u> lives keep moving each day. (18) <u>Also</u> (12) there are street</p>



<p><b>Local Relocation 0</b> (12), (13), (14) Sentences are rearranged within paragraph</p> <p><b>Global Relocation +</b> (15) Sentence is move to concluding paragraph</p> <p><b>MIC Deletion +</b> (16) Removed clause to adjust sentence structure</p> <p><b>SFC Preposition +</b> (17) Deleted preposition to accommodate new structure</p> <p><b>MIC Addition+</b> (18) Added transition to link (20) Added sentence to dramatic effect</p> <p><b>MPC Substitution 0</b> (19) Replaced pronoun with another</p> <p><b>MPC Consolidation +</b> (21) Transformed ideas from 2 sentences in 1<sup>st</sup> Draft into one sentence in 2<sup>nd</sup> Draft making more concise</p> <p><b>SFC Punctuation +</b> (23) Added question mark</p> <p><b>MIC Addition+</b> (24), (25) Added sentence to elaborate and explain further (26) Added adjective (30) Added noun to specify (34) Added compound sentence to explain further and substantiate (36) Added sentence to</p>	<p>vendors everywhere in Bangkok and our population has long been living with them. (13) (19) <del>This might seem to be quite messy sometimes but have we ever recognize how convenience they are.</del> (15) <u>Street vendors are someone who provide food and goods to reply the need of our busy lives everyday. Without them, how could some people be able to grab something to eat on his way to work in the morning?</u></p> <p>(20) <u>Will our lives be this convenient?</u></p> <p><b>1<sup>st</sup> Draft/Part of 3<sup>rd</sup> paragraph:</b></p> <p>(21) <del>As we know, there're over six millions people living here in bangkok. With this population dense we can hardly find any free space around.</del> →</p> <p><b>2<sup>nd</sup> Draft:</b></p> <p>(21) <u>Bangkok has a very dense population so we can hardly find any free space around.</u> (22) <u>It might seem to be nice but how much room are there in Bangkok to rent for a shop (23) ? (24) Of course, the answer is NO and also if the demand of the land increase, the price will raise too.</u> (25) <u>Then higher living cost will effect everyone in our society.</u></p> <p>Population in Bangkok include (26) <u>some</u> people who are very rich, some millionares, but consider poor population are so much more. (27) <del>Some</del> <u>Not all</u> (28) <u>the</u> street vendors (29) <del>are the one who can't</del> can afford to own a shop. And this (30) <u>job</u> might be one of not many ways they can earn money from.</p> <p>(31) <del>With all reason above,</del> <u>In concultion,</u> (15) <i>I think street vendors are actually</i> (32) <del>still-necesary for Bangkok</del> (33) <del>busy lives especially in rush-hours.</del> <u>As lives</u></p>
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<p>elaborate previous idea, providing solution to problem</p> <p>(37) Added sentence to explain possible outcome</p> <p><b>MPC Substitution +</b> (27) , (29)</p> <p>Replaced with similar meaning to restructure sentence</p> <p>(31) Replaced transition word</p> <p>(33) Replaced phrase with another longer one to elaborate idea</p> <p><b>SFC Article +</b> (28) Added article</p> <p><b>MIC Deletion +</b> (32) Removed adverb</p> <p><b>MIC Deletion 0</b> (35) Removed sentence</p>	<p><u>here are so busy that we still need somewhere convenient to buy stuff from.</u> (34) <u>Supply of land are not enough for all vendors to own a shop and some of them might not be able to afford one anyway and this restriction might increase social problems.</u> (35) <del>I think Bangkok is not that ready to have street vendors prohibit yet.</del> (36) <u>If we want to fix this problem, we might do by using zone regulation on the streets and footpaths.</u> (37) <u>Then Bangkok will look neat and tidy and also provide more safety for people's lives.</u></p>
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As illustrated in Examples (36) and (37), sentences were added to elaborate and recommend a solution and finally to conclude as shown in Example (37). MIC Deletions did not make the content any less substantial. As shown in Example (32), an adverb was removed as deemed appropriate, as was the sentence in Example (35). Example (16) shows how a clause was deleted to accommodate the structure of the new sentence.

Although Stephanie's Meaning-preserving changes did not massively add on to the content of the overall essay, they effectively modified and clarified ideas. MPC Additions were at the clause level. Inserted clauses, seen in Examples (5) and (7), modified and expanded ideas. The removal of content illustrated in Example (10) served to correct the sentence structure. A MPC Distribution seen in Example (1) divided a complex sentence into two sentences, making the ideas clearer and more explicit. MPC Consolidations were performed by merging sentences to clarify the meaning (Example (2)) and to make the sentence more concise (Example (21)). MPC

Substitutions that were at the clause level were performed for two main purposes, to elaborate an idea, such as in Example (33) or to restructure the sentence like in Examples (4), (27), (29). Meanwhile, MPC Substitutions that were at the word level did not make any major difference.

Stephanie also made major changes to the structure of her essay. Local Relocations were made by rearranging sentences within the paragraph as shown in Examples (12) through (14) (Please refer back to Figure 4.19). These local relocations did not contribute to any major improvement. However, the Global relocations significantly improved the quality of the essay. One Global Relocation performed by moving a sentence to another paragraph is shown in Example (15). Other Global relocations involved shuffling entire paragraphs around. Figure 4.20 exemplifies how Stephanie's Global relocations were performed from Draft 1 to Draft 2.

**Figure 4.20 Global relocations made by test taker G2INT56**

1 <sup>st</sup> Draft	2 <sup>nd</sup> Draft
<u>Paragraph 1</u> Introduction	<u>Paragraph 1</u> Introduction
<u>Paragraph 2</u> Main idea A <ul style="list-style-type: none"> <li>• Insufficient shop area for all</li> </ul>	<u>Paragraph 2</u> Main idea C <ul style="list-style-type: none"> <li>• Vendors provide convenience</li> </ul>
<u>Paragraph 3</u> Main idea B <ul style="list-style-type: none"> <li>• Banning vendors lead to social problems</li> </ul>	<u>Paragraph 3</u> Main idea A <ul style="list-style-type: none"> <li>• Insufficient shop area for all</li> </ul>
<u>Paragraph 4</u> Main idea C <ul style="list-style-type: none"> <li>• Vendors provide convenience</li> </ul>	<u>Paragraph 4</u> Main idea B <ul style="list-style-type: none"> <li>• Banning vendors lead to social problems</li> </ul>
<u>Paragraph 5</u> Conclusion	<u>Paragraph 5</u> Conclusion

Main ideas were reorganized by using the cut and paste functions to relocate entire paragraphs. Entire paragraphs containing major supporting reasons were moved around. The result was a well-organized essay containing a logical sequence of main ideas.

Remaining changes were surface-related. Referring back to Figure 4.19, Examples (5) and (9) illustrate corrections made to format. Examples (8) and (17) concern corrections made to preposition. Punctuation and article corrections are illustrated in Examples (23) and (28) respectively.

On the 3<sup>rd</sup> Draft, Stephanie continued to work closely on content-related revisions. Figure 4.21 below illustrates Examples of changes made to her 3<sup>rd</sup> Draft.

**Figure 4.21 3<sup>rd</sup> draft changes by test taker G2INT56**

Stephanie G2INT56: M→H Pretest scores = 45.3 Posttest scores = 56 (478 words)	
<p><b>SFC Spelling +</b> (1) Corrected spelling</p> <p><b>SFC Punctuation +</b> (10) Added question mark</p> <p><b>MIC Addition +</b> (2) Added sentence to link paragraphs (5) Added clause to elaborate (7) Added noun to transform into noun phrase (11) Added transitional phrase to link ideas (13) Added sentence to elaborate on previous idea (14) Added adjective to modify (15) Added prepositional phrase to exemplify</p> <p><b>SMP Substitution +</b> (3) Replaced pronoun with noun, (4) Replaced word with another to specify (6) Replaced noun with similar word (9) Replaced noun clause with noun phrase to make more precise and concise (12) Replaced noun phrase with noun clause to specify</p> <p><b>MIC Deletion 0</b> (8) Removed word that can be implied</p>	<p>In my point of view, I (1) personally disagree with the restriction...</p> <p>(2) <u>Also there are some more reasons to support this idea.</u></p> <p>Without them, how could (3) <del>someone</del> <u>people</u> be able to grab (4) <del>something</del> <u>food</u> to eat when (5) <u>he's running late</u> on his way to (6) <del>work</del> <u>his office</u>? Will our lives still be this convenient?</p> <p>Now think about (7) <u>having</u> a clear space on public streets and footpaths, without street vendors selling food and other items. It might seem to be nice but how much room are there (8) <del>in Bangkok</del> to rent for a shop? Will there be enough room for (9) <del>everyone who want to sell goods</del> <u>all merchant</u> to rent one (10) ?</p> <p>(11) <u>What'll happen next is the higher living cost will effect</u> (12) <del>everyone in our society</del> <u>people who live here in Bangkok.</u></p> <p>(13) <u>Vendors who get in a situation of unemployment might occur to have financial problem and there's s possibility for them to commit crimes.</u> I think this restriction will probably raise (14) <u>many</u> social problems (15) <u>in our community, such as unemployment or the raises of criminal rate.</u></p> <p>If we want to fix this problem, we might (16) <u>be able to</u> do by using zone regulation on the streets and footpaths.</p>



More Microstructure Additions were performed. Words and a variety of phrase types were added for various purposes. For instance, Example (11) demonstrates a transitional phrase added to link ideas, while Examples (14) and (15) show how an adjective and a prepositional phrase were added to modify and exemplify. A clause was added to elaborate as in Example (5). Moreover, sentences were added to link paragraphs (Example (2)) and to elaborate on previous ideas (Example (13)).

Meaning-preserving changes again were more beneficial than not, as they served to make the content more precise and succinct. This is seen especially in Examples (4), (9) and (12). Surface changes made to the 3<sup>rd</sup> Draft were few. A misspelled word was corrected in Example (1) and a punctuation mark was added to a question (Seen in Example (10)). Both Stephanie and Kevin performed more content-related changes that made their essays substantial as when compared to those of Victor and Jamie. Clearly, Stephanie produced more content-related changes in the clause/sentence level to her drafts than did Kevin. Kevin, on the other hand, performed more Surface changes to his drafts than Stephanie. Of course, Kevin had access to the Grammar and Spell-check tools. It can also be observed that both Stephanie and Kevin were able to work with different types of phrases and clauses (e.g. noun phrases, prepositional phrases or adjectival clauses).

It has now become more apparent that the amount of content-related changes, especially at the sentence level has an effect of improving the quality of the essay, particularly if such changes add on to the substance of the essay and clarifies the essay. That Stephanie performed a majority of content-related changes on both her drafts, in addition to heavy organization changes, reflects this. While Victor also produced numerous content-related revisions, they did not aid in increasing the credence or weight of the content. Jamie, on the other hand, produced revisions that were predominantly superficial. Any content-related changes made were at the phrase or word level and were not sufficient contributions to the body of her essay.

Surface changes performed by Kevin, specifically seen in the word replacement examples, indicate that he was conscious of using academic words, whereas Jamie, who also produced word substitution changes, seemed to do so with the intention of avoiding using the same word twice. From overall observations made, Stephanie and Kevin outperformed their counterparts on account of the types, quality and quantity of revisions produced.



#### 4.2.2.4.c Low intermediate writers revision changes

The first two test takers from the low intermediate level are Rebecca and Preston. Rebecca was from Test Group 1 with available facilitative functions. Preston from Test Group 2 was not given access facilitative tools. Although neither test taker was able to move up one level, both increased their scores considerably during the posttest.

The revision changes Rebecca produced consisted of both content-related changes and grammar-related changes. See Figure 4.22 for Examples of Rebecca's revision changes on her 2<sup>nd</sup> Draft. Content-related changes that added on to the

**Figure 4.22 2<sup>nd</sup> draft changes by test taker G1LINT35**

Rebecca G1LINT35: L → L Pretest scores = 34 Posttest scores = 39 (269 words)	
<p><b>SFC Modality +</b> (1), (4) Replaced modal verb</p> <p><b>SFC Agreement +</b> (5) Corrected pronoun</p> <p><b>MIC Substitution+</b> (2) Replaced verb (6) Replaced verb phrase to specify and exemplify</p> <p><b>MIC Deletion 0</b> (3) Removed conjunction</p> <p><b>MIC Addition +</b> (7), (8), (9), (10), (11) Added sentences to illustrate and expand ideas (12) Added prepositional phrase to specify</p>	<p>They (1) <del>can</del>not sell in shopping centre because (2) <del>sublet</del> <u>rent</u> is very high.</p> <p>If foreigners come to travel in Thailand, (3) <del>and</del> they will see it; they (4) may <del>will tell</del> tell other foreigners that Thailand is very dirty.</p> <p>If you pass Bobae market, you will see the street vendors cross the road – like this road is (5) <del>mine</del> <u>theirs</u>. That is terrible.</p> <p>Because the street vendors (6) <del>do not care how the road is dirty.</del> <u>use many plastic and there are many waste too.</u> (7) <u>They do not know how to manage with this waste?</u> (8) <u>Did you know what they did?</u> (9) <u>They did not do anything!</u> (10) <u>On the other hand, some of them take it to the river!</u> (11) <u>It causes water pollution again.</u></p> <p>How to solve this problem, I think, Government should help them, for instance finding land like Jatujak (12) <u>for the street vendors selling food or item that they sell.</u></p>

body of the essay were produced towards the end of Rebecca's essay, where Microstructure Additions at the sentence level were made as seen in Examples (7), (8), (9), (10), (11) and (12). These MIC Additions helped in the illustration and expansion of ideas in that particular part of the essay. A MIC Substitution in the form of a prepositional phrase illustrated in Example (6), served to exemplify the substituted spot in the same area of the essay.

Other parts of the essay did not receive any major meaning or content changes. Example (6) shows a verb being replaced with another more appropriate one, while Example (3) shows a conjunction being removed. Modal verbs illustrated in Examples (1) and (4) were replaced with others that were thought to be more suitable. The remaining changes were grammar-driven. The pronoun 'mine' was replaced with 'their' to agree with the noun in Example (5). Rebecca's 3<sup>rd</sup> Draft contained only one revision, a surface change that involved removing the space in-between the modal, as seen in Figure 4.23 below.

**Figure 4.23 3<sup>rd</sup> draft changes by test taker GILINT35**

Rebecca G1LINT35: L → L Pretest scores = 34 Posttest scores = 39 (269 words)	
<b>SFC Format +</b> (1) Corrected format by removing space	(1) They <del>can not</del> <u>cannot</u> sell in shopping centre because rent is very high.

In sum, revision changes produced by Rebecca did not help increase the inadequate content of the essay.

In the posttest, Preston made quite a number of revision changes to both his drafts, considering he is an EFL writer with relatively poor performance and that he had no help from the grammar or spell checkers. Figure 4.24 below illustrates revision changes produced on Preston's 2<sup>nd</sup> Draft. Preston's revision changes in his 2<sup>nd</sup> Draft were Microstructure changes for the most part. The majority of these meaning or content-related changes were MIC Additions in either the word, phrase or clause level. However, many of these additions were grammar-driven and were not performed to develop ideas. At the word level, for instance, a relative pronoun was added in order to adjust the sentence structure (See Example (3)). Example (2)

illustrates how a clause was inserted to make the idea complete and the sentence accurate. Example (9) shows the addition of a dependent clause to link ideas.

**Figure 4.24 2<sup>nd</sup> draft changes by test taker G2LINT72**

Preston G2LINT72: L → L Pretest scores = 27.6 Posttest scores = 36 (409 words)	
<p><b>SFC Punctuation +</b> (1) Added a full-stop</p> <p><b>SFC Agreement +</b> (4) Corrected verb form</p> <p><b>MIC Addition +</b> (2) Added clause to complete sentence (3) Added relative pronoun to adjust sentence structure (5) Added prepositional phrase to specify (8) Added relative clause to modify noun (9) Added dependent clause to link ideas (10) Added relative clause to explain and expand</p> <p><b>MIC Deletion 0</b> (6) Removed verb phrase to make concise and straightforward</p> <p><b>MIC Permutation +</b> (7) Replaced verb phrase in previous sentence with subsequent rearranged sentence</p>	<p>Now, the government was built restriction to reduce this problem(1). (2) <u>I agree with</u> This restriction (3) <u>that</u> can manage substantial people to reduce danger from transportation and reduce traffic problem and pollution problem.</p> <p>If a lot of peoples use the road , A lot of car and other vanchicles will (4) <del>has</del> <u>have</u> a few ways thus this areas has a trafficjam. The trafficjam will make the danger to peoples when the vanchicles cash them or them recive a lot of carbondioxizide (5) <u>to there body</u>. This restrition (6) <del>can helps to</del> increase way in the public street and footpaths to support peoples thus the roads can support the vanchicles (7) <del>to reduce the traffic jam</del>. <u>The trafficjam can reduce.</u></p> <p>This rule is good but the vendors (8) <u>who has not areas</u>, has a ploblem (9) <u>because this rule do not</u> allow vendors to sell on the public street and footpaths. I think that , this rule should allow vendors to sell on the public street and footpaths in the days (10) <u>that the gouvourment allow them to use the public street and footpaths that make a little problem, or the gouvourment find the ares to support vendors.</u></p>

Other MIC Additions were not instrumental in developing content, such as those illustrated in Examples (5) and (8). A MIC Addition performed, as seen in Example (10), however did supply additional information. Overall, however, these content-related changes did not generate any more content to the body of the essay. Remaining changes were mainly Surface-related as exemplified in Examples (1), (4), and (6). Example (7) shows how an MIC Permutation helped make the sentence of origin concise. However, the replaced sentence, though short and effective, was erroneous.

Figure 4.25 illustrates revision changes made in Preston's 3<sup>rd</sup> Draft.

**Figure 4.25 3<sup>rd</sup> draft changes by test taker G2LINT72**

Preston G2LINT72: L → L Pretest scores = 27.6 Posttest scores = 36 (409 words)	
<p><b>SFC Agreement +</b> (1) Corrected verb to agree with subject</p>	<p>The one of causes of this problem (1) <del>are</del> <u>is</u> vendors on public street and footpaths.</p>
<p><b>MIC Addition +</b> (2) Added noun and conjunction to expand (4) Added If-clause for emphasis (5) Added noun</p>	<p>I agree with This restrition that can manage substantial people to reduce danger from transportation and reduce (2) <u>traffic and pollution problem</u>.</p> <p>→ In the past, People had a lot of dangers from transportation because of vendors that has a lot on public street and footpaths thus there can not support for peoples to use it. When peoples did not has the way, they (3) <u>will be</u> walked on the road thus this activity was one of the danger from transportation. (4) <u>If we have a restriction</u>, This problem will reduce because the public street and footpaths can support peoples to use it.</p>
<p><b>SFC Modality 0</b> (3) Added modal verb but did not remove the verb to be infinitive form</p>	<p>when peoples recive this polution to there body, There lung will receive a lot of carbondioxizide and keep in it that make people to (5) <u>headcahe in</u> the few times but in long time, The polution will has (6) <u>an</u></p>
<p><b>SFC Article +</b> (6) Added article</p>	<p></p>

<p><b>SFC Format +</b> (7) Added indentation at the start of all paragraphs</p>	<p>effect to brain lung and other part of body thus this restriction will helps to reduce a polution because it reduce a mount of people in area.</p> <p>(7) → This rule is good but the vendors who has not areas,has a ploblem...</p>
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In this draft, the changes made were predominantly superficial. The changes consisted of a few MIC Additions that were at the word and clause level and did not serve to add new information. This is seen in Examples (2), (4) and (5).

Remaining changes were grammar-related as illustrated in Examples (1), (3) and (6) or mechanics-related, in Examples (7). A subject/verb agreement correction was made (Example (1)). A modal verb was added for a clearer meaning as shown in Example (3), but because the infinitive form of the verb to be was not removed, the structure was syntactically inaccurate. Example (7) shows how indentations were added to the beginning of the paragraph, and this was performed on all the paragraphs in this draft.

The majority of revision changes produced by Preston were positive changes that either clarified or corrected ungrammatical areas. These revisions unquestionably improved his scores in the Posttest. Nevertheless, the changes produced did not suffice, as there remained an overwhelming amount of grammatical errors in his draft.

To summarize, Rebecca's revision changes were not instrumental in developing her content, which was, to a certain extent, insufficient. Meanwhile, Preston's did not help remove the many errors still existent in his essay. Nonetheless, it can be said that these two test takers have had the potential of performing better when given the opportunity to draft.

In contrast to Rebecca and Preston, the last two test takers from the low intermediate group, Beatrice and Patricia, moved up one level with their increased scores during the posttest. Beatrice, from Test Group 1 had access to facilitative functions, while Patricia from Test Group 2 did not. Both increased their scores considerably during the posttest.



In Beatrice's 2<sup>nd</sup> Draft, we can see that several revision changes were content-related (Refer to Figure 4.26 in the following page). These meaning-related changes involved Microstructure Permutations, as seen in Example (1), where Rebecca replaced the sentence marked in green in her 1<sup>st</sup> Draft with the underlined sentence, "vendor make the street dirty". She also replaced the word "reason" with the word "example" and linked this structure with the following clause, originally a fragment in the 1<sup>st</sup> Draft, by changing the capital letter in the conjunction "because" (Example (2)). This procedure required layers of changes carried out and may be considered quite a complex task.

Other major Microstructure changes are Microstructure Additions, two of which were at the clause or sentence level as seen in Examples (5) and (6). These two sentences helped to elaborate on the first main idea. The MIC Addition in Example (13) also shows how the idea is expanded reaching a conclusion. This was carried out also by adding an object "the rules" and the conjunction "and". Examples (7) and (8) illustrate how the original topic sentence in the 1<sup>st</sup> Draft is transformed from a detail into a general idea. This was carried out by inserting the underlined verb phrase (Example (7)) ending the new topic sentence then adding the transition "for example" and a subject to the following sentence. This procedure resulted in a supporting sentence that illustrated the previous sentence. Two Microstructure changes were at the word level and were for the purpose of creating cohesion in the essay. A transition was added, as illustrated in Example (11) and a conjunction was removed, as shown in Example (10). Thus, we can see that several attempts to substantiate content in this draft were successful, particularly in the 2<sup>nd</sup> paragraph and in the conclusion.

Some changes in the 2<sup>nd</sup> Draft concerned word choice. In Examples (3) and (9), conjunctions are replaced with transition words for formality. However, as seen in Example (12), a word was inappropriately replaced where the original was already suitable. Other changes in the 2<sup>nd</sup> Draft were cosmetic. Examples (2) and (4) illustrate this.

Figure 4.26 2<sup>nd</sup> draft changes by test taker G1LINT29

Beatrice G1LINT29 L → M Pretest scores = 39.3 Posttest scores = 47 (325 words)	
<p><b>MIC Permutation +</b> (1) Replaced sentence and linked with the subsequent sentence</p> <p><b>SFC Format+</b> (2) Changed capital letter into small letter to link with subsequent sentence</p> <p><b>MPC Substitution +</b> (3), (9) Replaced conjunction with transition word to make more formal</p> <p><b>SFC Spelling +</b> (4) Corrected spelling, transforming into one word</p> <p><b>MIC Addition +</b> (5), (6) Added sentences to exemplify &amp; elaborate</p> <p><b>MIC Addition +</b> (7) Inserted verb phrase to restructure new topic sentence (8) Added transition word and noun to transform original topic sentence into example (11) Added transition (13) Added object, conjunction and clause to expand idea and reach conclusion</p> <p><b>MIC Deletion +</b> (10) Removed conjunction</p> <p><b>MPC Substitution -</b> (12) Replaced word with inappropriate word</p>	<p>The first reason, the vendor makes many problems for the community. For first (1) <del>The first reason, If no have the</del> <u>example, vendor make <del>in the</del> street dirty <del>the street will be more clean the now</del></u> (2) <del>Because</del> because when the vendor sells the goods specific food and drink them cooking and wash the dish in the street that make the street dirty. (3) <del>And</del> <u>Moreover</u>, the vendor issue many waste such as the garbage and (4) <del>waste water</del> wastewater. (5) <u>Secondly, the vendor make a noise because they speak loudly always so the people are annoyed them.</u> (6) <u>And finally they get rid of garbage so it is emit the smell around the community.</u></p> <p>Second reason, the vendor (7) <u>make the street are narrow and not beautiful.</u> (8) <u>For example, they are hinder the footpath because they try to show many goods for make the costumer are interested.</u> (9) <del>So</del> <u>Therefore</u>, they make the footpath narrow that is the cause of accident. (10) <del>and</del> when we are hurried, we cannot to walk fast because the people and the vendor distract us and that are very annoying.</p> <p>Last reason, the vendor make the traffic jam and that the important problem in Bangkok. (11) <u>For example, sometime the costumer is the driver or passenger that they want to buy the goods so they stop the car in the street that make the traffic jam.</u></p> <p>Although this policy is work but It will not work if the people don't (12) <del>submit complied</del> (13) <u>the rules and everybody must complied the discipline so that help Bangkok are the best city in the world.</u></p>

In her 3<sup>rd</sup> Draft, Beatrice produced primarily Surface changes, as illustrated in Figure 4.27. Mechanics-related changes are displayed in Examples (1), (2), (7) and (9), while grammar related changes are portrayed in Example (3) and (6). One grammatical change shown in Example (5) did not improve the sentence. The remaining changes were concerned with word choice as exemplified in Examples (4) and (8).

**Figure 4.27 3<sup>rd</sup> draft changes by test taker G1LINT29**

Beatrice G1LINT29: L → M Pretest scores = 39.3 Posttest scores = 47 (326 words)	
<p><b>SFC Format +</b>            (1), (2), Changed small letter into Capital letter            (7) Changed capital letter into small letter            (9) Changed abbreviated word into full form</p> <p><b>SFC Number +</b>            (3) Added plural -s to noun</p> <p><b>MIC Substitution +</b>            (4) Replaced conjunction with transition word to signal final idea</p> <p><b>SFC Aspect -</b>            (5) Corrected aspect but tense is incorrect</p> <p><b>SFC Part of Speech +</b>            (6) Replaced verb with adjective</p> <p><b>MIC Substitution 0</b>            (8) Replaced phrase with another word</p>	<p>Although the vendor make ours lives comfortable but (1) <del>it</del> have many effect for our community. Therefore, I agree with the policy that the government ban permanently selling in the street because (2) <del>it</del> is the cause of many (3) problems in the future.</p> <p>(4) <del>And</del> <u>Finally</u>, they get rid of garbage so it is emit the smell around the community.</p> <p>For example, they are (5) <u>hindering</u> the footpath because they try to show many goods for make the costumers are interested.</p> <p>Although this policy is (6) <del>work</del> good but (7) <del>it</del> <u>it</u> will (8) <del>not work</del> <u>disappear</u> if the people (9) <del>don't do</del> <u>not</u> submit the rules and everybody must complied the discipline so that help Bangkok are the best city in the world.</p>

In sum, Beatrice's revision changes involved both meaning-related changes in both word and sentence level as well as surface-related changes. She concentrated

on content more during the 2<sup>nd</sup> Draft and worked mainly on cosmetic changes during the final draft.

Patricia was probably the heaviest editor of all test takers in the low intermediate level (See Figure 4.28 below). The content-related changes produced included both Meaning-preserving changes and Microstructure changes. She began with 241 words in her 1<sup>st</sup> Draft and finished with 429 words in her 2<sup>nd</sup> draft after intense revision.

Meaning-preserving changes consisted of a Substitution (Example (8)), 2 Consolidations (Examples (10) and (14)), a Permutation (Example (12)) and a Distribution (Example (2)). Examples (8) and (10) illustrate how segments were transformed into ones that (though ungrammatical) are more explicit than the original. Example (12), a MIC Permutation, also illustrates an organization change. The sentence was initially the final supporting reason, which was later moved up. This resulted in a more effective sequence of ideas.

**Figure 4.28 2<sup>nd</sup> draft changes by test taker G2LINT70**

Patricia G2LINT70: L → M Pretest scores = 39.4 Posttest scores = 50 (429 words)	
<p><b>MPC Distribution +</b> (1) Transformed one sentence into two by adding subject and verb</p>	(1) (2) <del>B</del> Bangkok is not only a normal capital but also the central of domestic and foreign 's trade <i>full of communication, culture, fashion, and travelling.</i> →
<p><b>SFC Format +</b> (2) Changed from small to capital letter</p>	(1) Bangkok is not only a normal capital but also the central of domestic and foreign 's trade. <u>There're</u> full of communication, culture, fashion, and travelling.
<p><b>MIC Addition+</b> (3) Added adverb for emphasis</p>	(3) <u>Certainly</u> , there are many foreigners come to our country. No matter business or travelling or shopping, the foreign view is important for us. So (4) <u>in my</u>
<p><b>MIC Addition+</b> (4) Added prepositional phrase for emphasis</p>	<u>opinion</u> , I agree with the announcement that street vendors selling food will be permanently banned from selling on public streets or footpaths with four reasons.
<p>(5) Added a phrase and a sentence</p>	The first reason is in the view of our country.
<p>(6) Added verb</p>	(5) <u>As bangkok has been changed. We want acception</u>
<p>(7) Added conjunction and</p>	



<p>verb to expand</p> <p>(9), (11), (13) (17) Inserted sentence to add new idea</p> <p>(15) Added phrase to expand idea</p> <p>(16) Added phrase to specify</p> <p>(18), (19), (20) Inserted phrases to provide more examples</p> <p><b>MPC Substitution +</b></p> <p>(8) Replaced sentence with longer and more elaborate one</p> <p><b>MPC Consolidation +</b></p> <p>(10), (14) Transformed two sentences into one long compound sentence.</p> <p><b>MPC Permutation + within Local Relocation</b></p> <p>(12) Replaced sentence, rearranged contents and switched locations with sentence (14)</p>	<p><u>from the international countries.</u> Selling on the public streets or footpaths make many people come to (6) <u>join shopping</u> (7) <u>and walking.</u> (8) <u>on the footpaths. it's not take a long time , the footpaths will full of people and make view of our country look unregulary.</u> (9) <u>And absolutely almost people have their car.</u> (10) <u>So when many people come to the same place in the same time ,it will bring the cause of traffic light and the next dangerous problem and difficult to solve ,air and sound pollution, will begin.</u> (11) <u>The viiliger in the community will get in trouble.</u> (8) <del>In a short period, the footpaths will have full of people and unregular</del></p> <p>(12) <u>Moreover, selling on the footpaths also make people who usually use the footpath can not use their way as usual.</u> (13) <u>And the last reason is the security of both the venders and the drivers.</u> (14) <u>Selling on the public streets may caused of the accident because in the crisis road the venders can get injury from the car cash and so does the driver.</u> (15) <u>As you can find in the news or television.</u></p> <p>(10) <del>The second reason is cause of traffic light. Where this is a market, there is the people.</del> (14) <del>The third reason is cause of accident of the car crash. The vendors who selling by walk on the streets are the obstacle for the drivers.</del> (12) <del>The fourth reason is selling on the footpaths make people who usually use footpath can not use their way as usual.</del></p> <p>Although selling on the footpath or on the public streets make poor vendors can survive without high lending, it cause of many problems that effect on of the vendors and most of people (16) <u>in these country.</u> (17) <u>So it's time for government to manage the problem in justice way which do not make both the</u></p>
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	<p>vender and the people be in trouble. (18) <u>Such as find the suitable place for the venders with low lending and it is not the obstacle for the travel.</u> (19) <u>Or provide the new job for the venders and give an education for the children who must sell on the public street.</u> (20) <u>If the vender , the government and people solve this problem together , our country will look beautiful , regular, comfortable to travel in everywhere and more safty.</u></p>
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More content-related changes in Patricia's 2<sup>nd</sup> Draft are Microstructure Additions at the word, phrase or sentence level that added meaning or more content to the essay. Examples (15), (16), (19), and (20) illustrate phrases that were added to expand, specify or exemplify. Examples (5), (9), (11), (13) and (17) show sentences that were inserted to add new ideas. The remaining MIC Additions were at the word level that served to either emphasize or expand, as seen in Examples (3), (4), (6), and (7). Only one Surface change was made in the 2<sup>nd</sup> Draft (Example (2)).

In Patricia's 3<sup>rd</sup> Draft, changes were not major as displayed in Figure 4.29.

**Figure 4.29 3<sup>rd</sup> draft changes by test taker G2LINT70**

Patricia G2LINT70: L → M Pretest scores = 39.4 Posttest scores = 50 (433 words)	
<p><b>MPC Addition 0</b> (1) Added prepositional phrase that can be inferred</p> <p><b>MIC Addition -</b> (2) Added adjective that conveys ambiguous meaning</p> <p><b>MIC Substitution 0</b> (3) Replaced preposition with conjunction</p> <p><b>SFC Agreement +</b> (4) Replaced plural pronoun with singular pronoun</p> <p><b>MIC Substitution +</b> (5) Replaced verb with modal for strong effect</p>	<p>The viilleger in the community will get in trouble (1) <u>from this problem.</u></p> <p>As you can find in the (2) <u>accidental</u> news (3) <del>on</del> <u>or</u> television</p> <p>Although selling on the footpath or the public streets make poor vendors can survive without high lending, it cause of many problems that effect on of the vendors and most of peoplein (4) <del>these</del> <u>this</u> country.</p> <p>Such as find the suitable place for the venders with low lending and it (5) <del>is</del> <u>must</u> not the obstacle for the travel.</p>

Any Microstructure changes were at the word or phrase level. A MIC Addition shown in Example (2) conveyed ambiguous meaning and was better left not added. A MIC Substitution shown in Example (5) was effective in strengthening the meaning. Another MIC Substitution did not make a major difference to the outcome, as did the procedure in Example (1) illustrating a Meaning-preserving Addition, one that can be implied.

In sum, Patricia was able to expand and elaborate immensely on the initial ideas she had in her first draft. She was more of a heavy content editor rather than a language editor. Of course, she was not equipped with facilitative tools that would enable her to work more effectively in improving the language. When comparing Patricia with Beatrice, we find that Patricia focused far more on content, while Beatrice was preoccupied, especially in her final draft, with surface changes.

Interestingly, when studying the outcome of revision changes among test takers in the low-intermediate level, most grammar and surface related changes produced were correct, yet many grammatical errors remain. It can be said then that test takers of this level paid special care to ensure that any changes made to grammar were truly what they knew to be syntactically accurate.

From the data analyzed qualitatively, it can be stated that the required drafts had an effect on test takers' writing process to a certain degree. This is evident from the extent of the revisions made on the 2<sup>nd</sup> Drafts and 3<sup>rd</sup> Drafts. This is not to say that test takers do not revise or edit when no drafts are required; however, with the required drafts, test takers are made to concentrate on the task of revising in addition to writing. Moreover, it can be seen through the number of Microstructure Changes (Refer to Appendix X Figure 1), which for the most part have a content-increasing effect that with required drafts test takers are inclined to write more. This is supported by the observation of the somewhat striking increase in the number of words among several writers (e.g. Stephanie, Patricia) from draft to draft. In terms of organizational changes, overall very few were produced. The majority of test takers who concentrated on organizational changes, interestingly belonged to Test Group 2, given no access to facilitative functions (Refer to Appendix X Figure 4). Concerning Surface Changes, test takers who performed more Formal Changes and Meaning-preserving changes on average were those who belonged to Test Group 2, even though test takers of Group 1 had advantage over those in Test Group 2, being

equipped with facilitative functions. In relation to the quality of revision changes, revisions made were generally effective in improving the overall text. In sum, the effect that required drafts had on test takers writing process was a positive one rather than negative. Naturally, it cannot be concluded that test takers' writing processes or revision changes do not exist without the requirement of drafts. However, with the structured requirement to produce drafts, test takers were able to channel their interest on revising aspects of the writing in a systematic manner.

### 4.3 Writing behaviors

Reported here are subjects' English writing behaviors, which are divided into writing behavior in non-test situations and writing behavior in test situations. This section answers the first part of Research Question 4, which asks what the computer writing behaviors of the participants are.

#### 4.3.1 Writing behavior on computers in non-test situations

Characteristics of test takers' English writing behavior on computers in non-test situations are derived from data in Questionnaire 1 Section 1 Part A. Before the analysis, a criterion<sup>2</sup> was set with high mean scores indicating frequent behavior and low mean scores indicating infrequent behavior.

From the data shown in Table 4.24 below, in non-test situations, subjects in general use the Ms Word to write in Thai very frequently (3.81) and somewhat frequently to write in English (3.44). However, the Ms Word is used very frequently to write in English especially for advanced and intermediate level writers (3.52 and 3.56 respectively) than for low intermediate level writers (3.23).

With relation to the use of facilitative functions in non-test situations, subjects on the whole use the spell-check and grammar-check functions frequently (3.17 and

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<sup>2</sup> 1.00-1.49 Very infrequent (never)  
 1.50-2.49 Somewhat infrequent (rarely)  
 2.50-3.49 Somewhat frequent (sometimes)  
 3.50-4.00 Very frequent (often)

**Table 4.24** Test takers' English writing behavior on computers in non-test situations according to writing proficiency level

Concern	Questionnaire Items	English writing behavior on computers in non-test situations				
		ADV $\bar{x}$	INT $\bar{x}$	LINT $\bar{x}$	Total $\bar{x}$ (SD)	Interpretation
MS Word Usage	1. I use the MS Word to write in Thai.	3.77	3.85	3.79	3.81 (.414)	Very frequent for all levels
	2. I use the MS Word to write in English.	3.52	3.56	3.23	3.44 (.634)	Frequent (Very frequent for ADV & INT)
Facilitative Function Usage	3. I edit misspelled words using the MS Word Spell-check as I write on the computer.	3.06	3.27	3.19	3.17 (.864)	Frequent for all levels
	4. I edit my grammar using the MS Word Grammar-check as I write on the computer.	2.69	2.96	2.75	2.80 (1.035)	Frequent for all levels
	5. I use the MS Word Translator or English-Thai dictionary when I write on the computer.	2.21	2.63	2.44	2.42 (.913)	Infrequent (Frequent for INT)
	6. I use the MS Word Thesaurus when I write on the computer.	1.83	2.02	1.98	1.94 (.764)	Infrequent for all levels
Awareness of Characteristics	7. When I compose, I am aware about the characteristics of a good essay.	3.17	3.31	2.83	3.10 (.717)	Frequent for all levels
	8. The entire time I write, I remind myself of what to do to produce a good essay.	2.88	3.04	2.90	2.94 (.750)	Frequent for all levels
	9. I write an <u>outline on paper</u> before I start writing the essay.	3.40	3.15	3.19	3.24 (.918)	Frequent for all levels
Drafting	10. I write an <u>outline onto the computer</u> before I start writing the essay.	1.77	1.83	1.83	1.81 (.784)	Infrequent for all levels
	11. I draft many times <u>on paper</u> before I type the essay onto the computer.	2.75	2.56	2.73	2.68 (.994)	Frequent for all levels
	12. I draft many times <u>directly onto the computer</u> .	1.88	1.88	1.96	1.90 (.888)	Infrequent for all levels

**Table 4.24 Test takers' English writing behavior on computers in non-test situations according to writing proficiency level (Continued)**

Concern	Questionnaire Items	English writing behavior on computers in non-test situations				
		ADV $\bar{x}$	INT $\bar{x}$	LINT $\bar{x}$	Total $\bar{x}$ (SD)	Interpret -ation
Revision: Meaning related	15. Before I submit my essay, I <b>check</b> the organization in detail.	3.13	3.21	2.90	3.08 (.758)	Frequent for all levels
	16. Before I submit my essay, I carefully <b>revise</b> the organization of my essay.	2.94	2.98	2.73	2.88 (.789)	Frequent for all levels
	13. Before I submit my essay, I <b>check</b> the development of content in detail for sufficient supporting details.	3.06	3.02	2.83	2.97 (.709)	Frequent for all levels
	14. Before I submit my essay, I <b>revise</b> topic development by adding supporting details to the content.	2.96	3.04	2.77	2.92 (.700)	Frequent for all levels
	17. Before I submit my essay, I <b>check</b> the language (e.g. word choice, varied sentence structure) in detail.	3.04	3.19	2.81	3.01 (.729)	Frequent for all levels
Revision: Surface related	18. Before I submit my essay, I <b>edit</b> my language (e.g. word choice, varied sentence structure) in detail.	3.04	3.08	2.90	3.10 (.743)	Frequent for all levels
	19. Before I submit my essay, I <b>check</b> the grammar (e.g. subject verb agreement, preposition use) in detail	3.02	3.06	2.77	2.95 (.751)	Frequent for all levels
	20. Before I submit my essay, I carefully <b>edit</b> the grammar (e.g. subject verb agreement, preposition use).	3.00	2.81	2.77	2.86 (.781)	Frequent for all levels
	21. Before I submit my essay, I <b>check</b> the mechanics (e.g. spelling and punctuation) in detail.	3.06	2.98	2.79	2.94 (.727)	Frequent for all levels
	22. Before I submit my essay, I <b>edit</b> mechanics (e.g. spelling, punctuation) in detail.	2.94	2.77	2.73	2.81 (.784)	Frequent for all levels

2.80 respectively), while they seldom make use of the MS Word English-Thai dictionary (2.42) and even less of the MS Word thesaurus (1.94).

When composing in non-test situations, subjects are somewhat frequently (3.10) aware of the characteristics of a good essay and remind themselves of what to do to produce an effective essay somewhat frequently (2.94).

As regards drafting behaviors in non-test situations, subjects on the whole create outlines somewhat frequently (3.24) on paper but somewhat infrequently



(1.81) outline onto the computer. Similarly, when they write their drafts, subjects overall do so somewhat frequently on paper (2.68) and seldom (1.90) directly onto the computer.

Concerning revision behavior in non-test situations, subjects for the most part somewhat frequently check (3.08) and revise (2.88) the organization of their essays. In addition, they somewhat frequently check (2.97) and revise (2.92) the content for sufficient supporting details. In terms of surface changes, subjects overall somewhat frequently check (3.01) and edit (3.10) their language usage in detail. Subjects overall check (2.95) and edit (2.86) their grammar somewhat frequently. In a similar trend, they check and edit mechanics somewhat frequently (2.94 and 2.81 respectively).

When comparing between writing proficiency levels, the only two marked differences of subjects' writing behavior are that (1) test takers of the intermediate level make use of the MSWord Dictionary to a higher frequency (2.63) than subjects of the advanced and the low-intermediate levels do (2.21 and 2.44 respectively) and (2) subjects of the advanced and intermediate levels use the MSWord to write in English to a markedly higher frequency (3.52 and 3.56 respectively) than that of the low-intermediate level (3.23).

#### **4.3.2 Writing behavior on computers in test situations**

Characteristics of test takers' English writing behaviors on computers in test situations was obtained from both questionnaire and verbal reports from the stimulated retrospective interviews.

##### **4.3.2.1 Results from questionnaires**

Test takers' English writing behaviors on computers in test situations was obtained from Questionnaire 1 Section 1 Part B and Questionnaire 2 Section 1 Part B, drawing particularly from their experience working on the pretest (CBWT) and posttest (T-CBWT). Section 1 Part B of Questionnaire 1 provides data from a Likert scale consisting of 12 items and data from a question and answer-choices part that provides nominal data revealing subjects' pre-writing, during writing and post-

writing behaviors. A criterion<sup>3</sup> was set to facilitate the interpretation of mean scores.

Table 4.25 in the following page presents data from the Likert scale from Questionnaire 1 Section 1 Part B juxtaposed with identical data from Questionnaire 2 Section 1 Part B to observe how writing behavior differed from pretest to posttest. Having reorganized Questionnaire items from the original order so that it could be easily interpreted, the results shown in Table 4.25 reveal an interesting trend.

The first trend concerns the disparity between test takers concerns towards certain aspects of writing and their efforts or attention devoted to such aspects. It can be seen that although participants claimed that they were concerned to a somewhat high degree about different aspects of their essay, they attended to those parts to a lower degree. Although this is not a marked trend, two particular instances of marked trends are as follows. Firstly regarding organization, participants from the advanced group, who were to some extent (2.79) concerned about the organization of their essay during the posttest (Items 5 and 6), worked to improve the organization to a markedly low degree (2.46). Secondly regarding sentence structure, during the pretest, participants of the intermediate group, being concerned about sentence structure (Items 11 and 12) to a somewhat high degree (2.75), worked to improve it to a very low degree (2.48).

Conversely, an opposite trend transpired when test takers put more effort on working on certain aspects of writing although showing little concern over the. To illustrate a marked instance regarding sentence structure (Items 11 and 12), participants of the low intermediate level found themselves working to improve their sentence structure during the posttest to a somewhat high degree (2.58) although being concerned about it to a low degree (2.38). It can be noted that during the posttest, the intermediate writers worked as hard on their sentence structure (2.54) as they showed concerned over it (2.54). However, although writers in general were concerned about their sentence structures to a low degree (2.47) on the posttest, they carried out revision to a markedly high degree (2.56). A similar marked instance

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<sup>3</sup> 1.00-1.49 A very low degree (24-1%)  
 1.50-2.49 A low degree (49-25%)  
 2.50-3.49 A somewhat high degree (74-50%)  
 3.50-4.00 A very high degree (100-75%)

**Table 4.25** Test takers' English writing behavior on computers in test situation according to writing proficiency level

Identical items found on both Questionnaires	English writing behavior on computers in test situations (CBWT and T-CBWT)							
	ADV $\bar{x}$		INT $\bar{x}$		LINT $\bar{x}$		Total $\bar{x}$	
	(N=48)		(N=48)		(N=48)		(N=144)	
	Pre test	Post test	Pre test	Post test	Pre test	Post test	Pre test	Post test
1. On this test, I was concerned about topic development.	3.23 (SH)	3.06 (SH)	3.21 (SH)	3.02 (SH)	3.00 (SH)	2.92 (SH)	3.15 (SH)	3.00 (SH)
2. On this test, I worked on/revised supporting ideas and details.	2.88 (SH)	2.85 (SH)	2.96 (SH)	2.81 (SH)	3.00 (SH)	2.71 (SH)	2.94 (SH)	2.79 (SH)
3. On this test, I was concerned about grammar.	3.00 (SH)	2.94 (SH)	2.88 (SH)	2.85 (SH)	2.67 (SH)	2.75 (SH)	2.85 (SH)	2.85 (SH)
4. On this test, I revised/worked on grammar.	2.81 (SH)	2.77 (SH)	2.83 (SH)	2.63 (SH)	2.65 (SH)	2.73 (SH)	2.76 (SH)	2.71 (SH)
5. On this test, I was concerned about organization.	3.06 (SH)	2.79 (SH)	3.17 (SH)	3.08 (SH)	2.92 (SH)	3.00 (SH)	3.05 (SH)	2.96 (SH)
6. On this test, I revised/ worked on the organization.	2.65 (SH)	2.46 (L)	2.81 (SH)	2.58 (SH)	2.85 (SH)	2.56 (SH)	2.77 (SH)	2.53 (SH)
7. On this test, I was concerned about word choice/vocabulary.	2.79 (SH)	2.65 (SH)	2.83 (SH)	2.75 (SH)	2.69 (SH)	2.67 (SH)	2.77 (SH)	2.69 (SH)
8. On this test, I worked on/revised word choice/vocabulary.	2.73 (SH)	2.60 (SH)	2.63 (SH)	2.60 (SH)	2.63 (SH)	2.69 (SH)	2.66 (SH)	2.63 (SH)
9. On this test, I was concerned about mechanics.	2.77 (SH)	2.92 (SH)	2.63 (SH)	3.08 (SH)	2.73 (SH)	2.98 (SH)	2.71 (SH)	2.99 (SH)
10. On this test, I revised/ worked on mechanics.	2.77 (SH)	2.56 (SH)	2.58 (SH)	2.67 (SH)	2.56 (SH)	2.46 (L)	2.53 (SH)	2.67 (SH)
11. On this test, I was concerned about sentence structure.	2.67 (SH)	2.50 (SH)	2.75 (SH)	2.54 (SH)	2.60 (SH)	2.38 (L)	2.67 (SH)	2.47 (L)
12. On this test, I revised/ worked on sentence structure.	2.60 (SH)	2.56 (SH)	2.48 (L)	2.54 (SH)	2.63 (SH)	2.58 (SH)	2.57 (SH)	2.56 (SH)

**Note:** ADV = Advanced level writers, INT = intermediate level writers, LINT = low intermediate level writers, SH = A somewhat high degree, L = A low degree

regarding mechanics (Items 9 and 10) transpired with participants of the low intermediate level test takers who showed a somewhat high degree (2.98) of concern over mechanics during the posttest, but worked on revising mechanics to a low degree (2.38).

Another interesting aspect is that the degree of concern over different aspects of the essay as well as the degree of effort put into improving those aspects shows an overall decreasing trend from pretest to posttest. Again, in general this trend is not a significant one; however, there are several marked instances. For example regarding organization, the advanced writers worked on their organization (Items 5 and 6) to a lower degree during the posttest (2.46) when compared to the pretest (2.65). The low intermediate writers were worried about their sentence structure markedly less during the posttest (2.38) than during the pretest (2.60).

Nevertheless, an opposite non-marked trend is evident especially for low intermediate writers who showed a slight increase of concern over organization on the posttest (3.00) than on the pretest (2.92). They also worked on their vocabulary slightly more on the posttest (2.69) than on the pretest (2.63). It is apparent they showed more concern and put more effort into grammar during the posttest (2.75, 2.73 respectively) than during the pretest (2.67, 2.65 respectively). Those who showed an opposite and marked trend, however, were the intermediate writers who worked on sentence structure more during the posttest (2.54) than during the pretest (2.48).

A non-marked yet noteworthy phenomenon concerns the aspect of mechanics where writers of all levels showed a slightly higher degree of concern on the posttest (advanced writers = 2.92, intermediate writers = 3.08, low intermediate writers = 2.98) than on the pretest (advanced writers = 2.77, intermediate writers = 2.63, low intermediate writers = 2.73). The intermediate writers even did more revising of mechanics during the posttest (2.67) than during the pretest (2.58), although this change is not significant.

In general, for all levels of writers, there was a non-significant decrease from pretest to posttest in almost all the items listed in the Table, save for their concern for grammar, which was the same level on both pretest (2.85) and posttest (2.85), and their concern over and revision on mechanics that also increased from pretest (2.71 and 2.53, respectively) to posttest (2.99 and 2.67, respectively).

Another interesting perspective from data gathered from Questionnaire 2 Section 1 Part B is the behavior of each test group compared. Table 4.26 below summarizes test takers' English writing behavior on computers in test situation according to test group. Although there were no significant differences in the following data shown in the table, each test group showed different trends.

**Table 4.26 Test takers' English writing behavior on computers in test situation according to test group**

Questionnaire items	English writing behavior on computers in the Posttest				
	G 1 $\bar{x}$ (N=36)	G 2 $\bar{x}$ (N=36)	G3 $\bar{x}$ (N=36)	G 4 $\bar{x}$ (N=36)	Total $\bar{x}$ (N=144)
1. On this test, I was concerned about content/topic development.	3.13 (SH)	3.25 (SH)	2.85 (SH)	2.69 (SH)	3.00 (SH)
2. On this test I revised/ worked on content/supporting ideas & details.	2.76 (SH)	3.08 (SH)	2.73 (SH)	2.58 (SH)	2.79 (SH)
3. On this test, I was concerned about organization.	3.00 (SH)	3.17 (SH)	2.88 (SH)	2.75 (SH)	2.96 (SH)
4. On this test, I revised/ worked on the organization.	2.33 (L)	2.75 (SH)	2.54 (SH)	2.58 (SH)	2.53 (SH)
5. On this test I was concerned about mechanics.	3.13 (SH)	2.83 (SH)	3.00 (SH)	2.97 (SH)	2.99 (SH)
6. On this test, I revised/ worked on mechanics.	2.78 (SH)	2.58 (SH)	2.73 (SH)	2.56 (SH)	2.67 (SH)
7. On this test I was concerned about grammar.	3.02 (SH)	2.78 (SH)	3.04 (SH)	2.56 (SH)	2.85 (SH)
8. On this test, I revised/ worked on grammar.	2.93 (SH)	2.56 (SH)	2.73 (SH)	2.56 (SH)	2.71 (SH)
9. On this test I was concerned about word choice/vocabulary.	2.72 (SH)	2.61 (SH)	2.88 (SH)	2.58 (SH)	2.69 (SH)
10. On this test I revised/ worked on word choice/vocabulary.	2.80 (SH)	2.28 (L)	2.96 (SH)	2.53 (SH)	2.63 (SH)
11. On this test, I was concerned about sentence structure.	2.61 (SH)	2.47 (L)	2.58 (SH)	2.22 (L)	2.47 (L)
12. On this test I revise/ worked on sentence structure.	2.65 (SH)	2.53 (SH)	2.62 (SH)	2.44 (L)	2.56 (SH)

**Note:** G1 = test group with facilitative functions & required drafts, G2 = test group with drafts, G3 = test groups with facilitative functions, G4 = control group, SH = A somewhat high degree, L = A low degree

It can be seen that Groups 1 and 2, both conditions with required drafts, showed interest in content and topic development (Items 1 and 2) to a slightly higher degree (3.13 and 3.25 respectively) than Groups 3 and 4 (2.85 and 2.69 respectively). This corresponds to findings in the previous section (4.1) whereby content scores are



significantly higher for the groups having required drafts especially with advanced level writers. However, it can be noted that Group 2 with required drafts seemed to work on content/supporting ideas and details to a slightly higher degree (3.08) than the rest of the groups (Group 1 = 2.76, Group 3 = 2.73, and Group 4 = 2.58).

A similar trend is also evident for the aspect of organization (Items 3 and 4) where Groups 1 and 2 show a slightly higher degree of concern towards organization (3.00 and 3.17 respectively) than Groups 3 and 4 (2.88 and 2.75 respectively). Oddly enough, however, is that the data show that Group 1 revised on organization the least (2.33), while Group 2 correspondingly revised the most (2.75).

With respect to mechanics (Items 5 and 6), test takers of Groups 1 and 3 show a slightly higher degree of concern (3.13 and 3.00 respectively) than the other two groups (Group 2 = 2.83 and Group 4 = 2.97). At the same time, they did revise on mechanics to a higher degree (2.78 and 2.73 respectively) than test takers of the other two groups (Group 2 = 2.58 and Group 4 = 2.56).

With reference to grammar (Items 7 and 8), Groups 1 and 3, who were equipped with facilitative functions, showed a slightly higher degree of concern (3.02 and 3.04 respectively) than Groups 2 and 4 (2.78 and 2.56 respectively), who were not given facilitative functions. Correspondingly, test takers of Groups 1 and 3 seemed to revise their grammar to a higher degree (2.93 and 2.73 respectively) than the other two groups (2.56).

In terms of vocabulary (Items 9 and 10), test takers of Groups 2 and 4, who were not given facilitative functions, demonstrated a lower degree of concern (2.61 and 2.58 respectively) than the other two groups. It is evident that test takers of Groups 2 and 4 also revised their vocabulary to a much lower degree (2.28 and 2.53 respectively) than those in Groups 1 and 3 (2.80 and 2.96 respectively) did.

As regards sentence structure (Items 11 and 12), it can be noted that Group 4, the control group, shows the lowest degree of concern towards sentence structure (2.22) than other groups whose degree of concern towards sentence structure is more than that of the average 2.47. Accordingly, Group 4 test takers who were not given facilitative features or required drafts revised their sentence structure the least (2.44).

Another part of Questionnaire 1 Section 1 Part B in answer-choices format brings our attention to subjects' prewriting and during writing behaviors. Table 4.27

reports pre-writing data in frequency and percentages according to subjects' proficiency level.

**Table 4.27 Pre-writing and during-writing behavior in test situation**

Pre-writing Behavior in Test Situation (Outlining)		LEVEL			Total (N=144)
		ADV (N=48)	INT (N=48)	LINT (N=48)	
1. Creates outline on paper	Count	24	17	10	51
	Expected Count	17.0	17.0	17.0	51.0
	% w/in outlining	47.1%	33.3%	19.6%	100.0%
	% within LEVEL	<b>50.0%</b>	<b>35.4%</b>	<b>20.8%</b>	35.4%
	% of Total	16.7%	11.8%	6.9%	35.4%
2. Creates a mental outline	Count	16	14	19	49
	Expected Count	16.3	16.3	16.3	49.0
	% w/in outlining	32.7%	28.6%	38.8%	100.0%
	% within LEVEL	<b>33.3%</b>	<b>29.2%</b>	<b>39.6%</b>	34.0%
	% of Total	11.1%	9.7%	13.2%	34.0%
3. Creates outline on computer	Count	1	3	4	8
	Expected Count	2.7	2.7	2.7	8.0
	% w/in outlining	12.5%	37.5%	50.0%	100.0%
	% within LEVEL	<b>2.1%</b>	<b>6.3%</b>	<b>8.3%</b>	5.6%
	% of Total	.7%	2.1%	2.8%	5.6%
4. Writes essay directly on computer with no outline	Count	7	12	11	30
	Expected Count	10.0	10.0	10.0	30.0
	% w/in outlining	23.3%	40.0%	36.7%	100.0%
	% within LEVEL	<b>14.6%</b>	<b>25.0%</b>	<b>22.9%</b>	20.8%
	% of Total	4.9%	8.3%	7.6%	20.8%
5. Writes essay on paper then types onto computer	Count	0	1	2	3
	Expected Count	1.0	1.0	1.0	3.0
	% w/in outlining	.0%	33.3%	66.7%	100.0%
	% within LEVEL	.0%	<b>2.1%</b>	<b>4.2%</b>	2.1%
	% of Total	.0%	.7%	1.4%	2.1%
6. Other	Count	0	1	2	3
	Expected Count	1.0	1.0	1.0	3.0
	% w/in outlining	.0%	33.3%	66.7%	100.0%
	% within LEVEL	.0%	<b>2.1%</b>	<b>4.2%</b>	2.1%
	% of Total	.0%	.7%	1.4%	2.1%
Total	Count	48	48	48	144
	Expected Count	48.0	48.0	48.0	144.0
	% w/in outlining	33.3%	33.3%	33.3%	100.0%
	% within LEVEL	100.0%	100.0%	100.0%	100.0%
	% of Total	33.3%	33.3%	33.3%	100.0%

**Note:** ADV = Advanced level writers, INT = intermediate level writers, LINT = low intermediate level writers

As regards creating outlines, an equal number of test takers within the advanced level, the majority of test takers created their outline on paper (50%). Many of them created mental outlines (33.3 %) while some of them did not have an outline and started typing their essay directly onto the computer (14.6%). Very few of the advanced writers typed their outline directly onto the computer (2.1%) and none of them wrote their essays on paper first before typing onto the computer.

Along similar lines, the majority of intermediate level test takers created their outline on paper (35.4%). Many of them created mental outlines (29.2%) while some of them did not have an outline and started typing their essay directly onto the computer (25%). Very few of the intermediate writers typed their outline directly onto the computer (6.3%) and one of them (2.1%) chose to write the entire essay on paper before typing it onto the computer. Two test takers (4.2%) reported having different prewriting procedures (See Item 4). One (2.1%) reported creating a mental outline and listing down those main ideas on the computer as well; while the other reported creating a mental outline as well as writing it down on both paper and onto the computer.

Low intermediate test takers demonstrated a different trend. Unlike their counterparts, the majority of test takers within this level preferred creating a mental outline (39.6%) to writing a visual outline on paper (20.8%) before writing on the computer. Many of them wrote their essays directly onto the computer without an outline (22.9%). A few of them wrote their outlines directly on to the computer (8.3%), while two of them (4.2%) opted to write their essay on paper before typing it onto the computer (See item 6). One participant (2.1%) reported creating a mental outline as well as writing the outline both onto paper and onto the computer.

Table 4.28 below presents test takers' post-writing behavior during the T-CBWT. Test takers of all levels follow a similar trend. The majority of test takers from all three levels compose and revise simultaneously then revise one more time before submitting the essay (Advanced test takers = 56.3%, Intermediate test takers = 56.3%, Low intermediate test takers = 62.5%).

Many test takers compose and revise simultaneously before submitting the essay (Advanced test takers = 31.3%, Intermediate test takers = 27.1%, Low intermediate test takers = 29.2%). A few finish composing the essay first before

revising only once at the end (Advanced test takers = 12.5%, Intermediate test takers = 16.7%, Low intermediate test takers = 8.3%).

**Table 4.28** Post-writing behavior in test situation

Post writing behavior in test situation (Editing)		LEVEL			Total (N=144)
		ADV (N=48)	INT (N=48)	LINT (N=48)	
Composes and revises simultaneously then revises once again at the end	Count	27	27	30	84
	Expected Count	28.0	28.0	28.0	84.0
	% within Editing	32.1%	32.1%	35.7%	100.0%
	% within LEVEL	<b>56.3%</b>	<b>56.3%</b>	<b>62.5%</b>	58.3%
	% of Total	18.8%	18.8%	20.8%	58.3%
Composes and revises simultaneously	Count	15	13	14	42
	Expected Count	14.0	14.0	14.0	42.0
	% within Editing	35.7%	31.0%	33.3%	100.0%
	% within LEVEL	<b>31.3%</b>	<b>27.1%</b>	<b>29.2%</b>	29.2%
	% of Total	10.4%	9.0%	9.7%	29.2%
Finishes composing essay first then revises once at the end	Count	6	8	4	18
	Expected Count	6.0	6.0	6.0	18.0
	% within Editing	33.3%	44.4%	22.2%	100.0%
	% within LEVEL	<b>12.5%</b>	<b>16.7%</b>	<b>8.3%</b>	12.5%
	% of Total	4.2%	5.6%	2.8%	12.5%
Total	Count	48	48	48	144
	Expected Count	48.0	48.0	48.0	144.0
	% within Editing	33.3%	33.3%	33.3%	100.0%
	% within LEVEL	100.0%	100.0%	100.0%	100.0%
	% of Total	33.3%	33.3%	33.3%	100.0%

**Note:** ADV = Advanced level writers, INT = intermediate level writers, LINT = low intermediate level writers

Regarding editing sequence, data displayed in Table 4.29 below reveals that the majority of test takers within all three levels edit randomly (Advanced test takers = 97.7%, Intermediate test takers = 89.6%, Low intermediate test takers = 91.7%) rather than sequentially (Advanced test takers = 8.3%, Intermediate test takers = 10.4%, Low intermediate test takers = 8.3%). That is, when editing, most writers do not follow a certain order. They tend to edit whatever error they identify in a random manner.

**Table 4.29** Editing sequence

Editing sequence		LEVEL			Total (N=144)
		ADV (N=48)	INT (N=48)	LINT (N=48)	
Random editing	Count	44	43	44	131
	Expected Count	43.7	43.7	43.7	131.0
	% within Editing Sequence	33.8%	32.3%	33.8%	100.0%
	% within LEVEL	<b>91.7%</b>	<b>89.6%</b>	<b>91.7%</b>	91.0%
	% of Total	30.6%	29.9%	30.6%	91.0%
Sequenced editing	Count	4	5	4	13
	Expected Count	4.3	4.3	4.3	13.0
	% within Editing Sequence	30.8%	38.5%	30.8%	100.0%
	% within LEVEL	<b>8.3%</b>	<b>10.4%</b>	<b>8.3%</b>	9.0%
	% of Total	2.8%	3.5%	2.8%	9.0%
Total	Count	48	48	48	144
	Expected Count	48.0	48.0	48.0	144.0
	% within Editing Sequence	33.3%	33.3%	33.3%	100.0%
	% within LEVEL	100.0%	100.0%	100.0%	100.0%

**Note:** ADV = Advanced level writers, INT = intermediate level writers, LINT = low intermediate level writers

To sum up, in **non-test situations**, data reveals that subjects are, in general, familiar to the MS Word as they use it a lot to type in Thai. They also use the MS Word to write in English although to a lower frequency. This is markedly the case for low intermediate level writers. The more popular MS Word functions among the participants of all levels seem to be the Spell-check and Grammar-check functions as opposed to the Translation and MS Word Thesaurus. However, intermediate level writers make use of the MS Word Dictionary to a markedly higher frequency than writers of the two other levels. Overall, participants write in English on paper more frequently than writing directly onto the computer. This occurrence happens both for when they make outlines and produce drafts.

Writers of all levels claim to be usually aware of the characteristics of a good essay quite frequently, although they may remind themselves of what to do to produce an effective essay to a lower frequency. When revising, participants sometimes check and revise content, organization and language use, although participants of the low-intermediate level do this less frequently. Subjects overall



check and edit their grammar less frequently, and they check and edit mechanics even to a lower frequency. For all types of revisions, participants from the low-intermediate level make changes to improve their essay the least frequently of all the levels.

In **test situations**, data reveals that participants showed a somewhat high concern towards different aspects of their writing, however, writers on the whole attend to such aspects to a lower degree. During the posttest, it can be seen that participants were as concerned with their grammar as they were during the pretest and that more attention was given to mechanics.

In relation to prewriting and during writing behavior, within the advanced and intermediate levels, the majority created their outline on paper, while many of them created mental outlines. Some typed their essay directly onto the computer without having an outline. Very few of the advanced and intermediate writers typed their outline directly onto the computer and none of them wrote their essays on paper first before typing onto the computer. A different trend was found with low intermediate test takers. Unlike their counterparts, the majority of test takers within this level preferred creating a mental outline to writing a visual outline on paper before writing on the computer. Many of them wrote their essays directly onto the computer without an outline. A few of them wrote their outlines directly on to the computer, while two of them transferred written essays from paper to the computer.

As regards post-writing behavior, test takers of all levels follow a similar trend. The majority of test takers from all three levels composes and revises simultaneously then revises one more time before submitting the essay. Many test takers compose and revise simultaneously before submitting the essay. A few finish composing the essay first before revising only once at the end.

Concerning editing sequence, data reveals that the majority of test takers within all three levels edit randomly rather than sequentially.

These writing behavioral trends in both test and non-test situations will be discussed further in the following chapter.

#### 4.3.2.2 Results from verbal reports

The primary purpose of the stimulated retrospective interviews was to examine test takers' writing behavior or processes and strategies during the test. As mentioned in [Chapter III Section 3.6.4](#), complete data from twenty-one subjects were available for analysis, namely six subjects from Test Group 1 (with facilitative functions and drafts), six subjects from Test Group 2 (with drafts), five subjects from Test Group 3 (with facilitative functions), and four subjects from the control group. Individual writers were renamed with an English name and were assigned codes. For instance, G1ADV12 means advanced writer #12 from Test Group 1; G2INT60 means intermediate writer #60 from Test Group 2; G4LINT144 means low intermediate writer #144 from the control group, and so on. (See [Appendix V](#) for Coded Interview Transcriptions).

Data in this section, as previously mentioned, is analyzed qualitatively and based on Mu's (2005) Taxonomy of ESL writing strategies (See Figure 2.2). To study the data in an orderly fashion, writing processes were divided into the planning stage, the writing stage and the proofreading stage. Based on the verbal reports, writing processes and strategies did not differ drastically between test takers from different writing proficiency levels. Overall, two sub-strategies were not evident from the data collected, namely Comparing (a Rhetorical strategy where the writer compares different rhetorical conventions) and the Assigning goals (a Social/affective strategy which writers use to dissolve the load of the task). Otherwise, all other writing strategies from Mu's Taxonomy emerged from the stimulated retrospective interviews as described in the subsequent sections. Moreover, other than the writing strategies found in Mu's Taxonomy, writers also edited their language, such as correcting syntactic errors or spelling mistakes. Thus, the researcher took the liberty to add the Editing sub-strategy as an additional Cognitive strategy.

##### 4.3.2.2.a The planning stage

For the interviewed test takers, the planning stage consisted of interpretation of the prompt, deciding whether to agree or disagree with the prompt and further brainstorming for content and organization.

#### 4.3.2.2 a1 Interpreting the prompt

Most of the writers from all three levels began the test task in a similar manner. They read and interpreted the prompt, trying to understand it, however, using up different amounts of time according to the individual. The advanced and intermediate writers did not necessarily use up less time than the low intermediate writers did in reading the prompt.

“If there was one hour to finish the task, I used around *10-20 minutes* to read and understand the prompt because, like I said, I’m not very good at English. I can interpret English very slowly.” (G4LINT144)

“I spent about *5 minutes* in comprehending the prompt.” (G3INT85)

“I spent about *10 minutes* on reading and interpreting the prompt.” (G3INT88)

“The time that was used to interpret the prompt and think about what to write took about, I mean if there was an hour to write, it took about *15 or 20 minutes*. The writing part didn’t take much time.” (G4ADV119)

One advanced writer (G3ADV84) often referred back to the prompt as her own unique (Social/affective - Resourcing) strategy.

“I used up a lot of time to read and understand the prompt because I read it first to understand it. Then when I started writing, I had to go back and look at the prompt again. I think I read it quite often in case there were some ideas that might have popped up in my head so I did read the prompt quite often.” (G3ADV84)

A few writers were glad to have keyword translations in the prompt (Social/affective - Resourcing and Rest/deferral sub-strategies). This helped them understand the prompt easier than without Thai translations.

“The difficult vocabulary translated into Thai in the prompt was helpful.” (G4LINT144)

"The first thing I thought was. Well, first I didn't know that there would be translations in the prompt. I was thinking what I would do if I got the prompt and I couldn't understand it. But the translations were there so I first thought about the reasons to answer the prompt, that if I agreed with the prompt what were the reasons I could use for support. *The translations given were a good thing. I mean some words I didn't know, so if not for the translations I wouldn't have been able to interpret the prompt.*" (G1ADV4)

#### 4.3.2.2 a2 Agreeing or disagreeing with prompt

After reading and understanding the prompt, writers were prompted to make a decision - whether to agree or disagree with the prompt. This involved a variety of strategies, including the Metacognitive (the Planning sub-strategy or finding focus), Cognitive strategies (the Generating ideas sub-strategy) and the Rhetorical strategy (Organization sub-strategy) as illustrated below.

Metacognitive strategy - Planning

"I first decided if I wanted to agree or disagree with the topic." (G2ADV45)

"I decided on which direction I wanted to take, very briefly, whether to agree or disagree with the topic." (G2ADV44)

Some writers made their decisions to agree or disagree with the prompt through mental outlines, especially those from Test Groups 3 and 4 who were not required to write drafts:

Rhetorical strategy- Organization

"I decided how I was going to agree or disagree with the topic and how I was going to organize my writing." (G3LINT105)

Metacognitive strategy - Planning

"After I read, I thought about whether I wanted to agree or disagree with the prompt and what I had to write. So I took some time to think about it for a little bit longer because I really couldn't think of anything." (G4INT121)

### Cognitive strategy – Generating ideas

“So briefly, I used up about 5 minutes on *thinking about* what to write, like in general. *Just brief thoughts* about it because sometimes I didn’t even use the initial ideas I had.” (G3ADV84)

Other writers listed their ideas down either on the computer or on paper, using visible mind maps to help them decide:

### Cognitive strategy – Generating ideas

“I looked at the topic to *see what possible reasons there were to support or refute* the given issue. *I listed the ideas in an outline.* I looked at whether I should support or refute. If I supported the idea in the prompt, I made sure to be able to provide more reasons than if I were to refute.” (G2INT60)

“In terms of planning, so suppose when I first get the prompt, *I tried to list down the points I could think of first, like the advantages and disadvantages.* Then whichever contained more supporting ideas, I’d choose that one.” (G3ADV84)

It appears that the Cognitive Strategy, specifically, the Generating ideas sub-strategy was used most often in aiding writers’ decision to agree or disagree with the prompt.

#### 4.3.2.2 a3 Brainstorming

After it was decided which direction the writer wanted to pursue, writers continued to brainstorm for ideas for the content. Again, this took up different amounts of time depending upon each individual.

“I took around *3-4 minutes* in planning because I already knew the structure and the prompt could be translated.” (G2LINT65)

“But the vocabulary I know is limited so *I thought and thought and thought until time started to run out* then I started to write.” (G2LINT69)



“Then (it took) about *10 minutes* to think about what I would write.”

(G3INT85)

“So briefly, I used up about *5 minutes* on thinking about what to write, like in general.”

(G3ADV84)

“The *first 15 minutes*, I thought about all the issues relevant to the topic.”

(G4ADV114)

The continuation of brainstorming for content after interpretation of the prompt required, for the most part, the same Cognitive sub-strategy, Generating ideas.

“I looked at the questions to see what they are asking and tried to think of many different reasons.”

(G3LINT103)

“After I understood the issues that the prompt wanted me to address, I started thinking about the points I wanted to write.”

(G1INT23)

While brainstorming was again accomplished through the same sub-strategy of Generating Ideas, it was done so in different ways. Some writers listed both main and supporting details while some listed only the main ideas. These lists or outlines were mostly written on paper and also typed onto the computer. While some outlines contained only the gist of the essays, others were detailed outlines.

Brief list:

“I noted *some of the major ideas* down.”

(G1ADV4)

“I just thought about the points, what the prompt was asking. I just thought about how many points the prompt was asking for. How many points I had to address and how I would answer. *I just thought about these major aspects* and then started writing.”

(G3INT88)

Detailed list:

“*I listed everything down* then found a way to link the ideas or checked if some ideas could be branched out into more ideas. *Then I found some examples to support each idea.*”

(G2INT60)

“...I thought about all the issues relevant to the topic. Then I did a kind of mind mapping, *listing all of the ideas down, as well as the details that supported each of the main ideas.*” (G4ADV114)

One intermediate writer played safe, listing more ideas than needed.

“At first, *I listed four or five reasons to support my topic just in case I needed them. Then I chose the three reasons and tried to look for supporting examples or details for each reason. Then when I thought the details were sufficient, I started typing.*” (G2INT56)

One low intermediate writer, G2LINT69 (below), being concerned with the vocabulary that would be needed for composing, had to take a different path, which involved the Cognitive strategy of Generating ideas and Retrieval of the vocabulary from a limited repertoire.

“*I first looked at the topic given and thought of the vocabulary that I could use. But the vocabulary I know is limited so I thought and thought and thought until time started to run out then I started to write.... I thought about the vocabulary that I would use.... I jot down few notes because it was time consuming to write an outline so I just keyed onto the computer.*” (G2LINT69)

Two examples of unmodified outlines are illustrated in Figure 4.30 below. Outline 1 produced by test taker G1INT23 was a brief outline made up of key words, while Outline 2 produced by writer G2LINT65, was structured in typical outline format.

Variations in outlines resulted from different time spent on brainstorming and how each individual managed the test task – whether they preferred to start with a clear and structured plan or to begin with only brief ideas that are to be expanded as they write. The more adventurous ones more often chose the latter approach leaving more time to write, while the more conservative writers chose the former approach allowing more time to concentrate on structuring sentences.

**Figure 4.30 Examples of outlines**

Outline 1 (G1INT23)

**Disagree**

- comfortable to have
- plenty of choices to choose
- support people
- prevent crimes

Outline 2 (G2LINT65)

**Outline**

1. **Introduction** : my experience in walking along the street and agree with the restriction.
2. **The first reason of the agreement** : make an accident
  - Obstruct the walking
  - Cause the traffic jam
3. **The second reason of the agreement** : goods is dirty
  - not good for health
4. **The third reason of the agreement** : the street is not clean
  - not good view
5. **conclusion**: don't support the selling food and all other items on the public street.

In contrast to some writers who did produce outlines during the planning stage, other writers claimed to not have planned and to have jumped straight into the writing stage without creating outlines. It is evident, however, that these writers did create mental outlines (Cognitive strategy - Generating ideas) before diving into the writing stage.

*"I was thinking about the reasons I could give... I didn't take any notes. I typed it (the essay) directly on the computer and if I didn't like any part I would just erase it."* (G1INT20)

*"For planning....Mostly I didn't plan. I just went straight ahead and wrote. I probably thought a little about what I was going to say but I didn't make a formal plan. Mostly I thought as I wrote."* (G4LINT144)

There were certainly other concerns besides content and vocabulary during the planning stage. Organization was another major concern, which had to do with Rhetorical strategies such as Formatting/Modeling (genre consideration) or Organization (beginning, developing, and ending the essay).

Rhetorical strategy – Formatting/Modeling:

“...It’s like when you write an essay, as we already know, *there must be an introduction, body and conclusion. I know this is the pattern I’m going to use, that I will be using.*” (G2LINT65)

“I gave importance to the structure or the rhetorical type of the essay.” (G2ADV45)

Rhetorical strategy – Organization:

“The first thing I thought about was *how I was going to write the introduction*, what I should include in the content.” (G1INT27)

“I thought of the reasons first then *I thought about how I was going to put the ideas together.*” (G2ADV45)

“*Then I organized the structure of the essay. I made notes. I listed my ideas down first then I tried to link each idea together. The ideas were listed in categories. It didn’t take long to do.*” (G2ADV44)

Thus, during the planning stage, as writers were brainstorming for ideas and planning by finding focus, the strategies employed were both Cognitive (Generating ideas, Retrieval and Rehearsal sub-strategies) and Metacognitive (Planning sub-strategy) strategies. When writers began to organize ideas into an overall structure, the specific sub-strategies involved were Organization, Formatting/Modeling sub-strategies (Rhetorical strategies). They also employed the Social affective strategies (Resourcing and Rest/deferral sub-strategies) when they referred to the translated words provided in the prompt.

Minor differences found were that some test takers made mental outlines while others preferred visual outlines. Of those who created visual outlines, either on paper or onto the computer, some noted only main ideas whereas others made detailed outlines including both main ideas and supporting examples. These differences in outlines did not appear to be distinctive to any particular writing proficiency level, however depended on how individual writers approached the writing test task. Low intermediate writers seemed to have difficulties with producing structured visual outlines as well as the writing process. Limited knowledge of vocabulary might have contributed to this impediment.

#### 4.3.2.2 b The writing stage

On average, the writing phase took around thirty to forty minutes for most test takers and longer for low intermediate writers.

“I used so much time on the first draft that I didn’t have enough time left to edit or proof read.” (G2LINT69)

“The writing itself took about *30 to 40 minutes.*” (G3INT85)

“Writing time took about *30 minutes or 40 minutes.*” (G4ADV114)

During this phase, test takers were involved with more idea generating and elaboration, organizing ideas, dealing with language barriers and referring to the given facilitative functions.

#### 4.3.2.2 b1 Getting ideas down

During the writing stage, all strategies came into play. In addition to Cognitive strategies, Rhetorical strategies and Metacognitive strategies, Communicative strategies and Social/affective strategies emerged during this process. More Cognitive strategies were employed, such as Elaboration, Rehearsing,



not to mention Generating ideas. Writers who did more idea generating were those who did not produce supporting examples or details during the planning stage.

#### Cognitive strategy – Generating ideas

*“I wrote and thought as I went on. If they were major ideas, I thought of them before writing but if they were details, I thought of them as I wrote.”*

(G1ADV4)

G3INT88 (below) intentionally brainstormed on just main ideas during the planning stage, leaving more time for writing.

*“But the supporting details I thought of as I was writing. So the time spent on planning was less and more time was spent on thinking while I composed.”*

(G3INT88)

The Elaboration sub-strategy was used tremendously during this phase as writers needed to expand on their ideas, being required to provide specific examples and details to support their reasons.

#### Cognitive strategy – Elaboration

*“The content I worked on took a long time too because I had to think about it as I wrote, because sometimes I wrote for a while then I realized that there wasn't not enough content up there (previously) so I had to go back and rewrite it.”*

(G2LINT65)

*“When I wrote, I looked at my outline and expanded the ideas and linked each idea together.”*

(G2INT60)

*“I just thought about how many points the prompt was asking for. How many points I had to address and how I would answer. I just thought about these major aspects and then started writing. Then I thought about where I should be adding more content.”* (G3INT88)

*“I expanded temporary clauses into sentences then added more content. So I was thinking as I wrote.”*

(G4ADV119)

The Retrieval sub-strategy was also heartily employed during the writing stage, as writers had to recall information from their memory, including knowledge of the world, and knowledge of the language (i.e. vocabulary, syntax, etc.)

#### Cognitive strategy – Retrieval

“I had to put effort into thinking of vocabulary. I just used whatever vocabulary I know.” (G1INT27)

“*I was probably thinking really fast at that time so the vocabulary I used are simple words. I did not use vocabulary that would be suitable for written language.*” (G4INT121)

“In general, *I thought about the grammar as I was writing each sentence. I thought about how I’d write the sentence.*” (G2ADV45)

Some writers employed the Rehearsing sub-strategy, trying out ideas or language while writing. The researcher feels the Rehearsing sub-strategy worked side by side with Generating ideas sub-strategy because as writers thought about what they wanted to express, they were experimenting with both the ideas that came to mind as well as the language.

#### Cognitive strategy – Rehearsing

“Mostly I didn’t plan. I just went straight ahead and wrote. I probably thought a little about what I was going to say but *I didn’t make a formal plan. Mostly I thought as I wrote.*” (G4LINT144)

“I typed it (the essay) directly into the computer. I thought in Thai first and translated into English. *Most of my thinking was about the language rather than the ideas.*” (G3LINT105)

“For sentence structure, *I did try to use extraordinary words that are not usually seen or sentence structures that are not common in order to create variety but they may have been a bit confusing.*” (G3INT88)

#### 4.3.2.2 b2 Organizing content

Other than the various Cognitive strategies used, Rhetorical strategies were employed since writers were also concerned with the organization of their essays as they wrote their first draft. Organization (a Rhetorical sub-strategy) included how the writers would sequence their ideas, how they would physically divide the content into separate paragraphs or how they would link each part using transition markers. The researcher feels that the Organization sub-strategy is used in tandem with the Planning sub-strategy (one of the Metacognitive strategies) since writers are still figuring out how their ideas will be arranged.

##### Organization and Planning sub-strategies

“Mostly I would draft on the computer because if anything is wrong I can erase and fix it right away on the computer. Then *I would organize my thoughts to see what I should write down first or next, organizing the salient points.* The reason that I choose to put down first would mostly be the reason that everyone would see as the most important problem. I mean I chose the issue that would be the first thing that would be on everyone’s mind. This would be the first reason. Then the other reasons would be less and less salient.” (G1LINT1)

“When I wrote, I looked at my outline and expanded the ideas and *linked each idea together.*” (G2INT60)

“*Maybe I can divide the body into separate paragraphs, into separate issues, because if it is one long paragraph perhaps we cannot decipher the different issues. And if separate issues are in one long paragraph like this, with all the sentences piled up together, it’ll lack smoothness and won’t be eloquent enough.*”

(G4ADV119)

#### 4.3.2.2 b3 Coping with writing difficulties

To cope with difficulties that arose due to language barriers, the Avoidance and Reduction sub-strategies appeared as Communicative strategies utilized while

writing the first draft. Writers tried to either avoid some difficulties in communicating (Avoidance) or give up altogether some communicative problems (Reduction) they had due to language deficiency.

#### Communicative strategies – Avoidance

“I don’t think I have a problem with vocabulary because *I think, I have a way to avoid. Sometimes instead of using some words that I think are too difficult, I’d try to use simple ones* because I have this belief that we don’t have to use elaborate words to write our essays.” (G2LINT65)

#### Communicative strategies - Reduction

“Mostly, I tried to use the vocabulary that I was sure of but *if I didn’t know the word in English, I tried to adjust my ideas to something else that is closer to what I could say in English.*” (G2INT60)

Another Communicative strategy evident was anticipating reader’s response or what Mu (2005) calls the Sense of Readers sub-strategy. This strategy is akin to when writers try to put themselves in the readers’ shoes.

#### Communicative strategies – Sense of readers

“But some words I thought of were in English and *I stopped to think whether the word was the right one to use, whether it communicated what I was trying to say.*” (G3LINT103)

“I focused on the content. *I made sure that it was understood by the reader although there may have been some mistakes.*” (G1INT23)

#### 4.3.2.2 b4 Using facilitative functions

When writers had difficulties during the writing phase, in addition to the Avoidance and Reduction sub-strategies, the Social/affective strategies, such as Getting feedback and Resourcing, were used, particularly for Test Groups 1 and 3 who were equipped with facilitative functions. Searching for vocabulary, writers turned to either the translation function (dictionary) or the thesaurus within the MS

Word, employing the Resourcing sub-strategy. However, few writers relied on Resourcing.

#### Social/affective strategies – Resourcing sub-strategy

“Like for some of the words, I wasn’t so sure about the meaning because some words can have many meanings so I checked in the dictionary first to see if I could really use it. What I am not really accurate in is the part of speech, like adverbs or adjectives. *If I’m not confident, I looked it up in the dictionary to check the part of speech.*” (G3INT88)

Because writer G3INT88 (above) knew specifically for what purpose he wanted to use the dictionary, it could be said that he benefited from this strategy. It is questionable whether other writers (below) who appeared to have been exploring or rehearsing with the language as they looked up or looked for words from these two sources actually benefited from this strategy.

#### Resourcing (social/affective strategy) and Rehearsing (cognitive strategy)

“The vocabulary I used I got from the dictionary and thesaurus, but I wasn’t so sure.” (G1INT20)

“I used the thesaurus sometimes, but because when I used it, *the suggested words didn’t seem like the right words either. I didn’t know which word to use.*” (G3INT85)

“The dictionary and thesaurus helped to some extent. It helped with spelling too. Mostly I use the words that I already know. The thesaurus helped to some extent. *Sometimes I looked up a word (from the dictionary), but ended up using the words from the thesaurus instead.*” (G3ADV84)

It appears that the majority of writers interviewed did not refer to the translation function nor the thesaurus all that much. Some writers did not even take advantage of these two facilitative functions, hence, relying more on the Retrieval sub-strategy to draw out words from their own memory.



More of the Retrieval sub-strategy than the Resourcing sub-strategy

“I used the words that I knew. I didn’t really use the dictionary or the thesaurus. I’m not quite used to using them.” (G3LINT105)

“I used very little of the dictionary and thesaurus, maybe just one or two words. I mostly just used the words I already know.”

(G3INT85)

“And I don’t look up synonyms on the Thesaurus either, nor do I use the dictionary. I wouldn’t know when to use them.” (G1INT18)

One writer (G2INT56) from Test Group 2, who was not provided with such functions, was found to have used the Getting Feedback sub-strategy (a Communicative strategy) when searching for the vocabulary needed.

“The vocabulary I used was from the words that I already know and *sometimes I asked my friend.*” (G2INT56)

Another two helping functions available to Test Groups 1 and 3 were the MS Word Spell-check and Grammar-check functions. Because these two functions are programmed to activate automatically when an error in spelling or grammar occurs, writers used the Resourcing sub-strategy as more of a reaction to the appearance of red underlines for spelling mistakes and green underlines for grammatical errors. Most writers did not hesitate to correct any spelling mistakes as soon as the word was underlined.

“If a green or red line appeared, I was almost sure there was something wrong, so I clicked right on the mouse to see. Sometimes it was spelling. But if the green line appeared, it was sometimes the comma or colon that was the problem. *I corrected these as soon as they showed up.*” (G3LINT103)

“If red lines appeared, I corrected them right away.”

(G1INT20)

“I would correct it (the mistake) immediately when the red or green underlines appear.” (G3ADV84)

However, for grammatical errors, writers do not necessarily work on fixing the error as soon as the green lines appear. Writer G3LINT105 chose to keep the problem for later solving.

“When the green lines appeared, I didn’t look into them immediately. But came back to look at them later.” (G3LINT105)

Writer G1LINT35 finishes constructing the sentence before addressing the error, hoping the green line would disappear once the entire sentence is written.

“When the green underlines appear, I do check grammar. Sometimes I may have forgotten to add the -s or -ed ending or something like that and it happens to me often. *It’s not all the time that I correct it as soon as the underline appears. I like to finish the sentence first and then see if the green underline is still there.*” (G1LINT35)

Writer G1INT23 fixes minor mistakes or typos straight away and saves major errors for later fixing.

“If the green lines appeared, first I tried to see what the problem was because sometimes it was simply a matter of spacing, only something minor, which I corrected right away. If it wasn’t something minor, I checked to see if I could fix it. If I couldn’t, I kept it for later” (G1INT23)

Since the underlined parts signified errors in spelling or grammar, writers were found to be using the Metacognitive strategy to monitor – check and identify problems with their writing. Especially for spelling mistakes, the Retrieval sub-strategy (a Cognitive strategy) was employed concurrently with the Monitor sub-strategy to draw out the writers’ knowledge of their vocabulary. Different colors signify the different strategies employed.

### Monitoring, Retrieval, and Resourcing sub-strategies

“When the red or green underlines show up my first reaction would be to recheck with the spelling-checker. I may have spelled it incorrectly or maybe I thought I checked it and it was correct in the first place... But mostly I do check when the spell-check has appeared and check their suggestions.”

(G1LINT35)

“But if it were the red lines, I corrected them (spelling mistakes) immediately. I checked to see if I was able to correct them on my own first, if not, I clicked to see what they suggested and followed it. I chose the one that is right.”

(G3LINT105)

“I corrected the red and green underlined parts immediately. I looked at the choices they gave. Like if there was a misspelled word, I checked to see if there were correct words to choose from. Or if it was a proper noun, I had to be confident and ignored the red underline. If I really didn't know why mine was wrong, I followed the program's suggestion.”

(G3INT85)

“If the red lines appeared, I first looked at what was wrong with them. Sometimes I misspelled them myself. Sometimes I used words that I'd seen before but I wasn't sure if they were wrong or not so I had to use the spell check. I followed the program's suggestion.”

(G1ADV4)

For grammatical errors, apart from the Monitoring sub-strategy, the Rehearsing sub-strategy (a Cognitive strategy) was utilized to try out other words or structures - that would leave the underlined areas error-free. The following test takers used the Monitoring, Retrieval, Resourcing and Rehearsing sub-strategies while handling grammatical errors.

“If I didn't know how to correct it, I kept on changing the sentence structure until the green or red line no longer appeared.”

(G3LINT103)

“I tried to correct it (the underlined parts) until the red or green lines disappeared. I tried to check if the suggested words given by the program

were appropriate or not. I used their suggestions only when I thought they were right.” (G1INT27)

“The first thing I did when the green lines appear was to think about what happened then I corrected them according to what the program suggested...I’m not sure why I didn’t correct this part but it may be because I thought that it was already correct. It’s like I didn’t know how to correct it anymore so I just let it go.” (G1INT20)

“After I finished a sentence, I checked it once. If the red and green lines appeared, I corrected the mistakes right away. I dragged the whole sentence and clicked right on the mouse to see what had to be corrected first. If I agreed with the program’s suggestion, I clicked the mouse to correct it. If I didn’t agree with the program’s suggestion, I thought about it again to see how it was incorrect. Then I corrected it. Rephrased it. If it were still green, if I looked at it two or three times and saw that nothing more was wrong with it, I just left it like that.” (G3INT88)

Test takers did acknowledge that the options provided by the Grammar-check were not always correct. Writers for the most part did use their judgment before opting for the Grammar-check advice. When writers had no other choice, their final resort would be to follow to the programs suggestion or chose one of the program’s given alternatives that is closest to what they think may be correct. This also required the writers’ use of the Retrieval sub-strategy, drawing out their prior knowledge of grammar, whether it was accurate or not. The following excerpts illustrate the use of the Retrieval sub-strategy.

“When the green or red lines appeared, I checked if it had to be changed. *But I also checked whether the options given were right or not. If I was confident that my version was right, I did not follow the spelling or grammar checking advice.* Sometimes the Microsoft is not accurate. Sometimes, when I typed once, the tense needed an -s but it advised me not to. When the green lines appeared, I

corrected them immediately. I clicked to see what the problem was and followed the grammar check advice.” (G1INT19)

“It (Grammar-checker) sometimes helps correct grammar. *Mostly I would just correct it according to the program’s suggestion. Except when I am really confident I won’t follow the program’s suggestion.*” (G3ADV84)

“When the green lines appeared, it’s like, I’m not good at grammar so when the green lines appeared I did use their suggestion. *If there were choices given, I would choose the one which had the closest meaning to what I wanted to communicate, like sometimes the choices were plural or singular.*”

(G1ADV4)

The Grammar Check function may not have been useful to writers particularly if the writer does not know what error has been made or if the writer does not understand the suggestion provided by the function as was the case with test takers G1LINT35 and G3LINT103 (below). At times the MSWord would identify the grammatical problem without an accompanying alternative (i.e. “Passive voice (consider revising)”) in which case writers are left to their own discretion on how to or not to change or fix the error.

“The first thing I think about when the green underline appears is the tense. Is the tense incorrect? Did I forget to add something to the tense?

Something like that. If the green underline appears, sometimes I check the program’s suggestion but *sometimes when I look at it, there’s no suggestion given.*

*It may just say that it’s wrong without any alternative given.*”

(G1LINT35)

Upon seeing that no alternative was supplied, writer G1LINT (above) may have not have understood the suggestion provided by the MSWord. This misunderstanding coupled with a limited knowledge of syntax left this writer unable to correct the error. For writer G3LINT103 (below), it appeared that the word “fragment” was an alien term, thus this writer did not understand what the error was, hence unable to fix the problem.



“Sometimes when I clicked right on the mouse, it indicated a “fragment”, which means that there is no such thing in the database or something like that. I’m not so sure.” (G3LINT103)

The last helping tool, and the least used, was the Self-reflective Reminder Questions, given to Test Groups 1 and 3. Because their priority seemed to be concentrated on content and how to express their ideas, a majority of writers did not utilize these reminder questions as they wrote. Writer G3INT88 illustrates this point.

“The guiding questions (SRQ). When I wrote, I didn’t pay attention to these questions at all. I mean, I just did according to what I normally do when I write, which is think, read and think. These types of questions (SRQ) were not in my head. *Mostly I just thought about the points, what the prompt was asking. I just thought about how many points the prompt was asking for. How many points I had to address and how I would answer. I just thought about these major aspects and then started writing.* Then I thought about where I should be adding more content.” (G3INT88)

Most writers skimmed through the Self-reflective Reminder Questions after they finished composing. Although doing so allowed writers to evaluate their essays at the end of their compositions, the remaining time did not allow them to improve their drafts, as was the case with the following writers:

“*I used the SRQ at the end of the writing.* I couldn’t think of anymore examples. I don’t think I know how to use linking words correctly. I feel I have a problem with my writing skills.” (G3LINT105)

“*I had a look at it (SRQ) in the end after writing.* It’s a good reminder. When I write, I don’t usually ask myself these questions. *I focus more on the ideas and how I should write the essay.*” (G3INT85)

“*I read the Self-reflective Questions after I finished writing.* I checked “no” on this item probably because I didn’t think I chose the right words. It may be

because I chose, like, easy words, may be they were not appropriate. After ticking “no” *I don’t think I went back to change the words I used.*”

(G1INT20)

Yet, it is questionable whether those who did read the Self-reflective Reminder Questions prior to writing actually benefited from them. Although writers G1LINT35 and G1ADV4 (below) did read the questions before writing, they did so very briefly and did not mention making the SRQs part of their reference during the proofreading stage.

“I used the self-reflective questions a bit. I didn’t use it while I was writing but before. I mean, *before writing I read through it briefly.* I skimmed through it then wrote my essay.”

(G1LINT35)

“Like, *before I started writing, I read it (SRQ) briefly to see what was on it but I didn’t read all of the items. Then I started to read it in detail again after I finished writing.* It’s good. It’s like it helps to evaluate our writing. I think it’s useful during writing tests after we’ve finished writing to see how much we have improved.”

(G1ADV4)

One of the main reasons why writers did not use the SRQs was that they already knew the items on the list.

“I didn’t really make use of the Self-reflective Questions maybe because they were features that I already knew.”

(G1INT20)

“I do have some questions or reminders already in my head that are similar to the ones in the self-reflective questions checklist, but not all of the ones that are there. I would remind myself of these things before I write.”

(G3ADV84)

Some comments given on the SRQs worth noting are:

“The SRQ questions are helpful and they are useful reminders but I *would probably not have enough time to rewrite according to the suggestions.*”

(G3LINT103)

“I feel that the self-reflective questions in general are good. If we look at them before or after we write, it will be useful but *if we use it while we write, it's like limiting our work just to cater to these questions. Each person has a different way of writing or different steps they follow.* It should only be used for re-checking to see if there are any points according to this list that needs fixing.”

(G3INT88)

“Some items on the checklist I have not seen before. Like, *I didn't know that when we write we could use self-reflective questions to check ourselves like this. Usually I just write an essay straight away without checking.*”

(G1ADV4)

Although some writers maintain that the questions found in the Self-reflective Reminder checklist are helpful, it can be concluded that the Self-reflective Reminder Questions, in general, were not instrumental in the writing process for the interviewed writers.

#### 4.3.2.2. b5 Using first language

Being foreign language learners, the majority of writers thought in both Thai and English. The degree to which English was used cognitively while writing was, however, not limited to only language proficiency but also to the writers' prior experience and exposure to English.

“When I typed, I thought in both Thai and English.”

(G2INT56)

“I thought in English when I wrote, but when I was brainstorming, I thought in Thai.”

(G2INT60)

“I thought in both Thai and English when I planned...*When I write, I think in English because I've learnt it for many years and can think in English, but sometimes I cannot think of some words, so I can only think of the word in Thai, which I'll try to translate later.*”

(G1INT23)

“If I can think in English, it would be really great because I’d be able to think, listen and speak in English automatically without translating. *Like right now what I’m doing is still thinking in Thai and translating into English.*”

(G4ADV119)

“I thought in English when I wrote...Mostly, I tried not to translate. I tried to think in English as much as I could.”

(G2ADV44)

The following low intermediate writers, in general, were relying heavily on translation from Thai to English, some even word for word.

“...it wasn’t difficult to think of the reasons in Thai and to transfer the Thai thoughts onto the body of the essay.”

(G2LINT65)

“I thought in Thai most of the time and translated. But some words I thought of were in English”

(G3LINT103)

“I typed it directly into the computer. I thought in Thai first and translated into English.”

(G3LINT105)

“Like, mostly when I write I have a bad habit of translating from Thai word for word. I don’t write in English like I should, the kind where I have to reverse the word order when I translate. I just go ahead and translate it from Thai. I write word for word.”

(G4LINT144)

Thus, all the writers at some point did make use of their first language when writing, especially when they could not immediately think of the word in English. When translating ideas into the second language, the strategy employed is the Rhetorical strategy, specifically the Use of first language (L1) sub-strategy.

In sum, for the writing stage, then, the various processes involved were expanding the content by supplying additional supporting details or examples and organizing the content by dividing the ideas into separate paragraphs and using

transitional markers. Throughout this stage, writers were able to make use of facilitative functions and used different strategies when encountering writing difficulties. All writing strategies were involved during the writing stage including Cognitive strategies (for example, Generating ideas, Elaborating, Retrieval, and Rehearsing), Metacognitive strategies (such as Monitoring) Rhetorical strategies (for instance, Organization and Use of L1), Communicative strategies (i.e. Avoidance, Reduction and Sense of readers) and Social/affective strategies (such as Resourcing and Getting feedback).

There were no prominent writing strategies for test takers of any particular writing proficiency level. Test takers in general used more or less all the strategies available. What is notable is the difference in how test takers managed the writing test task. While test takers who did not have a clear outline improvised by generating ideas and elaborating as they wrote, other test takers who did have a well thought-out plan were able to concentrate on structuring their sentences and organizing during the writing stage. The Spell-check and Grammar-check helping functions seemed to play a more prominent role during the writing phase than the Translation (dictionary) or Thesaurus functions. Hence, the Monitoring sub-strategy would take place when test takers check for spelling or grammar. The Self-reflective questions on the other hand, were not instrumental during the writing phase. The language used throughout the writing phase depended upon the individual test takers' background knowledge and experience with the target language, with more of the low intermediate writers doing a lot more translation than writers of the other two levels.

#### **4.3.2.2.c The proofreading stage**

The proofreading stage entailed revising for content and organization as well as editing for grammatical errors and other mechanical mistakes, areas of which were given different emphasis for each writer. In other words, some writers reported focusing on making more surface related changes than meaning related changes to their drafts. Meanwhile, writing in this stage involved most of the strategies that took place during the writing stage, with the addition of the evaluating sub-strategy (a Metacognitive strategy) and the clarification sub-strategy (a Cognitive strategy). Some writers did not make any changes at all.



The researcher feels that an addition to Mu's taxonomy is necessary at this point since writers did also make changes to the language with the purpose of correction particularly to the language and not merely to the ideas (Revising sub-strategy). Thus, the researcher took the liberty to add another sub-strategy, the Editing sub-strategy, considered as one Cognitive strategy used extensively in this phase of composition.

Time spent on proof reading and making changes varied. Many test takers, for instance G3INT88, who planned within 15 minutes and wrote within 40 minutes, had a good half an hour or so for proofreading or writer G3INT85 (below) who left the final 10-20 minutes for revising.

"If I remember right, I spent about 40 minutes or so on writing. Then the remaining time I spent on reviewing." (G3INT88)

"I spent about 10-20 minutes more on checking what should be changed." (G3INT85)

Conversely, some test takers spent most of their time writing that no time was left for them to proofread. With 90-minutes on their hands, these test takers were either not aware of the time, dedicated only a few minutes to proofreading (e.g. G4ADV114) or did not dedicate anytime for proofreading at all (e.g. G3ADV84).

"Then the last 5 minutes was for proofreading." (G4ADV114)

"Sometimes I can't finish writing on time. This time, I used up almost all the hour and a half just on writing. Usually I don't go back and revise. Mostly I would try to go back if there is time left and revise but when I don't have time I just don't bother. This time, I used up almost all the hour and a half just on writing." (G3ADV84)

However, not leaving time for proofreading was in fact an approach of choice taken by the writer, as some writers preferred to revise and edit as they wrote, working in a recursive manner.

“I didn’t spend a lot of time revising or editing. Usually when I write I will stick to one part until I am sure then I move on to the next part.”

(G4ADV119)

With the time they had to make any changes, test takers could be divided into two camps, one that concentrated only on surface related changes and another that dealt with both surface changes and meaning related changes. For writers who concentrated only on surface related changes, strategies used consisted of **Monitoring**, **Editing** and **Retrieval** sub-strategies. Different colors represent different strategies used.

“My revising involved just looking at the grammar. Did I forget the s-ending? Did I use the ‘do’ or ‘does’ correctly? Is there a full stop? That’s it. But actually if I were to really look at it, I would’ve checked to see if the reader could understand what I’ve written. Are the passive and active voices alright? But I didn’t go that deep. I did just a little.”

(G2LINT65)

“Whatever I wrote down the first time was left as it was because I was confident in the ideas that came out initially. Usually I just check the spelling and grammar because the ideas that come out first are usually what I stick to. I’m happy with them already.”

(G3INT85)

Unlike writer G3INT85 (above), who also stated the reason for working only on the surface structure; other writers reported making meaning related changes in addition to surface changes. Some writers emphasized on revising for content, elaborating and clarifying salient points in their essay. The specific writing strategies involved are **Evaluating**, **Revising** and **Elaborating** sub-strategies

“Then the last 5 minutes was for proofreading. Any time left was spent on thinking about what was missing or what I wanted to, like, to add on to the essay.”

(G4ADV114)

“After finishing the first draft, I read though it to see if there is anything missing and what I should add to it and where. I made some short notes to tell myself what to add and I started adding them when I wrote the next draft.”

(G1ADV4)

Writer G3INT88 (below) specifically stated that changes were made to more of content rather than grammar due to limited knowledge of grammar. The strategies used were *Evaluating*, *Elaborating*, *Sense of Readers* and Rehearsing sub-strategies.

“Then *the remaining time I spent on reviewing*. Mostly I revised my work after I finished the first draft. *I corrected the sentences that seemed strange to make it sound better*. I didn’t know how to correct each sentence but when read them, *I felt that the meaning was not as smooth as it should have been, so I tried to make it sound better*. I just used my judgment at the time...I paid more attention to content because my grammar is not so accurate. If the grammar is wrong, I don’t see it. I usually see something wrong in the content, so *I adjusted the content* more than the language.”

(G3INT88)

Writer G4LINT144 (below) reported focusing more on the organization of the essay during the proofreading stage using *Revising* and *Organization* sub-strategies.

“*I did do some revising*. Like, *I moved some ideas around*. Sometimes I think that a reason should be at the beginning so that the paragraphs can be *linked*. Between revising and editing, I probably did more revising.”

(G4LINT144)

Other writers reported emphasizing on aspects of content, organization, grammar and spelling during the proofreading stage. A variety of strategies was used in this process, encompassing the *Elaborating*, *Clarification*, *Editing*, *Retrieval*, *Organization*, *Monitoring*, *Evaluating*, *Revising*, and *Sense of Readers* sub-strategies. Different colors indicate different strategies.

“I wrote just only one draft, then in the second draft, *I added on to it, like more details and elaborated with a bit more reasons* but I don’t know a lot of vocabulary. *For grammar, I used basic principles*. *I checked to see that they were right*, but they aren’t usually correct. My grammar is terrible. My basic knowledge of grammar is not so good. I try to go for tutoring and it’s getting better.

For the second draft, *I checked to see what I could elaborate on*, but *I elaborated only a few sentences*. *I also edited a few parts*. I feel that the

grammar is probably wrong. I used so much time on the first draft that I didn't have enough time left to edit or proof read." (G2LINT69)

"I used the remaining time for revising to see if there were any parts I wanted to expand. I added on other reasons. I also looked at the vocabulary to check if I used the right vocabulary. And then the grammar. I added on to the content more than fixed grammar. I just briefly went through the grammar part." (G4INT121)

"After the first draft, in the second draft, I tried to develop the content, making it have more unity. Sometimes the content was still confusing so I tried to adjust it to make it clearer. I checked the grammar later, after the content. I just checked the points that I knew. I used whatever knowledge I have, like the -s/-es endings or commas. This I did later. I read the essay twice after writing to make sure that I had covered everything....But after the second draft, I looked at minor grammar points like adding the -s or -es after the verb or spelling....I read it again and if it sounded strange, I tried to change the tenses to make it sound smoother." (G2ADV45)

"When I was done with the first draft, I went back to check the organization to see if it was well organized or if it was still confusing. I read to check if the organization sounded smooth. Then the detailed things like spelling, I checked last. I tried to make the essay smooth. I focused on grammar at the same time. Maybe at first I didn't pay attention to the grammar that much, but in the revision stage in the second draft I started looking at the details. But maybe I failed at some parts." (G2ADV44)

Some writers reported not having revised, providing supporting reasons that are worth noting. Writer G1INT19 states that the first draft written was already satisfactory.

“After finishing the first draft, I came back to check if what I had written was clear. But mostly, after writing the first draft I thought it was already ok.”

(G1INT19)

Writer G3ADV84 maintains that revision takes place only when there is time left and that it is more challenging to make content changes as compared to editing grammar.

“Usually I don’t go back and revise. Mostly I would try to go back if there is time left and revise but when I don’t have time I just don’t bother... Usually I would just edit (grammar) because for the content, if I wanted to change it, I wouldn’t know what to change since I already put down all the ideas I had. Like for grammar, I can check and correct it but for the content, I wouldn’t know how to make it better.”

(G3ADV84)

Again, although some test takers reported not having revised, the researcher feels these writers take more of a recursive process. Unlike other writers who produce multiples drafts and make changes to each draft, working in this systematic manner, these writers appear to write, revise and edit, progressing slowly. Test takers G2LINT65 and G2INT56 (below) illustrate this.

“The content I worked on took a long time too because I had to think about it as I wrote, because sometimes I wrote for a while then I realized that there wasn’t not enough content (previously) up there so I had to go back and rewrite it. It took, like, an hour and a half.

I didn’t write from the top of the page to the bottom of the page all the time. Because I was aware at all times what it was that I have written before and was fully aware of the content that I was about to write down.

While I was writing I may have stopped to think of what I had previously written and maybe I decided that it should have been another way and so I was constantly changing and altering what had already been written here and there. It happened in this manner so it took as long as an hour or so during this process.”

(G2LINT65)



“In general, if I write on paper, I will just write one draft and that’s it. But if it’s on a computer, I revise and edit as I write. I read it over and edited again one last time. If I got stuck in one place, I would see if there was another way to make it sound better. Then I changed it to make it sound smoother. I didn’t I have a system.” (G2INT56)

To conclude, during the proofreading stage, most of the writing strategies from Mu’s (2005) Taxonomy were employed. The Editing sub-strategy was added to the list of writing strategies, as test takers were found to make changes to the language in addition to making changes to the overall text. Time dedicated to proofreading varied. Some test takers intentionally left little time or more time for proofreading. Meanwhile, other test takers, in fact, worked recursively during the writing stage, writing, revising and editing as they progressed, yielding the proofreading stage virtually non-existent. Test takers also made changes to their essays differently for different reasons. Some concentrated more on surface changes stating that they were already satisfied with the content or that they did not know how to improve on content. Others concentrated more on content maintaining that they were oblivious to any grammatical errors they made.

Summing up the writing strategies and processes in this section, it can be stated that test takers in general employed most of the writing strategies found in Mu’s (2005) Taxonomy of Writing Strategies. The Comparing sub-strategy (a Rhetorical strategy) did not emerge because test takers were virtually clear as to which rhetorical convention they would be working with as they were informed at the beginning what type of essay they would be writing. The Summarizing sub-strategy (a Cognitive strategy) was not evident as a strategy used since there were no reading resources available for test takers to synthesize. Test takers were not able to receive feed back as it was a test situation, thus the Getting feedback and Assigning goals sub-strategies (Social/affective strategies) were not utilized. Test takers of all writing proficiency levels employed the majority of strategies, and how they used each strategy either helped or hindered their writing process.

#### 4.4 Opinions towards the T-CBWT

Test takers' opinions towards the writing test they took were illustrated via Likert scale and open-ended questions from Section 2 Questionnaire 2 Part A and B.

##### 4.4.1 Opinions from Likert scale

Data in this section was derived from Questionnaire 2 Section 2 and is reported in frequency and percentage. A criteria<sup>4</sup> was previously set for the use of mean score interpretation. High scores indicated positive views and low scores negative views. The questions in Likert scale form given to each test group was distinct as each test group was tested with different methods. However, the first six items found in Questionnaire 2 Section 2 Part B were similar for all groups. These questions asked for general views towards the T-CBWT.

##### 4.4.1.1 Views towards the T-CBWT in general

Table 4.30 presents test takers' views towards the T-CBWT.

**Table 4.30** Views towards the T-CBWT

Question Items	Opinions				$\bar{x}$	SD
	4 Strongly Agree	3	2	1 Strongly disagree		
1. The instructions on this writing test are clear.	69 (47.9%)	72 (50.0%)	3 (2.1%)	-	3.46	.540
2. The orientation prior to taking the test was clear.	64 (44.4%)	73 (50.7%)	7 (4.9%)	-	3.40	.582
3. The procedures were easy to follow.	56 (38.9%)	75 (52.1%)	13 (9.0%)	-	3.30	.627
4. I like to write on the computer more than with pen.	54 (37.5%)	67 (46.5%)	20 (13.9%)	3 (2.1%)	3.19	.751
5. The test is able to measure my true writing ability.	23 (16.0%)	97 (67.4%)	23 (16.0%)	1 (0.7%)	2.99	.591
6. I would like to take this type of test again in the future.	27 (18.8%)	97 (67.4%)	18 (12.5%)	2 (1.4%)	3.03	.608

<sup>4</sup> 1.00-1.49 Strong, negative view  
1.50-2.49 Somewhat negative view  
2.50-3.49 Somewhat positive view  
3.50-4.00 Strong, positive view

7. The <u>translation</u> function (dictionary) should be allowed during an English writing test.	33 (45%)	32 (44.4%)	7 (9.7%)	-	3.36	.750
8. The <u>thesaurus</u> should be allowed during an English writing test.	31 (43.1%)	30 (41.7%)	10 (13.9%)	1 (1.4%)	3.26	.750
9. The <u>spell-check</u> function should be allowed during an English writing test.	34 (47%)	32 (44%)	6 (8.3%)	-	3.39	.640
10. The <u>grammar-check</u> function should be allowed during an English writing test.	35 (48.6%)	33 (45.8%)	4 (5.6%)	-	3.43	.601
11. The <u>Self-reflective reminder questions</u> should be provided during an English writing test.	15 (20.8%)	39 (54.2%)	18 (25%)	-	2.96	.680
12. Helping functions like the ones on this test are <u>necessary</u> during an English writing test.	26 (36.1%)	36 (50.0%)	10 (13.9%)	-	3.22	.676
13. Available helping functions help me to produce the best essay possible.	22 (30.6%)	36 (50%)	14 (19%)	-	3.11	.703
14. A writing test with available helping functions is <u>fair</u> for the test taker.	17 (23.6%)	27 (37.5%)	26 (36.1%)	2 (2.8%)	2.82	.828
15. I feel <u>secure</u> with this type of test because I have help from the different helping functions.	31 (43.1%)	36 (50%)	5 (6.9%)	-	3.36	.612
16. It's <u>necessary</u> to provide writers with the chance to produce drafts during writing tests.	16 (22.2%)	42 (58.3%)	13 (18.1%)	1 (1.4%)	3.01	.682
17. Being able to draft many times during a test helps me produce the best essay possible.	14 (19.4%)	46 (63.9%)	12 (16.7%)	-	3.03	.604
18. This type of test with draft writing is <u>fair</u> for the test taker.	14 (19.4%)	50 (69.4%)	8 (11.1%)	-	3.08	.550
19. I feel <u>secure</u> taking this type of writing test because I can draft and revise many times.	20 (27.8%)	40 (55.6%)	12 (16.7%)	-	3.11	.662
20. I feel I can write better on this type of writing test than other types of tests that are without helping functions and required drafts.	37 (34.3%)	59 (54.6%)	11 (10.2%)	1 (0.9%)	3.22	.660

**Note:** For items 7-20, not all frequencies add up to 144, since the control group consisting of 36 test takers were not asked to give their opinions on the statements. For those items, the valid percentage is reported.

Items 7 to 15 and item 20 asked Groups 1 and 3 specifically for their opinions towards the facilitative functions, while Items 16 to 20 were for Groups 1 and 2 to voice their opinions towards draft writing.

Results derived from Items 1 to 6 reveal examinees' positive views towards the T-CBWT in general. Examinees of all groups shared positive views towards the clarity of test instructions ( $\bar{x} = 3.46$ ), the clarity of the orientation prior to the test ( $\bar{x} = 3.40$ ), the simplicity of the procedures ( $\bar{x} = 3.30$ ), the preference of using computers for writing ( $\bar{x} = 3.19$ ), the ability of the T-CBWT to measure writing skills ( $\bar{x} = 2.99$ ), and the desire to take this type of test again ( $\bar{x} = 3.03$ ).

#### 4.4.1.2 Views towards facilitative functions and required drafting

Referring to Table 4.30 above, test takers of Group 1 and 3, both having facilitative functions in common, addressed items 7 to 15. Most of the test takers from these two test conditions had positive views towards the facilitative functions available to them. Most agree that the translation, thesaurus, spell-check, grammar-check and self-reflective reminder questions should be available for use during writing tests ( $\bar{x} = 3.36, 3.26, 3.39, 3.43, 2.96$  respectively). The majority of test takers from these two groups feel that such helping functions are necessary during a writing test ( $\bar{x} = 3.22$ ), that they can help test takers to produce the best essay possible ( $\bar{x} = 3.11$ ), and that these helping functions make them feel secure ( $\bar{x} = 3.36$ ). More than half of the test takers feel that having helping functions available is fair during a writing test ( $\bar{x} = 2.82$ ).

Test takers of Groups 1 and 2, having to produce drafts, addressed items 16 to 19 in table 4.32 above. Most of the test takers from these two groups agree that providing a chance for test takers to draft during a writing test is necessary ( $\bar{x} = 3.01$ ) and that drafting several times helps test takers to produce the best essay possible ( $\bar{x} = 3.03$ ). Many think that writing tests with required drafting is fair ( $\bar{x} = 3.08$ ) and that they feel secure ( $\bar{x} = 3.11$ ), as drafting allows them to review many times before submission.

Upon addressing item 21 in Table 4.30 above, test takers of Groups 1, 2 and 3 for the most part feel they can write better on the T-CBWT because of the available helping functions and required drafts ( $\bar{x} = 3.22$ ).

Table 4.31 below presents test takers' views towards the usefulness of facilitative functions and required multiple drafts.

**Table 4.31 Views towards the usefulness of facilitative functions and required draft writing**

Usefulness of	View	ADV	INT	LINT	Total
		(N = 24)	(N = 24)	(N = 24)	(N = 72)
Percentage					
Spell-check	Helpful	91.7	100	95.9	95.8
	Not helpful	8.3	-	4.2	4.2
Grammar-check	Helpful	95.9	95.9	91.7	94.5
	Not helpful	4.2	4.2	8.3	5.5
Dictionary	Helpful	79.2	87.5	83.3	83.3
	Not helpful	20.9	12.5	16.7	16.7
Thesaurus	Helpful	58.4	83.3	66.7	69.5
	Not helpful	41.6	16.7	33.4	30.5
Self-reflective reminders	Helpful	37.5	54.2	50	47.3
	Not helpful	62.5	45.8	50	52.7
Drafts	Helpful	91.7	95.9	100	95.8
	Not helpful	8.3	4.2	-	4.2
Outline	Helpful	95.9	91.7	100	95.8
	Not helpful	4.2	8.3	-	4.2
Writing (1 <sup>st</sup> draft)	Helpful	95.8	87.5	91.7	91.7
	Not helpful	4.2	12.5	8.3	8.3
Revising (2 <sup>nd</sup> draft)	Helpful	62.5	70.9	75	69.5
	Not helpful	37.5	29.2	25	30.5
Editing Proofreading (3 <sup>rd</sup> draft)	Helpful	75	87.5	83.4	81.95
	Not helpful	25	12.5	16.7	18.05

**Note:** ADV = Advanced level, INT = Intermediate level, LINT = Low intermediate level

Data from Table 4.31 above was derived from Questionnaire 2 Section 2 Part A, also in Likert-type scale, asking test takers Groups 1, 2 and 3 specifically how useful they found the facilitative functions and required drafts. Responses are summarized in the Table. For reporting purposes, the responses to each 4-point Likert-type scale option were grouped into two categories, either helpful or not helpful. The proportion of test takers who responded within each writing proficiency level was computed. Writers of all levels exhibited almost identical trends regarding how useful they thought each of the features of the T-CBWT was. Specifically, over half of the test takers from all three levels, felt that the all facilitative features were useful, save for the self-reflective reminder questions, which more than half of the writers from the advanced groups felt were not useful.



Regarding required draft writing, a lower proportion of writers from the advanced groups felt that the 2<sup>nd</sup> and 3<sup>rd</sup> drafts for revising and editing were useful, while a higher proportion of writers of the intermediate level found the thesaurus useful.

#### 4.4.2 Opinions from open-ended questions

Test takers' opinions towards the test they took were voiced on the open-ended questions found in Section 2 Part 2 of Questionnaire 2. These opinions were translated, summarized (See [Appendix T](#)) and reported as follows.

**Question 1** asked all test groups whether they thought 90 minutes was a sufficient amount of time for them to complete the writing test and asked for a suggested amount of time if they felt otherwise. Table 4.32 summarizes test takers' views on the sufficiency of time allowance presented according to writing proficiency level.

**Table 4.32 Views on sufficiency of time allotment**

		Frequency			Total
		ADV	INT	LINT	
Valid	No	18	17	20	55 (38%)
	Yes	30	31	28	89 (62%)
Total		48	48	48	144 (100%)

**Note:** ADV = Advanced level, INT = Intermediate level, LINT = Low intermediate level

Overall, eighty-nine test takers (62%) thought that 90 minutes was sufficient, while the remaining fifty-five test takers (38%) suggested that the exam time should take either 100 minutes (3 examinees or 5.6%) or 120 minutes (51 examinees or 94.4%). Table 4.33 summarizes test takers' suggested time allotment for the T-CBWT.

**Table 4.33 Suggested time allotment**

		Frequency				Total
		G1	G2	G3	G4	
Suggested Time	100	2	-	-	1	3 (5.6%)
	120	18	18	7	8	51 (94.4%)
Total		20 (37%)	18 (33%)	7 (13%)	9 (17%)	54 (100%)

**Note:** G1 = Facilitative Functions & Drafts test group, G2 = Drafts test group, G3 = Facilitative Functions test group, G4 = Control Group

With regard to test group, those who thought 90 minutes was not enough were 20 examinees (37%) from Group 1 (group with facilitative functions and required drafts) and 18 examinees (33%) from Group 2 (group with required drafts), 7 examinees (13%) from Group 3 (group with facilitative functions) and 9 examinees (17%) from Group 4 (control group). Refer to Table 4.33 above and Figure 4.31B.

**Figure 4.31 Views on sufficiency of time allotment**

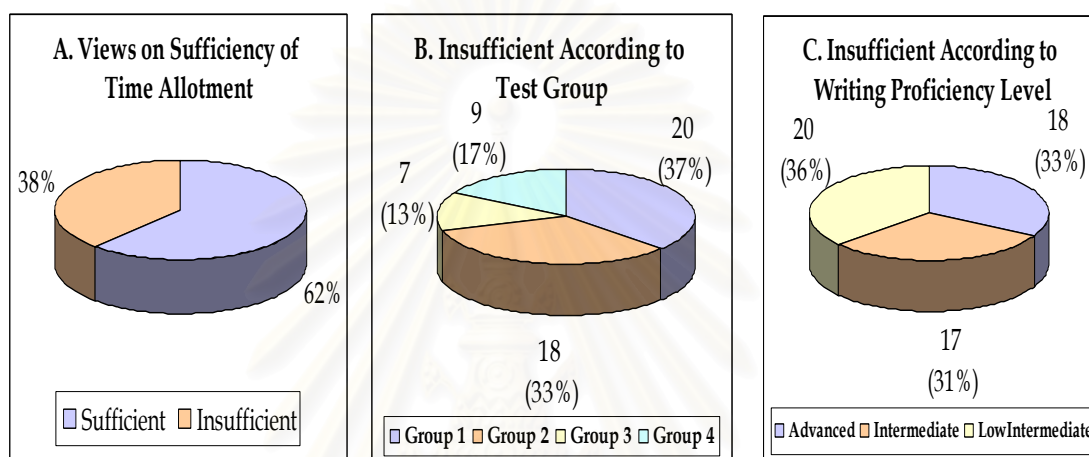


Figure 4.31 summarizes the overall views on sufficiency of time allotment. Of all the test takers, eighty-nine (62%) thought 90 minutes was sufficient, while the remaining fifty-five (38%) thought otherwise. This is seen in Figure 4.31A. Referring to Figure 4.31C, of the fifty-five test takers who thought 90 minutes was insufficient, 18 test takers (33%) were from the advanced level, 17 (31%) were from the intermediate level, and 20 (36%) were from the low intermediate level.

**Question 2** asked all the test takers their reasons why or why not they felt the writing test was a suitable measure of their true ability to write. Table 4.34 below illustrates test takers' views towards T-CBWT as a suitable measurement of writing ability. From the 144 test takers, the majority responded favorably to the T-CBWT as a measurement of writing ability, with 120 test takers (83.4%) in agreement.

**Table 4.34 T-CBWT as suitable measurement of writing ability**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.7	.7	.7
	Disagree	23	16.0	16.0	16.7
	Agree	97	67.4	67.4	84.0
	Strongly Agree	23	16.0	16.0	100.0
	Total	144	100.0	100.0	

Since test features were different for each group, the specific reasons why test takers thought the T-CBWT is an acceptable measurement of writing ability are summarized in Table 4.35 in the following page according to test group. One hundred thirty-two test takers supplied specific reasons to agree or disagree that the T-CBWT could measure their true writing ability. Some examinees supplied more than one reason; therefore, the proportion did not always add up to 100%. The three most frequent reasons to disagree was the availability of the facilitative functions (Item 1), which they felt did not allow them to demonstrate their own true writing ability, their poor typing skills (Item 2), and the insufficient time allotment (Item 3).

In contrast, the majority of those who agreed that the T-CBWT was able to measure their true writing ability felt they had to demonstrate their own writing ability regardless (Item 1); that drafting enhanced their writing performance (Item 2); and that the availability of facilitative functions assisted them in performing to their true ability (Item 3). Other opinions are summarized according to test group in Table 4.35 in the following page.

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**Table 4.35 Examinees' reasons to agree or disagree that T-CBWT is suitable measurement of true writing ability**

Reasons to dis/agree that the T-CBWT can measure true writing ability	Group 1 (From 29 examinees)		Group 2 (From 32 examinees)		Group 3 (From 35 examinees)		Group 4 (From 36 examinees)		Total N=132
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Percent
<b>Disagree</b>									
1. Availability of facilitative functions	5	17.24	-	-	11	31.43	-	-	12
2. Typing skills as an obstacle	3	10.34	-	-	1	2.86	1	2.77	3.78
3. Insufficient time allowance	2	6.70	-	-	-	-	-	-	1.5
4. Lack of facilitative functions/references	-	-	1	3.13	-	-	-	-	.75
5. Unfamiliar with method of writing test	-	-	-	-	1	2.86	-	-	.75
6. Topic difficulty	-	-	-	-	-	-	1	2.77	.75
<b>Agree</b>									
7. Use of own writing ability	12	41.38	13	40.63	12	34.29	23	63.89	45.45
8. Drafting enhances writing	2	6.70	15	46.88	-	-	1	2.77	13.6
9. Availability of facilitative functions	3	10.34	-	-	7	20	-	-	6.8
10. No help from facilitative functions	-	-	3	9.38	-	-	6	16.67	6.8
11. Must complete task within time limit	-	-	3	9.38	1	2.86	3	8.33	5.3
12. Able to express self freely	-	-	1	3.13	2	5.71	3	8.33	4.5
13. No different from pen and paper test	2	6.70	2	6.25	1	2.86	-	-	3.78
14. Use of word processor enhances writing	-	-	-	-	-	-	3	8.34	2.27
15. Sufficient time allowance	1	3.45	1	3.13	-	-	-	-	1.5
16. Interesting topic	-	-	1	3.13	-	-	-	-	.75
17. Neutral topic	1	3.45	-	-	-	-	-	-	.75

**Note:** Because some examinees supplied more than one reason for agreeing or disagreeing, the proportion did not always add to 100%

**Question 3** asked Groups 1 and 3 whether they thought the Self-reflective Questions should be available for use during a writing test. From the Likert scale, a total of 72 test takers provided answers. Table 4.36 presents the frequencies. Of those who provided answers, seventeen (23.6%) disagreed, while 40 examinees (55.6%) agreed and 15 examinees (20.8%) strongly agreed.

**Table 4.36 Availability of Self-reflective Questions**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	17	11.8	23.6	23.6
	Strongly Agree	15	10.4	20.8	100.0
	Total	72	50.0	100.0	
Missing	System	72	50.0		
Total		144	100.0		

**Note:** In terms of level, from the 55 subjects who agreed and strongly agreed, 19 subjects (34.54%) were from the low-intermediate level; 18 subjects (32.72%) were the advanced level and 17 subjects (30.9%) test takers were from the intermediate level.

The reasons for disagreeing with having SRQs available during a writing test were provided by 14 examinees as shown in the Table 4.37 below. Seven test takers (50%) thought that consulting the SRQ was a waste of writing time. Three (21.42%) felt that test takers should already be prepared with the knowledge on the SRQ prior to the writing tests. Two examinees (14.28%) thought there were too many detailed questions on the SRQ. One (7.14%) felt that the SRQ makes the test taker loose confidence, while another (7.14%) did not understand how to use the SRQ.

**Table 4.37 Examinees' reasons to disagree with Self-reflective questions**

Reasons to disagree with SRQ	Group 1	Group 3	Total
	(6 subjects)	(8 subjects)	(14 subjects)
	Frequency	Frequency	Percent
1. A waste of writing time	4	3	50
2. Everyone should already know SRQ	1	2	21.42
3. Too many detailed questions	-	2	14.28
4. SRQ makes us loose confidence	1	-	7.14
5. Don't understand usage	-	1	7.14

**Note:** One examinee from Group 1 and two from Group 3 did not supply reasons.

**Question 4** asked whether test takers would like to take the TCBWT again in the future. Of all 144 test takers, twenty test takers (13.9%) do not want to take the TCBWT again, while one-hundred twenty-four (86.1%) would prefer to. [Table 4.38](#)



summarizes test takers' views on whether they would choose to take the T-CBWT in the future.

**Table 4.38 T-CBWT as a future test option**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	1.4	1.4	1.4
	Disagree	18	12.5	12.5	13.9
	Agree	97	67.4	67.4	81.3
	Strongly Agree	27	18.8	18.8	100.0
	Total	144	100.0	100.0	

**Note:** In terms of test group, three subjects (2.08%) from Group 1, three subjects (2.08%) from Group 2, eight subjects (5.55%) from Group 3, and six subjects (4.16%) from Group 4 do not want to take the test again. In terms of level, six subjects (12.5%) from the advanced level, seven subjects (14.58%) from the intermediate level, and seven subjects (14.58%) from the low-intermediate level do not want to take the T-CBWT again.

Reasons for not choosing to take the T-CBWT again were supplied by 20 subjects, some of who gave more than one reason. These reasons are listed in Table 4.39 in the following page. First, the answers to the question were categorized under similar themes as shown in Table 4.39. The four most frequent reasons of those who disagreed were they were not familiar with the test method (Item 1); their typing skills were an obstacle to performing well on the test (Item 2a); using the computer caused eye-strain (Item 2b); and the procedures took up too much time (Item 3a), respectively. Other reasons from the minority are summarized in [Table 4.39](#).

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**Table 4.39 Examinees' reasons to reject the T-CBWT as a future test option**

Reasons to reject the T-CBWT (from 20 test takers)	Group 1	Group 2	Group 3	Group 4	Total	Total from 20 subjects
	Frequency	Frequency	Frequency	Frequency	Frequency	Percent
<b>1. Unfamiliar with test method</b> (e.g. using computer to write, drafting, etc.)	1	2	5	2	10	50
<b>2. Using the computer</b>						
a. Typing skills an obstacle	2	3	2	1	8	40
b. Eye-straining	3	1	1	-	4	20
c. Causes pressure & anxiety obstructing ability to think	-	-	-	1	1	5
d. Sound of keyboard tapping distracting	-	-	-	1	1	5
<b>3. Procedures</b>						
a. time consuming	-	3	-	-	3	15
b. too many procedures involved	1	-	-	-	1	5
c. Dislike producing many drafts	-	1	-	-	1	5
<b>4. Facilitative functions</b>						
a. Causes anxiety/impedes writing	1	-	-	-	1	5
b. Causes writers to be too dependent	1	-	-	-	1	5
<b>5. Lack of facilitative functions</b>	-	-	-	1	1	5
<b>6. Prompt requires a lot of time to think</b>	-	-	-	1	1	5
<b>7. Waste of resources</b>	-	-	1	-	1	5

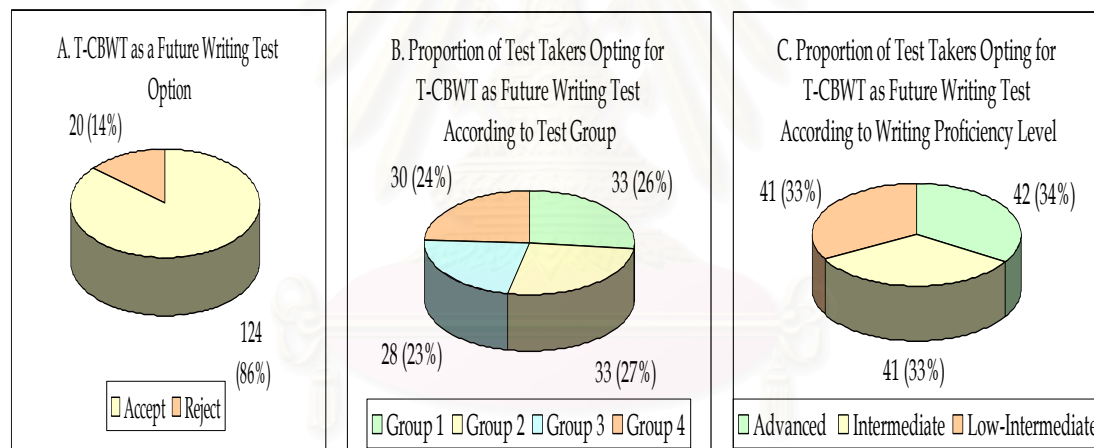
Note: Because some examinees supplied more than one reason, the proportion sometimes exceeded 100%.

Data were missing from: Group 1 examinee # 1,14,18,22 Group 4 examinee # 32

Conversely, the remaining examinees (86.1%) do choose to take the T-CBWT again in the future. According to group, data reveals that the majority of test takers (124 or 86.1%) from all groups want to take the T-CBWT again (See Figure 4.32A). That is thirty-three subjects (26%) from Group 1, thirty-three subjects (27%) from Group 2, twenty-eight subjects (23%) from Group 3, and thirty subjects (24%) from Group 4 (Refer to Figure 4.32B).

A similar trend occurs in terms of level, being that the majority of students from all three levels would like to take this test again (See Figure 4.32C). That is forty-two subjects (34%) from the advanced level, forty-one subjects (33%) from the intermediate level, and forty-one subjects (33%) from the low-intermediate level would like to take the T-CBWT again.

**Figure 4.32 Views on opting for T-CBWT as a future writing test**



Of the one-hundred twenty-four examinees, one-hundred nineteen supplied reasons to support their choice as seen in Table 4.40 in the following page. Some examinees offered more than one reason for opting to take the T-CBWT again. The top five reasons are: the MS Word processor provides convenience in producing essays (Item 1a); the T-CBWT is good practice and learning experience (Item 6); the facilitative functions are helpful (Item 2a); drafting is helpful (Item 3a); and using the word processor helps save resources (Item 1d).

**Table 4.40 Examinees' reasons to accept the T-CBWT as a future test option**

Reasons to take the T-CBWT in the future	Group 1 (From 29 examinees)		Group 2 (From 33 examinees)		Group 3 (From 28 examinees)		Group 4 (From 29 examinees)		Total N=119
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Percent
<b>1. MS Word Processor</b>	(16)	(50)	(21)	(63.63)	(30)	(107)	(29)	100	
a. provides convenience	11	34.37	14	42.42	14	50	14	48.27	<b>44.5</b>
b. enhances writing/organizing	1	3.1	-	-	3	10.7	2	6.8	5.0
c. helps creates neat & clean work	1	3.1	3	9.09	3	10.7	4	13.7	9.2
d. saves resources (energy/time/whiteout/paper)	2	6.25	3	9.09	8	28.57	9	31.0	<b>18.48</b>
e. output can be fairly rated	1	3.1	1	3.03	2	7.14	-	-	3.36
<b>2. Facilitative Functions</b>	(13)	(40.62)	(-)	(-)	(14)	(50)	-	-	
a. helpful	13	40.62	-	-	11	39.28	-	-	<b>20.2</b>
d. create security/confidence	-	-	-	-	3	10.7	-	-	2.5
<b>3. Drafting</b>	(12)	(37.5)	(22)	(66.66)	(-)	(-)	-	-	
a. helpful	9	28.12	22	66.66	-	-	-	-	<b>26</b>
b. creates confidence	3	9.37	-	-	-	-	-	-	2.5
<b>4. SRQ creates confidence</b>	-	-	-	-	1	3.57	-	-	.84
<b>5. Other test features</b>									
a. Neutral prompt	1	3.1	-	-	-	-	1	3.44	1.68
b. Clear instructions	-	-	1	3.03	-	-	1	3.44	1.68
c. Can measure true writing ability	-	-	-	-	-	-	2	6.89	1.68
<b>6. Good practice/learning experience</b>	5	15.6	13	39.39	8	28.57	15	51.72	<b>34.45</b>
<b>7. Can apply experience to real-life tests</b>	-	-	2	6.06	2	7.14	3	10.3	5.88
<b>8. Less stressful writing experience/fun</b>	2	6.25	3	9.09	2	7.14	7	24.13	<b>11.76</b>
<b>9. Have a chance to express self</b>	1	3.1	1	3.03	1	3.57	4	13.7	5.88
<b>10. Prefer typing to writing</b>	-	-	1	3.03	1	3.57	-	-	1.68

**Note:** Because some examinees supplied more than one reason, the proportion sometimes exceeded 100%.

Data were missing from: Group 1 examinee # 1,14,18,22 Group 4 examinee # 32

**Question 5**, the final open-ended question, asked test takers for other comments they had on the test. The comments given could be categorized into reasons why they liked or disliked the T-CBWT and suggestions to improve the test. The reasons why they liked or disliked the test were separated and included in the lists seen previously in Tables 4.39 and 4.40 reported under opinions to Question 4 above. Suggestions to improve the T-CBWT are summarized here in Table 4.41.

**Table 4.41 Examinees' suggestions for the improvement of the T-CBWT**

Examinees' suggestions	Group 1 (N = 10)	Group 2 (N = 12)	Group 3 (N = 9)	Group 4 (N = 6)	All Groups (Total = 37) 100%
1. Increase time allowance	3	1	-	3	18.91%
2. Implement T-CBWT formally	-	4	-	1	13.51%
3. Provide more T-CBWT exposure	2	-	-	1	8.10%
4. Modify/reduce procedures	-	3	-	-	8.10%
5. Give topic choices	-	-	3	-	8.10%
6. Remove 1 draft	-	2	-	-	4.08%
7. Resources	2	-	-	-	5.40%
a. Provide Thai English dictionary	-	-	-	-	-
b. Provide resources from internet	-	-	2	-	5.40%
c. Provide more staff to explain procedures	-	-	-	1	2.04%
d. Allow SRQs always	-	-	1	-	2.70%
e. Reduce number of items on SRQ	-	-	1	-	2.70%
f. Eliminate Facilitative Functions	1	-	-	-	2.70%
8. Reserve for those with Typing skills	-	1	-	-	2.70%
9. Decrease time allowance	1	-	-	-	2.70%
10. Decrease required number of words	1	-	-	-	2.70%
11. Give topic in advance	-	1	-	-	2.70%
12. Implement T-CBWT every semester	-	-	1	-	2.70%
13. Implement T-CBWT for every year	-	-	1	-	2.70%

**Note:** Twenty-six opinions are missing from Group 1, twenty-six from Group 2, twenty-seven from Group 3, and thirty from Group 4.

Altogether 37 test takers provided suggestions. According to the data in Table 4.41, the two most frequent suggestions given were to increase time allotment (18.91%) and to formally implement the T-CBWT as a writing test to be taken in English classes (13.51%) respectively. Other suggestions are reported in the table.



#### 4.5 Summary

This final section of Chapter 4 very briefly summarizes the research findings, providing highlights from the chapter.

A. Research questions 1a, 2a, and 3 ask if the facilitative functions and drafts have a significant effect on test takers' English writing scores and which combination of factors has a greater significant effect on test takers' English writing scores. The results from the two-way analysis of variance indicate that the availability of the facilitative features and prescribed drafts did not show any influence on the writing performance scores of test takers when comparing mean scores across test conditions regardless of combination. The results of the Kruskal-Wallis  $H$  and the Mann-Whitney  $U$ , however, indicate that the 'with facilitative functions' test condition had a significant effect on mechanic scores for writers of all three writing proficiency levels. Moreover, the 'with required drafts' test condition had a significant effect on content scores for writers of the advanced writing proficiency level.

B. Addressing research question 1b, which asks whether facilitative features have an effect on test takers' English writing process, frequency counts based on test takers' usage of facilitative features, reveal that the facilitative features having the most effect on test takers' writing process were the spell-check and grammar-check functions, followed by the translation device. The facilitative features having the least effect on test takers' writing process were the thesaurus and self-reflective reminder questions respectively.

C. Research question 2b asks whether required drafts have an effect on test takers' English writing process. Textual analysis using Faigley and Witte's (1981) taxonomy of revision changes reveal that required drafts have an effect on test takers' writing process for certain individuals more than others. The effect was more positive than negative in that the structured drafts helped test takers channel their attention helping them to revise in a systematic manner.

Frequency counts of the types of revision changes made reveal that for test takers of the advanced and low intermediate writing proficiency levels, microstructure changes were made the most followed by meaning-preserving changes and surface changes respectively. However, for test takers of the intermediate level, meaning preserving changes were made the most, followed by

micro-structure changes and surface changes respectively. Organizational changes were made the least for all writing proficiency levels.

Further textual analysis reveals that micro-structure changes at the sentence or the clause level served to substantiate essays, while meaning-preserving changes at the sentence or clause level, although rare, served to effectively modify and clarify ideas. Moreover, surface structure changes were evident most in essays of test takers belonging to the 'with drafts' test condition. The majority of grammar-driven surface changes were cosmetic; few were related to grammatical aspects that are common errors Thai EFL learners make. Few word-level substitutions were for the purpose of adjusting for sophistication, even in the 'with facilitative and drafts' test group.

Frequency counts carried out on the quality of revision changes reveal that most of the changes made by test takers of all writing proficiency levels were positive changes or changes that served to improve the quality of the text. Although low intermediate writers made more negative changes or changes that impeded the quality of the text, that is only because they produced overall more revision changes than their counterparts.

D. Research question 4a concerns computer writing behaviors of participants. Frequency counts reveal that in *non-test situations*, learners are still very much used to writing on paper as they do not usually produce outlines or drafts directly onto the computer. Frequency counts also indicate that learners are still unfamiliar with using the Translation and Thesaurus devices on the Microsoft Word as they use these two devices in no-test situations to a very low degree.

Frequency counts further reveal that in *test situations*, half of the test takers create mental outlines when planning, while others produce visual outlines. As regards revision style, the majority of test takers composes and revises simultaneously then revises once more in the end. The trend for editing is that test takers do not have a particular editing sequence. They edit any error they encounter at random.

Content analysis using Mu's (2005) taxonomy on verbal reports reveals test takers' writing strategies in test situations. During the planning stage, test takers might have either a clear structured plan or a rough unstructured plan. Many low

intermediate level writers do not have a clear structured visual outline. Strategies employed during the planning stage include Cognitive (Generating ideas, Retrieval, Rehearsal sub-strategies), Metacognitive (Planning sub-strategy), Rhetorical (Organization and Formatting sub-strategies), and Social affective (Resourcing and Rest/deferral sub-strategies).

Evidence was not substantial enough to conclude which particular writing strategy was employed more among test takers of a specific writing proficiency level during the writing phase. Nevertheless, test takers who began with no structured plan concentrated on generating ideas, rehearsing and elaborating & revising. Test takers with detailed structured plans concentrated on: structuring sentences and linking ideas. It was also found that the Resourcing and monitoring sub-strategies were prompted by the spell-check and grammar-check. These strategies were seldom self-initiated for the other three facilitative features (the MS Word translation and thesaurus devices and the self-reflective reminder questions).

During the proofreading stage, strategies used were the same as those used during the writing stage as well as two other writing strategies including the Cognitive (Clarification sub-strategy) and Metacognitive strategies (Evaluating, Revising, and Editing sub-strategies).

E. Research question 4b concerns test takers' perspectives towards the T-CBWT. Frequency counts reveal overall positive views towards the clarity of test instructions and test orientation, the simplicity of the procedures, the preference of using computers for writing, the time allotment, the T-CBWT as a measure of writing ability and the desire to take this type of test again. The majority of test takers felt they could write better on the T-CBWT because of the available helping functions & required drafts.

Chapter 4 has presented the results addressing the research questions of interest. The quantitative and qualitative results will be discussed further in the following chapter.

## CHAPTER V

### DISCUSSION AND CONCLUSION

This study is mainly related to writing performance and processes in special computer-based test conditions whereby test takers are equipped with facilitative functions and required to produce drafts. This chapter presents summarized results, discussions, implications and recommendations. The first part of the chapter summarizes the results of the research questions and discusses the results. The second part of the chapter concerns implications based upon the findings of the study, with one part addressing issues related to the assessment of writing on the computer and another part relating to pedagogical implications for EFL writing instruction. The third part offers recommendations for future research. The chapter ends with some closing remarks.

#### 5.1 Summary and discussions

This section consists of brief summaries of the research results along with discussions. It would be important at this point to take into account the sample size used in this study, characteristics of the samples, how factors are investigated, and the characteristics of the T-CBWT. The interpretation of the findings in this study should be viewed with caution until a number of questions can be answered through more empirical studies.

##### 5.1.1 Effects of the T-CBWT on the written product

Research questions 1a, 2a, 3

*1a. Do the facilitative functions (thesaurus, translation, spell-check, grammar-check, self-reflective questions) in the T-CBWT have a significant effect on test takers' English writing scores?*

*2a. Do the required multiple drafts in the T-CBWT have a significant effect on test takers' English writing scores?*

*3. Which combination of factors (facilitative functions and/or the required multiple drafts) of T-CBWT has a greater significant effect on test takers' English writing scores?*

Results of the two-way analysis of variance revealed that neither the availability of facilitative functions nor the required multiple drafts significantly influences the overall writing performance of test takers in any of the test conditions. Neither was there evidence from the two-way analysis of variance to conclude that both factors combined significantly lead to better overall writing performance within any test condition. These findings have been disappointing since it was found that test takers did not take full advantage of some of the facilitative functions offered. These results suggest that despite being provided with facilitative functions and being required to produce multiple drafts in a test situation, the quality of test taker writing performance would still largely depend on other factors that are indicative of writing expertise, such as writing strategies or the writer's concern and determination for providing details and improving word choice adequately. While some may claim that language proficiency plays a major role in the quality of a written text, it has been proven, according to Cumming (1989: 81), that language proficiency is only an additive factor that would enhance the overall quality of the text. Writing expertise, on the other hand, has been proven to be more directly related to the quality of the discourse organization and content, the attention to complex aspects of writing, problem-solving behaviors, strategies and the concern of choosing the appropriate words and phrases to express ideas (ibid). This will be mentioned further in Section 5.1.2 (Page 216) where results of textual analyses are discussed.

Although there was no significant effect of the availability of facilitative functions or imposed multiple drafts on the writing performance of test takers when comparing between test conditions, at the writing proficiency level, the Kruskal-Wallis  $H$  test did reveal that test condition had some effect on Mechanics scores for test takers of all writing proficiency levels. This was further confirmed by the Mann-Whitney  $U$  tests which revealed that low intermediate, intermediate and advanced level test takers in the 'with facilitative functions' test condition regardless of whether or not they also had required drafts, obtained significantly higher scores on Mechanics than writers in test conditions that did not have facilitative functions. These results are directly attributable to the availability of facilitative functions and suggest that particularly the spell-check and grammar-check functions in the MS Word were instrumental in helping test takers with lower level functions of the task. It should be noted that lower level functions in this case include surface changes that



are cosmetic and not meaning-related. In other words, these two facilitative functions were only helpful with aspects of spelling or punctuation, which did not assist in the improvement of the overall written performance. This finding confirms previous research done by Daiute (1986), Harris (1985), and Hawisher (1987) who have reported that word processors facilitated only superficial revisions.

The Kruskal Wallis *H* tests also revealed that particularly for the advanced level writers test condition had an effect on clarity & explicitness as well as topic development and supporting details scores. The Mann-Whitney *U* tests further confirmed that writers of the advanced level who were in the 'with required drafts' condition obtained significantly higher scores on Clarity and Explicitness as well as Topic development and Supporting Details (or their overall Content scores) than advanced writers in all other test conditions. This evidence suggests that imposed draft writing was instrumental in channeling the attention of the advanced level test takers' in this test condition to content.

That the same effect was not evident for the advanced level test takers of the 'with facilitative functions and drafts' group may be due to their preoccupation with utilizing facilitative functions to aid their writing. From questionnaire data<sup>1</sup>, some subjects of this test group reported being distracted by all the facilitative functions available in addition to the required drafts they had to submit. This test condition may have been more of an overwhelming situation rather than an accommodating one for test takers in this group. Had they been trained in utilizing the facilitative functions for a more extensive period and were more at ease with these features, the outcome may have been different.

Furthermore, that the required multiple drafts affected the content scores of only the advanced level test takers and not test takers of other writing proficiency levels in the same test condition might have been because the advanced level test takers were sufficiently skillful in the language enabling them to easily shift their attention to the development of their content. On the contrary, test takers of the intermediate and low-intermediate levels of the same test condition may have had to

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<sup>1</sup> Refer to [Table 4.41](#) Examinees' reasons to reject the T-CBWT as a future test option or (IT#29) [Appendix T](#)

divide their attention to language as well as content, using up more time to structure their sentences and left with less time to develop their content. When lower ability learners cannot freely articulate their thoughts in a foreign language, they construct segments as they go, constantly assembling and disassembling language structures, following grammatical and lexical rules of English they have studied but not necessarily mastered (Kietlinska, 2006: 70). This would yield required draft writing more effective for advanced test takers.

### 5.1.2 Effects of the T-CBWT on the writing process

Research questions 1b, 2b

*1b. Do the facilitative functions (thesaurus, translation, spell-check, grammar-check, self-reflective questions) in the T-CBWT have an effect on test takers' English writing process?*

*2b. Do the required multiple drafts in the T-CBWT have an effect on test takers' English writing process?*

Research question 1b was investigated by studying the frequency of usage of facilitative functions. Results revealed that throughout the writing process the spell-checker had the most influence on test takers' writing process followed by the grammar-checker. This should be due to the convenience and the instantaneous response of these two devices since they work automatically and immediately when an error occurs. Moreover, the spell-check device involves word-level knowledge, which is probably the least complex grammatical component to manage. Thus, it would be an easier task for the test taker to decide which word, as suggested by the spell-checker, is needed in the context. The grammar check device would require more knowledge of grammatical competence, however, available alternatives provided by the device could be chosen simply with a click of the mouse. Some test takers did report choosing any one of the suggested alternatives provided by the grammar-check function when they were at a loss on how to fix the error even though they were unsure of its accuracy.

It was discovered that a large majority of test takers from all levels did not make full use of the translation device (dictionary) or the thesaurus. When employed, the translation device was primarily used to verify the meaning of a word, mostly nouns and verbs, for completing a sentence or an idea once started.

Few used the translation device to look up the part of speech of words, adjectives or adverbs. As regards thesaurus, its use did not result in a “thesaurus effect” where unskilled writers substitute random synonyms to make their writing impressive. Some test takers who used the thesaurus reported being unsure of the meaning of the words listed and opted to play safe by using simpler words and expressions they knew, at times reflecting their ignorance of parts of speech and resulting in errors that led to ineffective essays.

The availability of the dictionary and thesaurus in the examination clearly was more important for test takers of the intermediate level who utilized them more than their counterparts did. Naturally, the translation and thesaurus functions required more knowledge of vocabulary (one of the grammatical competencies, according to Bachman, 1990) and more effort when utilizing it. Why test takers of the advanced and low-intermediate group used these two functions less may have been because test takers of the advanced level were confident in their knowledge of vocabulary while test takers of the low-intermediate level had too little knowledge of vocabulary to be able to use these two functions effectively.<sup>2</sup> Thus, findings in this study were contradictory to those of East (2006) who found that bilingual dictionaries were able to help lower ability writers, who were used to producing an extended piece of writing in examination conditions without the use of support resources, increase their range of lexical sophistication in a writing test situation. Because low-intermediate test takers writing processes in this study did not involve extensive use of the translation or thesaurus devices, they were unable to improve their vocabulary scores.

The Self-reflective Reminder Questions (SRQ) was the non-computerized facilitative feature that seemed to have no effect on the writing process, as test takers of all writing proficiency levels consulted the SRQ only to a very low degree. The main reason, as claimed by test takers when asked of their opinions on the T-CBWT, was that test takers had no time to work alongside the Self-reflective Reminder

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<sup>2</sup> From the verbal report, an interesting observation was made by a test taker who believed that classmates who were more proficient in English would be able to take better advantage of facilitative functions than those whose English was less proficient. (See Test taker G1INT19 in [Appendix V](#)) However, in general, findings from other sources of data confirm otherwise.

Questions, as they were preoccupied with completing the task, which was their priority. The majority of test takers were found to go through the checklist only after completing the writing task, leaving no extra time to revise or edit according to suggestions on the SRQ checklist. Interestingly, a majority of writers checked the items on the checklist quite accurately, reflecting their ability to evaluate their own writing. For instance, many test takers were well aware of not addressing the audience with appropriate language (Appendix M Item 10 on the SRQ checklist) or not generating adequate details (Appendix M Item 12). In sum, the self-reflective reminder questions may not have been influential as test takers were carrying out the task, rather served as a learning tool for reflecting on their own writing after the task was complete. Had more time been allowed, test takers might have been able to work on improving their writing, as ESL writing experts agree that time is a key factor in increasing the effectiveness of revision in second language writing (e.g. Hamp-Lyons, 2000; Leki, 1992; Silva, 1993; Weigle, 2002). Furthermore, time is an element that allows test takers to stand back from their work and look at it with fresh eyes, as White and Arndt (1991) have suggested through their framework.

Research question 2b, "Do the required multiple drafts in the T-CBWT have an effect on test takers' English writing process?" was investigated mainly through textual analysis from written drafts of nine randomly selected test takers representing Test Groups 1 and 2 at writing proficiency levels. The imposed multiple draft writing clearly affected the writing process for certain individuals more than others. This is evident through textual analyses carried out on test takers' drafts and tracked changes showing that some test takers strictly followed the requirements by writing on the 1<sup>st</sup> draft, revising content and organization on the 2<sup>nd</sup> draft and editing language, grammar and mechanics on the 3<sup>rd</sup> draft (e.g. writer G1INT23, G2INT56).

As expected, those who strictly followed this required drafting pattern were also found to write in a recursive manner. To illustrate, these test takers generated their ideas and saved a copy as their first draft. Then, on the second draft, they worked mainly on the development of content but did not ignore any language or grammar-related aspects they may have come across. On their third draft, they concentrated more on language and grammar and at the same time added content



for clarification purposes as they deemed necessary. Contrary to some studies that conclude that unskilled writers often write in a non-recursive or linear manner (Schwartz, 1983; Williamson and Pence, 1989), this study found that a majority of writers at all proficiency levels were involved in non-linear writing processes. This finding is consistent with that of Kim (2002) who also found her high and low performing test takers employing a non-linear writing process which were likely due to the convenience that the computer word processing has to offer (e.g. cut and paste, scrolling up and down).

With the help of the Track Changes device, some test takers were found to produce only one draft or two drafts with a few surface changes, not strictly following the required drafting pattern. This is not to say that their writing process involved no revision in the targeted aspects (content, organization or language). Previous research has pointed to the conclusion that writers who use word-processing systems revise mainly within a local context (Haas, 1989; Lutz, 1987; Severinson Eklundh, 1992) and that word processors facilitated only superficial revisions, not higher-level revisions that might help improve the quality of essays (Daiute, 1986; Harris, 1985; Hawisher, 1987). This would suggest that test takers whose drafts showed mainly surface-related changes may have been affected by working on the computer.

More plausibly, test takers may have revised in a recursive style within one draft, rendering the Track changes device unable to pinpoint any changes made. Questionnaire data also confirmed that the majority of test takers composes and revises simultaneously (See [Section 5.1.3 Page 218](#)). The findings of this part of the research would then lend support to studies carried out by Lutz (1987), Williamson and Pence (1989) who have suggested that the use of computer for writing effects writing patterns. Williamson and Pence (1989) maintain that working on the computer for certain individuals may result in a recursive revising style or nonlinear writing style. Lutz (1987) further explains that writing on the computer enables one to move back and forth freely and more frequently within the text, making it convenient for them to revise in a recursive manner.

Another aspect found in relation to test takers' writing processes was the type of changes test takers performed in each of their drafts. Textual analyses allowed the researcher to gain insights into the ways test takers worked to improve their essays.



Prior to examining the revision changes in detail, the proportion of the types of revisions made by all three writing proficiency levels was calculated. Contrary to Tagong (1991) whose study revealed that subjects made most revisions at the Meaning-preserving level, in the current study, it was found that in general, test takers made as many Meaning-preserving changes as they did Text-based changes or Microstructure changes. Advanced writers performed mainly Microstructure changes, followed by Meaning-preserving changes, Surface changes and Organizational changes. Intermediate writers performed Meaning-preserving changes the most, followed by Microstructure changes, Surface changes and Organizational changes. Low-intermediate writers followed a similar trend as that of the Advanced level writers, making mostly Microstructure changes, followed by Meaning-preserving changes, Surface changes, and Organizational Changes. On average, intermediate writers made more revision changes, followed by low-intermediate writers and advanced writers. Contrary to expectations that test takers of the advanced writing proficiency level would make more revision changes, it is seen from this part of the study that intermediate and low intermediate writers made more changes. It would in fact thrill instructors to know of these test takers' attempts to improve the quality of their essays, whether finally successful or not. In fact, it would be reasonable to see test takers from these two groups exert more effort into improving their drafts.

The proportion of positive changes<sup>3</sup>, negative changes<sup>4</sup> and neutral changes<sup>5</sup> made by test takers of all levels were also computed. Overall, test takers from the advanced writing proficiency level made the fewest negative changes, followed by intermediate writers. Low intermediate writers made the most negative changes to their drafts. Although low intermediate test takers made the most negative changes to their drafts than that of their counterparts, it is only because they have also made more corrections to their drafts than test takers of the other two levels. Contrary to Kim (2002: 122) whose findings reveal that low performing test takers' grammatical changes were often incorrect, the revision changes made to grammar of the low

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<sup>3</sup> Changes that improve the quality of the text

<sup>4</sup> Changes that worsen the quality of the text

<sup>5</sup> Changes that neither improve nor worsen the quality of the text

intermediate test takers in this study were for the most part correctly made (See [Appendix X](#) Figure 4). It appears that these test takers were cautious of the revision changes they made; only when they were confident in their changes would they proceed to correct them. Nevertheless, they were also left with many uncorrected grammatical errors.

The overall interpretation of the data in this part is that an effective essay does not necessarily stem only from countless revision changes, rather the quality of changes - whether or not the change is grammatical, has a clarifying effect, or adds substance to the content - and the quantity of these changes. For instance, although revision changes are all grammatical, if they are all Meaning-preserving changes or surface changes that do not contribute to the content, the changes might not improve the overall effectiveness of the text. This supports Faigley and Witte's (1981) who have concluded that "successful revision results not from the number of changes a writer makes but to the degree to which revision changes bring a text closer to fitting the demands of the situation" (ibid: 411).

With regard to Microstructure changes (content or meaning-related changes), it was found that MIC Additions at the sentence and clause level, rather than those at the phrase or word level, were especially instrumental in substantiating essays. This type of revision change was common among certain test takers of the advanced, intermediate and low-intermediate levels (in Test Groups 1 and 2) who were able to increase their overall scores dramatically. Very few of these sentence-level MIC Additions were apparent in essays of those whose overall writing performance did not improve. Some test takers made abundant MIC Additions at the phrase and word level that did not aid in increasing the substance of the content. This is only partially in line with previous research carried out by Cumming (1989) who found that proficient writers seem to use a knowledge-telling model, while less proficient writers concentrate more on decisions made at the word and phrase level. In the current study, however, several less-proficient writers did in fact concentrate on content (e.g. G1LINT29, G2LINT70).

Those who concentrated on generating content in this study included those from the intermediate and low-intermediate writing proficiency levels. This is in line with Porte's (1996) findings which indicate that underachievers' revisions do attend to meaning despite being low in frequency. Porte (1996) hypothesizes that this is

because text-based revision is not prioritized for these learners due to their past experiences and perceived opinions about the writing context, rather than because they were incapable of revising for meaning. In the current study, the researcher assumes that a number of variables such as the imposed drafts, these subjects' ongoing development or determination, the subjects' familiarity with the topic or other situational variables, as Faigley and Witte (1981: 410) have established, play a role in prompting these low achievers to generate more content. Again, as discussed earlier in the chapter, the findings in this part point to Cummings' (1989) conclusion that the characteristics of writing expertise is not always directly related to second language proficiency but to the discourse organization and content, the attention to complex aspects of writing, problem-solving behaviors involving and strategies (ibid). It was observed in this study that even test takers of the low-intermediate and intermediate writing proficiency levels showed signs of improvement due to the attention given to discourse organization and content.

With relation to organizational changes, they were not prevalent in the essays analyzed. This finding contradicts the findings of H.K. Lee (2004) who found that organization was enhanced when writing on the computer. In H.K. Lee's study, however, volunteer subjects were graduate students who were relatively proficient in the language. However, findings in the current study do coincide with that of Kim (2002) who also observed few organizational changes made by test takers in her study. This finding may have been due to the test taking environment where test takers felt pressured with time, or that they viewed that the organization of their essays were acceptable. Interestingly, the few test takers who did work on organizational changes belonged to the 'with drafts' test condition. Only one writer, from the intermediate level (G2INT56), performed serious organizational changes at both local and global levels, closely conforming to the rhetorical standard of American English, where the most salient point is stated last (Liu, 2005: 10). Many other test takers, on the other hand, organized their essays in such a way that their most salient point was stated first.

Of all the Meaning-preserving changes, the most effective type was the MPC Additions at the clause or sentence level, which may not have added on massively to the overall content of the essay but served to effectively modify and clarify ideas. However, such MPC Additions were rare; only a few test takers (e.g. G2INT56) were

found to produce MPC Additions. The most common type of Meaning-preserving change was the MPC Substitution (See [Appendix X](#) Figure 2). Thus, this finding is consistent with Kubota (2002) who found that students often resort to reduction rather than elaboration for their error correction. In Kubota's study, many examples were found where students simply deleted the sentences that contained errors, or replaced sophisticated words with simpler words, improving correctness at the expense of their creativity. In this study, test takers were also found to substitute longer phrases with shorter ones but not necessarily for the purpose of correcting errors, rather to clarify or simply to rephrase.

In relation to Surface Changes, surprisingly test takers who performed more Formal Changes (and Meaning-preserving changes) on average were those who belonged to the 'with draft' test condition, even though test takers of the 'with facilitative functions and drafts' had advantage over their counterpart in terms of the computerized tools they were equipped with. There were particular types of Surface changes that emerged from the textual analysis, namely grammar-driven surface changes and word-level substitute changes. The majority of grammar changes were cosmetic-related (spelling, format, punctuation). Very few were related to verb-tense, modals, aspect, determiners, prepositions or part of speech, aspects which determine the level of English proficiency. Any word-level substitute changes evident served two purposes, first to avoid using the same word twice and second to transform the words into more academic ones. Very few were identified as the latter. In effect, from the stimulated retrospective interviews, a number of test takers (e.g. G2LINT69, G2INT56, G3ADV84) reported opting for words they already knew (See [Appendix V](#)).

In sum, the required multiple drafts did have some effect on test takers writing process to a certain extent. The effect seemed to be positive rather than negative. Obviously, it cannot be concluded that revision changes during the writing process would not have taken place without the imposed drafts. However, we cannot overlook the fact that with the structured requirement to produce drafts, test takers were made to focus their attention to revising their work in a relatively systematic manner.



### 5.1.3 Test takers' computer writing behavior

*Research question 4a: What are the computer writing behaviors of the participants?*

Results from questionnaires revealed that in **non-test situations** subjects in general are familiar with using the MS Word to type in English to some extent. However, subjects of the low-intermediate level use the MS Word to write in English markedly less. In terms of facilitative functions, subjects may not be adept or even familiar with all the functions available on the MS Word, as it appears they seldom make use of all the functions in normal writing situations, save for the spell-check and grammar-check functions. For the grammar check function, many subjects may not know which suggested alternative to choose or understand suggestions given by this function (e.g. "fragment-consider revising"). The MS Word Dictionary or Translation function and the MS Word Thesaurus are hardly ever utilized in a non-test situation. The above writing behaviors suggest that subjects are in fact not sufficiently exposed to English writing on computers in non-test situations. Though the majority of subjects are computer-literate, they have not been extensively exposed to writing in English on the computer which is considered a different computer-based skill from what they are acquainted with.

When writing in a non-test writing situation, subjects for the most part claimed to be usually aware of the characteristics of a good essay but might not often remind themselves when they are engaged in the writing task. Subjects would sometimes check and revise content, organization and language use but do not often check and edit their grammar. They check and edit mechanics even to a lesser frequency. For all types of revisions (on content, organization and language), subjects of the low-intermediate level make changes to improve their essay the least frequently. These writing behaviors might be due to these subjects' limited ability in the target language and/or a low level of motivation. This may also suggest that in classroom settings subjects may not be adequately encouraged to extensively revise or edit their writing.

In **test situations**, results from questionnaires revealed that in relation to prewriting and during-writing behavior, the majority of test takers of the advanced and intermediate levels create their outline on paper. Many of them create mental outlines and some type their essays directly onto the computer without writing an outline. None of them writes their essays on paper first before typing onto the



computer. Unlike their counterparts, the majority of test takers of the low intermediate level prefer creating mental outlines to writing a visual outline on paper before writing on the computer. Many of them write their essays directly onto the computer without an outline. A few of them write their outlines directly on to the computer, while a couple of them transfer written essays from paper to the computer. From the interview, one test taker (G2LINT69) reported brainstorming for vocabulary before anything else. Due to time constraints in a test situation, it seems that most test takers of the low-intermediate group choose to prioritize their tasks, dedicating most of the time available to the production of the entire essay. Although the test method requires test takers to produce outlines and drafts, these subtasks are only secondary. Thus, the fact that most writers of this level do not produce visually structured outlines would suggest that their planning consists of brainstorming for words to use and what to say possibly in their mother tongue, taking time to organize their thoughts and translate them but choosing to jump directly into the main task of producing an essay of 350 words which in most cases will take up a lot of time for writers of this level. Had they been given extra time, their outlines might have materialized. That many less-skilled writers did not produce visual outlines in this study also corresponds to Raimes (1987) who found in her study that very little articulated planning was carried out among L2 writers.

As regards post-writing behavior, test takers of all levels followed a similar trend. The majority of test takers from all three levels compose and revise simultaneously then revise one final time before submitting the essay. Many test takers compose and revise simultaneously before turning in the essay. A few finish composing the entire essay first before revising only once at the end. This reconfirms the findings from the textual analysis and supports Raimes (1985) who established that basic writers write and revise recursively.

Concerning editing sequence, data reveals that the majority of test takers within all three writing proficiency levels edit randomly rather than sequentially. This is consistent with previous research by Raimes (1987) who found that revising and editing for L2 writers is not a "clean-up operation" that was carried out after the entire process of writing, rather one that happens while ideas are being generated. This is found to be especially true for EFL test takers, as they have been found to construct a sentence, revising and perfecting it simultaneously.

Verbal reports revealed test takers writing strategies consist of the planning (or goal setting as proposed by Bachman and Palmer (1996) as being the strategic competence used in test situations), writing and proofreading stages. These processes have been established in previous research (e.g. Flower and Hayes, 1981). In the current study, planning style varied depending on the approach of the individual. Some test takers preferred to start with a clear and structured plan or to begin with only brief ideas that are to be expanded as they write. This was reflected in how they attended to outlines; either long detailed outlines or shorter and simpler ones were produced. Interestingly, this was reflected the individual's strategy and time management, which is a crucial issue in a test situation. From observations, it was the intention of some individuals to spend less time on planning; leaving more time for writing in which case, they would brainstorm only for main ideas and supply details as they write. For low intermediate writers, however, it appeared that limited knowledge of vocabulary prevented them from creating a detailed outline. These test takers seemed to be forced to begin the writing task straight away, having no time to lose.

During this planning stage, strategies employed were both Cognitive (Generating ideas, Retrieval and Rehearsal sub-strategies) and Metacognitive (Planning sub-strategy). Rhetorical strategies (Organization, Formatting/Modeling sub-strategies) were also used when writers began to organize ideas into an overall structure. The Social affective strategies (Resourcing and Rest/deferral sub-strategies) were employed when they repeatedly referred to the translated words provided in the prompt. This strategy was used most often by low-intermediate writers. One test taker (G3ADV84) reported referring back to the prompt time and again in case more ideas would pop-up (See [Appendix V](#)). This finding supports Moragne e Silva (1993) who reported that L2 writers spend more time referring back to the prompt.

For the writing stage, evidence was not substantial enough to conclude whether any particular writing strategy was employed more among test takers of a specific writing proficiency level. It was noted, however, that test takers managed the writing test task differently dictating the strategies they would be using throughout the writing stage. Test takers who did not have a clear outline or plan, improvised more, generating ideas, rehearsing and elaborating as they wrote.

Findings in this part are consistent with Campbell, 1987 and Yau, 1989 who reported that most L2 writers did less planning at the global and local levels and with Hall (1990) and Moragne e Silva (1989) who stated that second language writers spend more time on generating material. Other test takers who started with a detailed plan concentrated more on structuring their sentences and organizing during the writing stage. Whereas the Resourcing and Monitoring sub-strategies were prompted by the spell-check and grammar-check functions when the red or green underlines appeared, the Resourcing sub-strategy was seldom self-initiated for using the Translation (dictionary), Thesaurus or the Self-reflective reminder questions. The language used during the writing process relatively depended on the test taker's background knowledge and experience with the target language, with low intermediate writers translating from their first language more than test takers of the other two levels.

The proofreading stage involved revising for content and organization as well as editing for grammatical errors and other mechanical mistakes, areas of which each writer gave different emphasis to. The proofreading stage encompassed the Metacognitive strategy (Evaluating sub-strategy) and the Cognitive strategy (e.g. Clarification sub-strategy) in addition to those employed during the writing stage (Cognitive strategies - Generating ideas, Elaborating, Retrieval, and Rehearsing; Metacognitive strategies - Monitoring; Rhetorical strategies - Organization and Use of L1; Communicative strategies - Avoidance, Reduction and Sense of readers; Social/affective strategies -Resourcing and Getting feedback). Test takers often made changes based on what they thought 'sounded' strange, trying to make it 'sound' better or smoother, using the Communicative strategy. This contradicts with findings of Yao (1989) who found that L2 writers made less "revising by ear" as cited by Silva, 1993: 662) or changes based on what sounds good. As test takers in this stage made changes to both content and language, the researcher took the liberty to add an "Editing-sub-strategy" (an additional Cognitive strategy) to Mu's (2005) taxonomy to describe changes made specifically to the language that was used extensively in this phase of test taker composition.

In sum, given 90-minutes in this test situation, 60 minutes more compared to a normal test of the same quality, the element of time still, unquestionably, influenced how test takers worked. Some test takers seemed to have not kept track

of time that no time remained for proofreading. However, for some, not allocating time for proofreading was in fact a strategy adopted, as some writers preferred to revise and edit as they wrote, working in a recursive manner. These test takers reported working recursively, writing, revising and editing as they progressed, yielding the proofreading stage virtually non-existent. Test takers also reported making changes to their essays differently for various reasons. Some concentrated more on surface changes, satisfied with the content they had, while some reported not knowing how they could further develop their content. Conversely, others emphasized more on content maintaining that they were oblivious to any grammatical errors they have made. It is inconclusive of what strategies are used more or less among writers of different writing proficiency levels. From the results of this study, it seems that writers of all levels do use a variety of all strategies to a different extent.

#### **5.1.4 Participants opinions towards the T-CBWT**

*Research question 4b. What are the participants' opinions towards the T-CBWT?*

Results from frequency count questionnaire and open-ended questions reveal that in general, test takers had positive views towards the T-CBWT as a measure of writing ability. The majority of subjects shared positive views towards the clarity of test instructions, the clarity of the orientation prior to the test, the simplicity of the procedures, the preference of using computers for writing, the time allotment, the ability of the T-CBWT to measure writing skills, and the desire to take this type of test again.

The majority of test takers also had positive views towards the facilitative functions available to them and felt that they should be included as part of the features offered during a writing test. However, a number of test takers felt that self-reflective reminder questions were not useful. Some explained that applying the self-reflective reminder questions to their writing during a test is time consuming, as it contained too many detailed questions and the test takers should already know such questions prior to taking a writing test. This may suggest that test takers perceive a writing test in a traditional light, where resources should not be provided during the task.



With respect to required multiple drafts, the majority of test takers felt that the requirement provided a chance for them to draft during the writing test in a systematic way and to evaluate their writing. They feel that drafting several times helped them produce the best essay possible. However, many subjects suggested that the writing test should require fewer than three drafts. This would suggest that test takers are still not acquainted with draft writing and some have mentioned not liking drafts.

Test takers for the most part felt they could write better on the T-CBWT because of the available helping functions and required drafts. The majority of test takers showed interest in taking the T-CBWT again in the future. The four most frequent reasons of those who do not opt for a T-CBWT were that they were not familiar with the test method; their typing skills were an obstacle to performing well on the test; using the computer caused eye-strain; and the procedures of drafting took up too much time. Conversely, the remaining examinees (86.1%) do choose to take the T-CBWT again in the future. The top five reasons are: (1) the MS Word processor provides convenience in producing essays; (2) using the word processor helps save resources; (3) the facilitative functions are helpful; (4) drafting is helpful; and (5) the T-CBWT is good practice and learning experience that can be applied to real life. Similar to the findings of Sapsirin (2006), whose subjects also showed positive attitudes towards the computer-based test, the general positive outlook towards the T-CBWT provides evidence to contradict the concern that computer-based assessment may negatively influence test takers' views of a language test (Chapelle, 2001; Dunkel, 1999).

## 5.2. Implications

Theoretically, the findings of this study confirm established models of writing processes (Flower and Hayes, 1981; Bereiter and Scardamalia, 1987; Hayes, Flower, Schriver, Astratman, and Carey, 1987) which emphasize the recursive nature of the writing process. The recursive nature of writing was prevalent in the writing processes seen in this computer-based writing test situation, since the convenience of the computer word processor allowed test takers to freely scroll up and down to make changes with the cut and paste functions. Findings related to writing processes and strategies in this study have also confirmed and supported those of



various studies which look into composing processes (e.g. Daiute, 1986; Hall, 1990; Harris, 1985; Hawisher, 1987; Yau, 1989). As a comprehensive theory of L2 writing does not yet exist, findings in this study can only serve as supporting evidence to a prospective theory and point to practical implications for the assessment of writing as well as writing instruction particularly for the EFL context.

### 5.2.1. Implications for assessment

We might be reminded as we near the conclusion of this study that part of the main intentions of the test taker-centered computer-based writing test is to address the issues of fairness (bias for best), positive impact, and that test takers would be able to learn from the test taking experience. Based on triangulated evidence from the study, it seems that we cannot underestimate the small effect of required draft writing on revision quality or the effect of facilitative features, even if only, on mechanic scores in this particular test situation. Evidence pointed to several test takers who were prompted to focus on improving their finished product with every draft they wrote; some being prompted, even if as a mere reaction, by the spell-check and grammar-check features, to check their spelling and correct their errors. Evidence also revealed a couple of test takers using the dictionary and thesaurus to look up the part of speech of words as well as test takers from three proficiency levels making dramatic improvements on their drafts by making effective text-based changes. With these small yet positive instances, we may be able to state that the T-CBWT is on its way to meet its purposes. This is coupled with the positive outlook that test takers had towards taking a writing test in this mode and the findings, which revealed that test takers in general were able to produce essays at the required length within the given time. Thus, the researcher is confident that both facilitative features and required drafts remained incorporated in a computer-based writing test would serve to be beneficial rather than harmful.

Two issues of no less importance have to do with the supply of translated key words given in the prompts and time allotment. The researcher as well as test takers find it fair to provide a few translated keywords during a writing test as well as additional time. As Lewkowitz (1997 as cited in Weigle, 2002: 68) has found that providing a stimulus text provided test takers with ideas but did not improve the quality of writing, supplying only translated keywords along with the short prompt

was helpful and sufficient for test takers who were required to provide their own ideas.

Regarding time allotment, it seems that for a writing task such as the one in the current study, 90-minutes is sufficient. With the aid of the MS Word processor, most test takers who were required to produce outlines and drafts were able to do so within the time limit. However, some test takers, especially low intermediate writers did feel rushed due to time overspent on planning. Should test takers become more familiar with this type of testing format, they might be better able to manage their time. Thus, these two components of translated keywords and time are especially vital for EFL writers, even more so in a test situation.

Considering that this writing test makes use of computerized tools that are easily available in many educational institutions (MS Word processor), with some adjustments (such as increasing time allotment, decreasing the number of drafts required, or incorporating a prompting program similar to that used in the study of Diaute, 1986) the T-CBWT could initially be administered as a formative test. This would familiarize EFL learners with this type of assessment. Long-term implementation of such a test could provide more evidence of the validity and impact of the test. Only then might we want to re-consider using an improved T-CBWT as a test for other purposes.

### **5.2.2 Implications for instruction**

The pedagogical implications that are derived from this study are mainly related to writing and computer assisted language learning. With relation to writing, EFL learners seems to necessitate more than simply writing lessons. Firstly, these learners might well benefit from general consciousness-raising with regard to the importance of content in EFL writing, as subjects in this group have voiced their lack of knowledge on how to revise for content. Special care would thus be needed to monitor how learners are receiving input or feedback, particularly if the previous or current language-learning culture tends to equate quality writing with correctness of surface structures. Thus, along with writing, EFL learners would be needing more stimuli or input found in reading activities that would enrich their world and word knowledge, supplying them with vocabulary that may come in handy with their

writing. Thorough planning prior to writing might be exercised in the classroom, with sessions of brainstorming for ideas and content to get the EFL learner used to these planning processes as part of good writing practice. Moreover, without sacrificing instructor feedback on structure and form, the importance of feedback or comments in the way of content might also be highlighted.

Consciousness-raising may also be focused on the importance of revision and the types of revisions that would have an effect of improving the overall quality of their writing. For instance, EFL learners could be trained to try out more meaning-related and sentence-level changes in addition to the word level changes they make. They might be introduced to several types of rhetorical styles according to the target audience/culture and trained to organize essays according to a variety of rhetorical styles. They might also be trained to maintain creativity in their writing while improving their accuracy. All this could be accompanied by scores awarded to learners' revised drafts in addition to the scores they receive for their final draft.

There also seems to be a need to provide focused and on-going training to EFL learners in the accurate use of the dictionary. It may be suggested that such training take place for an extended period so that learners may be able to appreciate the benefits they receive from being able to take full advantage of dictionary look-ups, for instance, to help them with part of speech or adjectives and adverbs, which they can make use of during writing. Dictionary skills are also encouraged to be taught at the primary and the secondary school levels to meet the needs of students at different phases of EFL learning. This knowledge and frequent practice of looking up words from the dictionary will potentially lead these learners to the look-up of the thesaurus.

Some implications with respect to monitoring problems with learning have emerged from the findings of this study. It appears that test takers showed problems with monitoring skills. For instance, when proofreading, some test takers read to see if parts of the text sounded right, rather than making separate checks for possible grammatical errors. This issue would require the instructor to train EFL learners to monitor their own work, in addition to lessons on grammar. Furthermore, instructors might want to find ways to familiarize learners with self-monitoring or self-regulation and the notion that evaluation is an ongoing process. When teaching

writing, evaluation can be given to assist students step by step throughout the writing process and not only in the end when the final product is complete.

In terms of computer-assisted language learning, EFL learners might be exposed to the computer more for writing activities. Websites with lessons and creative ways to learn grammar, writing as well as typing are available for learners. Having EFL learners write on the computer as much as possible would not only help them become familiar with English typing, but would also boost their confidence for when they have to use the computer for writing in English. Moreover, having learners frequently use the MS Word processor and the tools that come with the program incorporates writing practice with typing skills, enhancing both English and typing skills that they might require for future testing purposes.

### **5.3 Recommendations for further research**

I believe that this small-scale study raises a number of issues that warrant further investigation. The sample size studied would be considered limited and the procedures used in this study have been explorative, thus the results of this study should be regarded as preliminary and it should be acknowledged that the results of this study may not be generalized to larger populations of EFL writers. Accordingly, a second more experimental research perspective may replace the current one to include a larger population and sample size. Since evidence from this study seems to indicate that the T-CBWT has potential in positively affecting the writing performance of test takers in certain aspects, further research solving the limitations of the current study should result in different and more significant findings. This might be carried out in several ways.

Firstly, extensive training on using MS Word features, coaching on self-evaluation and revision strategies prior to the implementation of a similar computer-based writing test might yield different and valid findings on how these factors would affect writing in a computer-based test situation. Careful attention must be made, though, on possible practice effects that may come into play and exaggerate test takers' performance.

In addition, evidence from this study indicated an effect of imposed drafts on improved Content scores among advanced test takers. This would seem to indicate



that an imposed drafting session of a structured nature is worthy of closer attention for what it can reveal about revision strategies in relation to content or meaning related changes made on drafts, and more importantly on how test takers are able to perform to the best of their ability in that particular setting. Although some may argue that more time for reflection would be needed between drafts, in this particular test situation, the prescribed drafts act as more of a technique, rather than a write-and-reflect type task. To recap, the three drafts serve three purposes: (1) to put ideas down in writing (2) to work on improving content and organize (3) to work on improving language. As the task requires the test taker to write a 350-word essay, rather than a longer composition or term paper and test takers use the MS Word processor to aid with cut and paste options, additional time might not be necessary. On the other hand, the drafting technique may serve as a tool for test takers to work on their paper in systematic way. Therefore, in-depth studies into the way this imposed drafting technique affects test takers' performance is needed to further reveal how it can be established as a test method in writing.

Further, tests in this study may have shown no correlation between typing speed and writing scores/number of words typed, suggesting that slow typists were still capable of producing a draft of the required length. However, that a number of test takers reported being unable to perform well on the test due to their poor typing skills also suggests that the extended time these test takers could have spent on improving their essay was lost to keyboarding obstacles. Therefore, in a future study, participants might receive formal instruction and training in keyboarding to achieve what Perkins (1985) calls the "first-order fingertip effect" prior to participating in the study. Quicker typing skills of future research participants may yield different research outcomes.

Time allotment is a relevant topic that deserves further examination especially for test takers of the low-intermediate writing proficiency level. If a test were to be individualized, how test administrators can allow additional time allotment for less proficient writers is worthy of close attention. It would be both interesting and important to know whether test takers of this group being provided with extra time would indeed help them perform better.

Another issue concerns the approach used in monitoring writing behavior during the tests. In addition to using Track changes, a more accurate approach must



be carried out to monitor writing behavior or sequences of writing processes carried out on the computer during a test, for instance, the use of stricter verbal protocols with video tapes, web cameras or other advanced technologies that allow monitor recording. This must also be accompanied by an adequate approach to analyze the results and other statistical procedures to reach a more accurate interpretation of data gathered as well as to result in more reliable and generalizable findings.

Moreover, a similar study controlling for English language proficiency might yield different results. Alternatively, how participants' past experience with writing or their beliefs about writing shape their engagement in the writing process during the assessment informs future studies in this area. Further research might also concentrate on other types of rhetorical styles besides the argumentative type, such as the descriptive or narrative styles of writing. Studies into the effect of topic choice, number of drafts, or different amounts of time provided on test takers' writing performance would also be interesting.

Another important issue directly relevant to this study is the washback effect that this type of test taker-centered test would have on the teaching and learning of writing. As Weigle (2002: 55) stated, the design of the test itself cannot guarantee positive washback since there are a variety of factors outside the test that may affect washback. However, there are ways that test developers can promote positive impact. Bachman and Palmer (1996 as cited in Weigle, 2002: 55) have noted that test takers can be affected by three aspects of testing procedures, including the experience of preparing for and taking the test, the feedback they receive about their performance, and the decisions made on the basis of their test results. Thus, in order to maximize positive impact, it is suggested by Bachman and Palmer (1996) to consider how test takers perceive the test, how accurate and informative the feedback they receive is, and how to maximize the accuracy of the test scores so that decisions are fair and appropriate. Thus, it would be interesting to see the outcome of a longitudinal study that concerns impact in relation to these factors.

#### **5.4 Closing remarks**

The current study has attempted to find middle ground in the way writing can be assessed, particularly middle ground between product oriented-writing

assessment (no resources, single-draft, severely-timed) and process-oriented writing assessment (portfolio-approach or workshop-based). Being on a continuum between product and process oriented writing tests, the test taker-centered computer-based writing test was able to address issues of authenticity, fairness and individualization of writing assessment to meet test users as well as test takers halfway. The primary implementation of the test taker-centered computer-based writing test in this study was also found to be a successful attempt to help test takers learn from the experience, as test takers<sup>6</sup> did report learning from the test.

Nevertheless, it is not in any way intended that the test taker-centered computer-based writing test be the ultimate answer to writing assessment. It is hoped rather that the findings and implications of the present study provide useful information to further develop and validate computer-based writing tests that would be fair, authentic and as test taker-friendly as can be in order that EFL test takers can demonstrate their writing skills to the best of their ability.



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<sup>6</sup> (See, for example, G1INT19, G1LINT35, G2ADV45, G2INT56, G3INT88, G4ADV114 in [Appendix V](#).)

## REFERENCES

### Thai\*

- กัลยา วานิชย์บัญชา (๒๕๔๙) การวิเคราะห์สถิติขั้นสูงด้วย SPSS for Windows. กรุงเทพฯ:ธรรมสาร.  
[Kalaya Vanichbuncha (2006). *Advanced Analysis with SPSS for Windows*. Bangkok: Thammasarn.]
- กัลยา วานิชย์บัญชา (๒๕๕๐) การใช้ SPSS for Windows ในการวิเคราะห์ข้อมูล. ภาควิชาสถิติ คณะ  
พาณิชยศาสตร์และการบัญชี จุฬาลงกรณ์มหาวิทยาลัย [Kalaya Vanichbuncha (2007).  
*Using SPSS for Windows to Analyze Data*. Bangkok: Statistics Department  
Chulalongkorn University.]
- เพ็ญแข สิริวรรณ (๒๕๔๖) สถิติเพื่อการวิจัยโดยใช้คอมพิวเตอร์ (SPSS Version 10.0) พิมพ์ครั้งที่สอง  
กรุงเทพฯ: บจก. เท็กซ์ แอนด์ เจอร์นัลพับลิเคชัน.. [Penkhae Siriwan (2003) *Statistics for  
Research Using the Computer (SPSS Version 10.0) 2<sup>nd</sup> edition*. Bangkok: Text and  
Journal Publication.]
- รังสรรค์ ไดมยา (๒๕๔๘) สเกลคู่ มิติใหม่ในการใช้แบบวัดมาตราส่วนประมาณค่าแบบลิเคิร์ตแหล่งที่มา:  
<http://www.edu.msu.ac.th/newweb/news/Likert.pdf> [Rungson  
Chomeya (2005). Even-numbered scale: a new dimension in Likert-scale  
measurement. Retrieved April 19, 2008 from  
[http://www.edu.msu.ac.th/Rungson/data/4%20or%206-  
Point%20Likert%20Type%20Scale.pdf](http://www.edu.msu.ac.th/Rungson/data/4%20or%206-Point%20Likert%20Type%20Scale.pdf)]
- ศิริชัย พงษ์วิชัย (๒๕๔๘) การวิเคราะห์ข้อมูลทางสถิติด้วยคอมพิวเตอร์ พิมพ์ครั้งที่ ๑๕. กรุงเทพฯ:  
สำนักพิมพ์แห่งจุฬาลงกรณ์มหาวิทยาลัย. [Sirichai Pongwichai (2005). *Statistical  
Analysis Using the Computer 15<sup>th</sup> Edition*. Bangkok: Chulalongkorn University  
Press.]
- สุพัฒน์ สุขมอลสันต์ (๒๕๔๗) การวิเคราะห์ข้อสอบแบบอัตนัยรายข้อ. *ภาษาปริทัศน์* ๒๑: ๔๔-๕๕.  
[Suphat Sukamolson (2004). Analyzing subjective test items. *Pasaa Paritat*  
21: 44-55.]

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\* The English translations provided in brackets are only for the purpose of comprehension. With the exception of the authors' names and publishers, the names of the original sources (books or articles) might not be found in English.

## English

- Akyel, A., & Kamisli, S. (1999). Word processing in the EFL classroom: Effects on writing strategies, attitudes, and products. In M. C. Pennington (Ed.). *Writing in an electronic medium: Research with language learners* (pp. 27-60). Houston: Athelstan.
- Al-Amer, A.S. (2000). *The effects of word processing use on textual revision across languages: Arabic as a first language and English as a second language (ESL)*. (Doctoral dissertation, Michigan State University, USA, 2000) Retrieved August 23, 2007 from ProQuest database: <http://proquest.umi.com/pqdweb?did=727738571&sied=3&Fmt=2&clientId=437> Publication Number: AAT 9985345. ProQuest document ID: 727738571
- Alderson, C.J. (1990). Learner-centered testing through computers: Institutional issues in individual assessment. In J.H.A. de Jong & D.K. Stevenson (Eds.). *Individualizing the Assessment of Language Abilities*. Clevedon, PA: Multilingual Matters.
- American Psychological Association (1985). *Ethical principles in the conduct of research with human participants*. Washington, DC: American Psychological Association.
- Applebee, A.N. (1986). Problems in process approaches: Toward a reconceptualization of process instruction. In A.R. Petrosky & D. Bartholomae (Eds.). *The Teaching of Writing: Eighty-fifth yearbook of the National Society for the Study of Education, Part II* (pp.95-113). Chicago: National Society for the Study of Education.
- Arndt, V. (1987). Six writers in search of texts: A protocol-based study of L1 and L2 writing. *ELT Journal*, 41, 257-267.
- Atkinson, D. (2003). L2 writing in the post-process era: Introduction [Electronic version]. *Journal of Second Language Writing*, 12, 3-15.
- Bachman, L.F. (1990). *Fundamental Considerations in Language Testing*. Oxford: Oxford University Press.
- Bachman, L.F. (2000). What, if any, are the limits of our responsibility for fairness in language testing? In A.J. Kunnan (Ed.). *Fairness and Validation in Language Assessment: Selected Papers from the 19<sup>th</sup> Language testing Research Colloquium Orlando, Florida*. LA: California State University.
- Bachman, L. & Palmer, A.S. (1996). *Language Testing in Practice: Designing and Developing Useful Language Tests*. Hong Kong: Oxford University Press.
- Bailey, K. M. (1996). A review of the washback concept in language testing. *Language Testing*, 257-279.
- Baker, W. & Boonkit, K. (2004). Learning strategies in reading and writing: EAP Contexts. *RELC*, 35 (3), 299-328.

- Bean, J.C. (1983). Computerized word-processing as an aid to revision. *College Composition and Communication*, 34 (2), 146-148.
- Belanoff, P., & Dickinson, M. (1991). *Portfolios: Process and product*. Portsmouth, NH: Boyton/Cook.
- Benson, B. (1980). A qualitative analysis of language structures in compositions written by first and second language learners. *Dissertation Abstracts International*, 41 (5), 1984A.
- Benson, B., Deming, M., Denzer, D., & Valeri-Gold, M. (1992). A combined basic writing/English as a second language class: Melting pot of mishmash? *Journal of Basic Writing*, 11 (1), 58-59.
- Bensoussan, M., Sim, D. & Weiss, R. (1981). The effect of dictionary usage on EFL test performance compared with student and teacher attitudes and expectations. *Biannual Conference of the International Association of Applied Linguistics*. (ERIC Document No. ED 232 436).
- Bereiter, C. & Scardamalia, M. (1987). *The Psychology of Written Composition*. Hillsdale, N.J: Erlbaum.
- Berg, B.L. (2004). *Qualitative Research Methods for the Social Sciences*. Boston: Pearson.
- Biola, H.R. (1992). Time limits and topic assignments for essay tests. *Research in the Teaching of English*, 16, 97-98.
- Boring, E.G. (1953). A history of introspection. *Psychology Bulletin*, 50 (3), 169-189.
- Bosher, S. (1998). The composing process of three Southeast Asian writers at the post-secondary level: An exploratory study. *Journal of Second Language Writing*, 7 (2), 205-241.
- Bridgeman, B. (1980). Generality of a "fast" or "slow" test-taking style across a variety of cognitive tasks. *Journal of Educational Measurement*, 17, 211-217.
- Bridgeman, B., & Cooper, P. (1988). *Comparability of scores on word-processed and handwritten essays on the Graduate Management Admissions Test*. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA. Retrieved May 2006 from: "[http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content\\_storage\\_01/000000019b/80/30/10/59.pdf](http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/000000019b/80/30/10/59.pdf)"
- Bridwell, L. (1980). Revising strategies in twelfth grade students' transactional writing. *Research in the Teaching of English*, 14, 197-222.
- Bridwell-Bowles, L., Johnson, P., & Brehe, S. (1987). Composing and computers: Case studies of experienced writers. In A. Matsuhashi (Ed.). *Writing in real time: Modeling composing processes* (pp. 81-107). Norwood, NJ: Ablex.
- Brown, J.D. (1988). *Understanding Research in Second Language Learning: A teacher's guide to statistics and research design*. New York: Cambridge University Press.



- Burnett, R.E. (1994). *Technical Communication*. Belmont, C.A: Wadsworth.
- Campbell, C. (1987). *Writing with others' words: Native and non-native university students' use of information from a background reading text in academic compositions*. (ERIC Document Reproduction Service No. ED. 287315)
- Campbell, D.T. & Stanley, J.C. (1963). *Experimental and Quasi-experimental Design for Research*. Rand McNally College Publishing Company: Chicago.
- Canale, M. (1984). Testing in a communicative approach. In G.A. Jarvis (Ed.). *The Challenge for Excellence in Foreign Language Education*. (pp. 79-92). Middlebury, Vt.: The Northeast Conference Organization.
- Carroll, J.B. (1961). Fundamental considerations in testing for English language proficiency of foreign students. In *Testing the English Proficiency of Foreign Students*. Washington, DC: Center for Applied Linguistics: 30-40.
- Carson, J. G., & Longhini, A. (2002). Focusing on learning styles and strategies: A diary study in an immersion setting. *Language learning*, 52 (2), 401-438.
- Caudery, T. (1990). The validity of timed essay tests in the assessment of writing skills. *ELT Journal*, 44, 122-131.
- Cavanaugh, J. & Perlmutter, M. (1982). Metamemory: A critical examination. *Child Development*, 53, 11-28.
- Celce-Murcia, M. & Olshtain, E. (2000). *Discourse and Context in Language Teaching: A Guide for Language Teachers*. Cambridge University Press.
- Chadwick, S., & Bruce, N. (1989). The revision process in academic writing: From pen & paper to word processor. *Hong Kong Papers in Linguistics and Language Teaching*, 12.
- Chapelle, C. (2001). *Computer applications in second language acquisition: Foundations for teaching, testing, and research*. Cambridge, UK: Cambridge University Press.
- Chase, C. I. (1986). Essay test scoring: Interaction of relevant variables. *Journal of Educational Measurement*, 23, 33-41.
- Chen, Y. (2002). The problem of university EFL writing in Taiwan [Electronic version]. *The Korean TESOL Journal*, 5 (1), 1-22.
- Chinnawongs, S. (2001). In search of an optimal writing feedback strategy. *PASAA*, 31, July 2001, 27-43.
- Cho, Y. (2001). *Examining a process-oriented writing assessment in a large-scale ESL testing context*. Unpublished doctoral dissertation, Educational Psychology and SLATE, University of Illinois at Urbana-Champaign, USA.
- Cho, Y. (2003). Assessing Writing: Are We Bound by Only One Method? [Electronic version]. *Assessing Writing*. 8 (3), 165-191.

- Clark, G. (1990). *Dialogue, Dialect, and Conversation: A Social Perspective on the Function of Writing*. Carbondale: Southern Illinois University Press.
- Coakes, S.J. & Steed, L.G. (2001). *SPSS Analysis without Anguish: Version 10.0 for Windows*. Singapore: John Wiley & Sons Australia
- Cohen, A. D. (1998). *Strategies in learning and using a second language*. New York: Addison Wesley Longman.
- Cohen, A.D. & Scott, K. (1996). A synthesis of approaches to assign language learning strategies. In R. Oxford (Ed.). *Language Learning Strategies around the World: Cross-cultural Perspectives*. Honolulu: University of Hawaii at Manoa: Second Language Teaching and Curriculum Center.
- Collier, R.M. (1983). The word processor and revision strategies. *College Composition and Communication*, 34 (2), 149-155.
- Collins, A. & Gentner, D. (1980). A framework for a cognitive theory of writing. In L.W. Gregg and E.R. Steinberg (Eds.). *Cognitive Processes in Writing* (pp.51-72). Hillsdale, NJ: Erlbaum.
- Cumming, A. (1989). Writing expertise and second language proficiency. *Language Learning*, 39 (1). 81-135.
- Cumming, A. (1995). Fostering writing expertise in ESL composition instruction: Modeling and evaluation. In D. Belcher & G. Braine (Eds.). *Academic writing in a second language* (pp. 375-397). Norwood, NJ: Ablex Publishing Co.
- Daiute, C. (1985). *Writing and computers*. Reading, MA: Addison-Wesley Publishing Company.
- Daiute, C. (1986). Physical and cognitive factors in revision: Insights from studies with computers. *Research in the Teaching of English*, 20, 141-159.
- de Jong, J.H.A. & Stevenson, D.K. (Eds.). (1990). *Individualizing the Assessment of Language Abilities*. Clevedon, PA: Multilingual Matters.
- Dunkel, P. (1999). Research and development of a computer-adaptive test of listening comprehension in the less commonly-taught language Huasa. In M. Chalhoub-Deville (Ed.). *Development and research in computer adaptive language testing* (pp. 91-121). Cambridge, UK: Cambridge University of Cambridge Examinations Syndicate/Cambridge University Press.
- East, M. (2006). The impact of bilingual dictionaries on lexical sophistication and lexical accuracy in tests of L2 writing proficiency: A quantitative analysis. [Electronic version]. *Assessing Writing*, 11 (2006), 179-197.
- Ebel, R.L. (1979). *Essentials of Educational Measurement*. Third edition. Englewood Cliffs, NJ: Prentice-Hall.

- Educational Testing Service (2005). TOEFL iBT Tips: How to Prepare for the Next Generation TOEFL Test and Communicate with Confidence. Retrieved July 2005 from: [http://www.ets.org/Media/Tests/TOEFL/pdf/TOEFL\\_Tips.pdf](http://www.ets.org/Media/Tests/TOEFL/pdf/TOEFL_Tips.pdf)
- Elder, C. (2000). Is it fair to assess native and non-native speakers in common on school foreign language examinations? The case of Italian in Australia. In A.J. Kunnan (Ed.). *Fairness and Validation in Language Assessment: Selected Papers from the 19<sup>th</sup> Language testing Research Colloquium Orlando, Florida*. LA: California State University.
- Faerch, C. & Kasper, G. (1987). From product to process - introspective methods in second language research. In C. Faerch & G. Kasper (Eds.). *Introspection in second language research* (pp.5-23). Clevedon, UK: Multilingual Matters.
- Faigley, L. & Witte, S. (1981). Analyzing revision. *College Composition and Communication* 32, 400-415.
- Faigley, L., Cherry, R.D., Jolliffe, D.A., & Skinner, A.M. (1985). *Assessing Writers' Knowledge and Processes of Composing*. Norwood, NJ: Ablex.
- Fan, M.Y. (2000). The dictionary look-up behavior of Hong Kong students: A large-scale survey. [Electronic version]. *Educational Journal*, 28 (1), Summer 2000. The Chinese University of Hong Kong.
- Flower, L. & Hayes, J. R. (1981). A cognitive process theory of writing. *College Composition and Communication*, 32, 365-387.
- Fox, J. (2004). Biasing for Best in Language Testing and Learning: An Interview with Merrill Swain. *Language Assessment Quarterly: An International Journal*. 1 (4), 235-251. (doi:10.1207/s15434311laq0104\_3). Retrieved November 2007 from: <http://www.leaonline.com/loi/laq>
- Fraenkel, J.R. & Wallen, N.E. (2000). *How to design and evaluate research in education*. Fourth edition. McGraw-Hill, Boston, MA.
- Franzblau, A. (1958). *A Primer of Statistics for Non-Statisticians*. New York: Harcourt, Brace & World.
- Freedman, S.W. (1991). *Evaluating Writing: Linking Large-scale Testing and Classroom Assessment*. Imprint Berkley and Pittsburgh: National Center for the study of writing, UCLA and Carnegie Mellon.
- Freedman, S.W. (1993). Linking Large-Scale Testing and Classroom Portfolio Assessments of Student Writing. *Educational Assessment*, 1 (1), 27-52.
- Friedlander, A. (1990). Composing in English: effects of a first language in writing in English as a second language. In B. Kroll (Ed.). *Second Language Writing: Research Insights for the Classroom*. Cambridge: Cambridge University Press.

- Fulcher, G. (2000). Computers in Language Testing. In P. Brett & G. Motteram (Eds.). *A Special Interest in Computers: Learning and Teaching with Information and Communications Technology* (pp. 93-107). Manchester: IATEFL Publications.
- Furneaux, C. (1998). Process writing. In K. Johnson & H. Johnson (Eds.). *Encyclopedic Dictionary of Applied Linguistics* (pp. 257-260). Oxford: Blackwell.
- Gao, J. (2007). Teaching Writing in Chinese Universities: Finding an Eclectic Approach. [Electronic version]. *Asian EFL Journal*, 20 (Art. 2).
- Gates, R. (1978). An analysis of grammatical structures in compositions written by four groups of students at Southern Technical Institute: Indo-Iranian, Latin-Romance, Sino-Tibetan, and American. *Dissertation Abstracts International*, 39 (4), 2026A.
- Ge, G. (2005). A strategic approach to teaching English writing. *Teaching English in China*, 28 (6), 110-116.
- Grabe, W. & Kaplan, R.B. (1996). *Theory and Practice of Writing: An Applied Linguistic Perspective*. London: Longman.
- Green, D.Z. (1985). Developing measures of communicative proficiency: a test for French immersion students in grades 9 and 10. In P.C. Hauptman, R. LeBlanc & M.B. Wesch (Eds.). *Second Language Performance Testing* (pp. 215-217). Ottawa: University of Ottawa Press.
- Gubtapol, K. (2002). How Thai students use word processors to approximate Edited American English. (Doctoral dissertation, Clemson University, South Carolina, 2002) Proquest Dissertations and Theses Abstract 2002. (Publication Number AAT 3057196. ProQuest document ID: 727405611.)
- Haas, C. (1989). *How the writing medium shapes the writing process: Effects of word processing on planning*. (ERIC Document Reproduction Service No. EJ 388 596.)
- Hair, J. H. Jr., Anderson, R. E., Tatham, R.L., Black, W.C. (1995). *Multivariate Data Analysis*. Englewood Cliffs, NJ: Prentice Hall.
- Hale, G. (1992). Effects of amount of time allowed on the Test of Written English. *ETS Research Report -92-27*. Princeton, NJ: Educational Testing Service.
- Hale, G., Taylor, C., Bridgeman, B., Carson, J., Kroll, B., & Kantor, R. (1996). *A Study of Writing Tasks Assigned in Academic Degree Programs*. TOEFL Research Report # 54. Princeton, NJ: Educational Testing Service.
- Hall, C. (1987). Revision strategies in L1 and L2 writing tasks: A case study. *Dissertation Abstracts International*, 48 (5), 1187A.
- Hall, C. (1990). Managing the complexity of revising across languages. *TESOL Quarterly*, 24, 43-60.



- Hamp-Lyons, L. (1986). *Testing Second Language Writing in Academic Settings*. Unpublished doctoral dissertation, University of Edinburgh, UK.
- Hamp-Lyons, L. (1990). Second language writing: assessment issues. In B. Kroll (Ed.). *Second Language Writing: Research Insights for the Classroom*. Cambridge: Cambridge University Press.
- Hamp-Lyons, L. (1995). Rating nonnative writing: The trouble with holistic scoring. *TESOL Quarterly*, 29 (3), 759-762.
- Hamp-Lyons, L. (2000). Fairness in language testing. In A.J. Kunnan (Ed.). *Fairness and Validation in Language Assessment: Selected Papers from the 19<sup>th</sup> Language testing Research Colloquium Orlando, Florida*. LA: California State University.
- Handbook for Exit Exam of Writing Proficiency. (2005). Old Dominion University's Exit Exam of Writing Proficiency. Retrieved May 9, 2005 from [http://studentservices.odu/writingcenter/wc\\_handbook.shtml](http://studentservices.odu/writingcenter/wc_handbook.shtml)
- Harrington, S. Shermis, M.D., & Rollins, A. L. (2000). The influence of word processing on English placement test results. [Electronic version]. *Computers and Composition*, 17, 197-210.
- Harris, J. (1985). Student writers and word processing: A preliminary evaluation. [Electronic version]. *College Composition and Communication*, 36, 323-330.
- Hawisher, G. E. (1987). The effects of word processing on the revision strategies of college freshman. *Research in the Teaching of English*, 21, 145-159.
- Hayes, J.R. (1996). A new framework for understanding cognition and affect in writing. In C.M. Levy, & S. Randsell (Eds.). *The Science of Writing* (pp.1-27). Mahwah, NJ: Lawrence Erlbaum Associates.
- Hayes, J.R., Flower, L., Schriver, K., Astratman, J. & L. Carey. (1987). Cognitive processes in revision. In S. Rosenberg (Ed.). *Advances in Applied Psycholinguistics: Vol 2. Reading, writing, and language learning* (pp. 176-240). Cambridge, England and New York: Cambridge University Press.
- Heiman, G.W. (2006). *Basic Statistics for the Behavioral Sciences*. Fifth edition. Boston: Houghton Mifflin.
- Henrichsen, L., Smith, M.T, Baker, D.S. (1997). Taming the Research Beast: Research Methods. In *TESL and Language Acquisition*. BYU Department of Linguistics. Retrieved April 19, 2005 from <http://linguistics.byu.edu/faculty/henrichsen/ResearchMethods/RM001.html>
- Hinkel, E. (2002). *Second language writers' text: Linguistic and rhetorical features*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Hinkle, D.E., Wiersma, W. & Jurs, S.G. (1988), *Applied Statistics for the Behavioral Sciences*, Second edition. Boston: Houghton Mifflin Co.



- Hinton, P.R., Brownlow, C., McMurray, I., & Cozens, B. (2004). *SPSS Explained*. London: Routledge.
- Hirokawa, K. (1986). An investigation of native/non-native speaker examination essays. *Papers in Applied Linguistics – Michigan*, 1 (2), 105-131.
- Holt, D., & Baker, N.W. (1990). *Implementing a portfolio system*. In P. Belanoff, & M. Dickinson (Eds.). *Portfolios: Process and Product*. (pp. 46-56.) Portsmouth, NH: Boyton/Cook.
- Horowitz, D. (1986). Process, not product: Less than meets the eye. *TESOL Quarterly*, 20, 141-144.
- Huot, B. (1990). The literature of direct writing assessment: Major concerns and prevailing trends, *Review of Educational Research*, 60 (2), 237-263.
- Huot, B. (1996). Toward a new theory of writing assessment. [Electronic version]. *College Composition and Communication*, 47, 549-566.
- Hurman, J. & Tall, G. (1998) *The Use of Dictionaries in GCSE Modern Foreign Languages Written Examinations (French)*. A report for the Qualifications and Curriculum Authority.
- Idaho State University Writing Center Holistic Rating Scale. Retrieved August 2006 from <http://www.sde.idaho.gov/sasa/docs/TCGuide%209-07-07.rtf>
- Isaac, S. & Michael, W. B. (1995). *Handbook in research and evaluation: A collection of principles, methods, and strategies useful in the planning, design and evaluation of studies in education and the behavioral sciences*. Third edition. San Diego, CA: EdITS/Educational and Industrial Testing Services.
- Indrasuta, C. (1987). A comparison of the written compositions of American and Thai students. *Dissertation Abstracts International*, 48(7), 1681A.
- Indrasuta, C. (1988). Narrative styles in the written composition of American and Thai students. In A. Purves (Ed.). *Writing across languages and cultures: Issues in contrastive rhetoric* (pp. 206-226). Newbury Park, CA: Sage.
- Intaraprawat, P. (1988). Metadiscourse in native English speakers' and ESL students' persuasive essays. *Dissertation Abstracts International*, 49 (7), 1720A.
- Jacobs, G.M. (1989). *Dictionaries Can Help Writing--If Students Know How To Use Them*. (ERIC Document Reproduction Service No. ED. 316025)
- Jacobs HL, Zinkgraf SA, Wormuth DR, Hatfield VF, Hughey JB. (1981). *Testing ESL Composition: A Practical Approach*. Rowley, Mass: Newbury House.
- Johnson, M.I. & Serkel, K. (1984). Writing with the computer brings positive results. *Business Education Forum*, 32-35.

- Kellogg, R. (1996). A model of working memory in writing. In C.M. Levy & Ransdell, S. (Eds.). *The Science of Writing* (pp.57-71). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kern, R. (2000). *Literacy and language teaching*. Hong Kong: Oxford University Press.
- Khongpun, S. (1992) Composing processes of Thai high school students: A protocol analysis. *Dissertation Abstracts International* 54/04: 1337A.
- Kietlinska, K. (2006). Revision and ESL Students. In A. Horning and A. Becker (Eds.). *Revision: History, Theory and Practice*. [Electronic version]. West Lafayette, Indiana: Parlor Press Retrieved October 2007 from: [http://wac.colostate.edu/books/horning\\_revision/chapter5.pdf](http://wac.colostate.edu/books/horning_revision/chapter5.pdf)
- Kim, M. (2002). *Process and Product: An Investigation of the Writing of Non-native Speakers of English in a Computer-based Academic English Writing Test*. Unpublished doctoral dissertation, University of California at Los Angeles, USA.
- Kim, Y. & Kim, J. (2005). Teaching Korean university writing class: Balancing the process and the genre approach. [Electronic version]. *Asian EFL Journal*, 7 (2), 69-90.
- Kogen, M. (1986). The conventions of expository writing. *Journal of Basic Writing*, 5, 24-37.
- Krejcie, R.V., & Morgan, D.W. (1970). Determining Sample Size for Research Activities, *Educational and Psychological Measurement*, 30, 607-610.
- Kroll, B. (Ed.). (1990a). *Second Language Writing: Research Insights for the Classroom*. Cambridge: Cambridge University Press.
- Kroll, B. (1990b). What does time buy? ESL student performance on home versus class compositions. In B. Kroll (Ed.). *Second Language Writing: Research Insights for the Classroom*. Cambridge, England: Cambridge University Press.
- Kubota, M. (2001). Error correction strategies when revising. [Electronic version]. *System*, 29, 467-480
- Kunnan, A.J. (2000). Fairness and justice for all. In A.J. Kunnan (Ed.). *Fairness and Validation in Language Assessment: Selected Papers from the 19<sup>th</sup> Language testing Research Colloquium Orlando, Florida*. LA: California State University.
- Kuusela, H. & Pallab, P. (2000). A Comparison of Concurrent and Retrospective Verbal Protocol Analysis. [Electronic version]. *The American Journal of Psychology*, 113 (3), 387-404.
- Laufer, B., & Kimmel, M. (1997). Bilingualised dictionaries: How learners really use them. *System*, 25 (3), 361-369.

- Lee, H.K. (2004). A comparative study of ESL writers' performance in a paper-based and a computer-delivered writing test [Electronic version]. *Assessing Writing* 9 (2004) (1), pp. 4-26.
- Lee, H. (2005). *Collaboration in language testing: Investigating the validity of a new rating procedure for EFL writing assessment in Korea*. (Doctoral dissertation, University of Illinois at Urbana-Champaign, 2005). Proquest Dissertations and Theses Abstract 2005. (Publication Number: AAT 3182304. ProQuest Document ID: 954014431)
- Lee, Y-J. (2002). A comparison of composing processes and written products in timed-essay tests across paper-and-pencil and computer modes. [Electronic version]. *Assessing Writing*, 8, 135-157.
- Lee, Y-J. (2006). The process-oriented ESL writing assessment: Promises and challenges. [Electronic version]. *Journal of Second Language Writing*, 15, 307-330.
- Leki, I. (1990). Coaching from the margins: Issues in written response. In Kroll (Ed.). *Second Language Writing: Research Insights for the Classroom*. Cambridge: Cambridge University Press.
- Leki, I. (1992). *Understanding ESL Writers: A Guide for Teachers*. Portsmouth: Boynton.
- Leki, I. (1995). Coping strategies of ESL students in writing tasks across the curriculum. [Electronic version]. *TESOL Quarterly*, 29 (2), 235-260.
- Lewkowicz, J. (1997). *Investigating Authenticity in Language Testing*. Unpublished doctoral dissertation, University of Lancaster, UK.
- Li, J. (2006). The mediation of technology in ESL writing and its implications for writing assessment. [Electronic version]. *Assessing Writing*, 11, 5-21.
- Li, J., & Cumming, A. (2001). Word processing and second language writing: A longitudinal case study. In R. Manchon (Ed.). *Writing in the L2 classroom: Issues in research and pedagogy*. *International Journal of English Studies*, 1, 127-152.
- Liu, L. (2005). Rhetorical education through writing instruction across cultures: A comparative analysis of select online instructional materials on argumentative writing. [Electronic version]. *Journal of Second Language Writing*, 14 (1), 1-18.
- Livingston, S.A. (1987). *The Effects of Time Limits on the Quality of Student Written Essays*. Paper presented at the meeting of the American Educational Research Association, Washington, DC.
- Lowenberg, P. (2000). Non-native varieties and issues of fairness in testing English as a world language. In A.J. Kunnan (Ed.). *Fairness and Validation in Language Assessment: Selected Papers from the 19<sup>th</sup> Language testing Research Colloquium Orlando, Florida*. LA: California State University.

- Lowry, R. (1999-2008). Concepts and Applications of Inferential Statistics. Retrieved January 2008 from: <http://faculty.vassar.edu/lowry/webtext.html>
- Lutz, J.A. (1987). A study of professional and experienced writers revising and editing at the computer and with pen and paper. *Research in the Teaching of English*, 21, 398-421.
- McNamara, T. F. (1996). Measuring second language performance. London and New York: Longman.
- Meichenbaum, D., Burland, B., Gruson, L., Cameron, R. (1985). Metacognitive Assessment. In S. Yussen (Ed.). *The Growth of Reflection in Children* (pp. 3-30). London: Academic Press.
- Moon, Y.I. (2000). The nature of peer revisions in an EFL writing class of a Korean university. [Electronic version]. *English Teaching*, 55 (1), 119-140.
- Moragne e Silva, M. (1989). A study of composing in a first and second language. *Texas Papers in Foreign Language Education*, 1 (2), 132-151.
- Mu, C. (2005). A Taxonomy of ESL Writing Strategies. In *Proceedings Redesigning Pedagogy: Research, Policy, Practice* (pp. 1-10). Singapore.
- Mu, C. & Carrington, S. (2007). An Investigation of Three Chinese Students' English Writing Strategies. [Electronic version]. *Teaching English as a Second or Foreign Language E-Journal*. June 2007, 11 (1) Retrieved November 2007 from: <http://tesl-ej.org/ej41/a1.html>
- Myles, J. (2002). *Second language writing and research: The writing process and error analysis on student texts*. [Electronic version]. Retrieved September 2007 from: <http://www.writing.berkeley.edu/TESL-EJ/ej22/a1.html>
- Nesi, H. & Meara, P. (1991). *How using dictionaries affects performance in multiple-choice EFL tests*. (ERIC Document reproduction Service No. ED 472803).
- Neuwirth, C. M. (1990). *Does word processing improve students' writing? A critical appraisal and assessment*. Final Report to FIPSE (ERIC Document Reproduction Service No. ED 329 994).
- Nichols, J. W. (2003, April 11). *MegaPsych Home Page*. Retrieved September 19, 2005 from: <http://www.tulsa.oklahoma.net/~jnichols/AssignmentsChecklist.html>
- Nisbet, J. & Shucksmith, J. (1986) *Learning Strategies*. London: Routledge
- O'Malley, J. & Chamot, A. (1990). *Learning strategies in second language acquisition*. Cambridge, England: Cambridge University Press.
- Owston, D. R., Murphy, S., & Wideman, H. (1992). The effects of word processing on students' writing quality and revision strategies. *Research in the Teaching of English*, 26 (3), 249-276.



- Oxford, R. (1990). *Language Learning Strategies: What every teacher should know*. New York: Newbury House Publishers.
- Parkhurst, C. (1990). The composition processes of science writers. *English for Specific Purposes*, 9, 169-179.
- Perkins, D. (1985). The fingertip effect: How information processing technology shapes think. *Educational Researcher*, 14 (7), 11-17.
- Perl, S. (1980). Understanding composing. *College Composition and Communication*, 31 (4), 363-369.
- Peterson, S.E. (1993). A comparison of student revisions when composing with pen and paper versus word-processing. *Computers in the Schools*, 9, 55-69.
- Phinney, M., & Khouri, S. (1993). Computers, revision, and ESL writers: The role of experience. *Journal of Second Language Writing*, 2, 257-277.
- Pidchamook, W. (2003). *A comparison of English paragraph writing ability of Rajabhat Institute undergraduates who received different types of feedback*. Unpublished doctoral dissertation, Chulalongkorn University, Bangkok, Thailand.
- Polio, C. & Glew, M. (1996). ESL writing assessment prompts: How students choose. *Journal of Second Language Writing*, 5 (1), 35-49.
- Porte, G. (1996). When writing fails: How academic context and past learning experiences shape revision. *System*, Vol. 24, No. 1, 107-116.
- Powers, D., Fowles, M., Farnum, M. & Ramsey, P. (1994). Will they think less of my handwritten essay if others word process theirs? Effects on essay scores of intermingling handwritten and word-processed essays. [Electronic version]. *Journal of Educational Measurement*, 31 (3), 220-233.
- Powers, D.E. & Fowles, M.E. (1997). Effects of Applying Different Time Limits to a Proposed GRE Writing Test. [Electronic version]. *Journal of Educational Measurement*. Winter 1996, 33 (4), 433-452.
- PSAE - A Writing Performance Definition. Retrieved August 2006 from [http://www.isbe.net/assessment/htmls/writing\\_psaedef.htm](http://www.isbe.net/assessment/htmls/writing_psaedef.htm)
- Purves, A.C., Soter, A., Takala, S. and Vähäpääsi, A. (1984). Towards a domain referenced system for classifying assignments. *Research in the Teaching of English* 18 (4), 385-416.
- Raimes, A. (1984). Anguish as a second language? Remedies for composition teachers. In A. Freedman, I. Pringle & J. Yalden (Eds.). *Learning to Write: First language/ second language* (pp. 258-72). New York: Longman.
- Raimes, A. (1985). What unskilled ESL students do as they write: A classroom study of composing. *TESOL Quarterly*, 19 (2), 229-258.



- Raimes, A. (1987). Language proficiency, writing ability, and composing strategies: A study of ESL college student writers. *Language Learning*, 37, 439-467.
- Raimes, A. (1990). The TOEFL Test of Written English: Causes for concern. *TESOL Quarterly*, 24 (3) Autumn 1990.
- Reid, J. (1993). *Teaching ESL Writing*. Englewood Cliffs, NJ: Prentice Hall.
- Riazi, A. (1997). Acquiring disciplinary literacy: A social-cognitive analysis of text production and learning among Iranian graduate students of education. *Journal of Second Language Writing*, 6 (2), 105-137.
- Rohman, G. (1965). Pre-writing: The Stage of Discovery in the Writing Process. *College Composition and Communication*, 16, 106-112.
- Ruetten, M. (1994). Evaluating ESL students' performance on proficiency exams. *Journal of Second Language Writing*, 3 (2), 85-96.
- Russell, M. (2002a). The influence of computer-print on rater scores. Technology and Assessment Study Collaborative, CSTEPP Boston College, Released April 2002. Retrieved October 2004 from: <http://www.bc.edu/research/intasc/PDF/ComputerPrintRaterScores.pdf>
- Russell, M. (2002b). How computer-based technology can disrupt the technology of testing and assessment. *Technology and Assessment: Thinking Ahead -- Proceedings from a Workshop*; Board on Testing and Assessment, National Research Council. 63-78. ISBN 0-309-08658-2. Retrieved October 20, 2004 from: <http://escholarship.bc.edu/intasc/11/>
- Russell, M., & Haney, W. (1997). Testing writing on computers: An experiment comparing student performance on tests conducted via computer and via paper- and-pencil. *Education Policy Analysis Archives*, 5 (3). Retrieved October 2004 from: <http://epaa.asu.edu/epaa/v5n3.html>
- Ruth, L. & Murphy, S. (1988). *Designing Writing Tasks for the Assessment of Writing*. Norwood, NJ: Ablex.
- Sakontawut, N. (2003). *Functional sentence perspective and second-language composition: A study of revision process in writing workshop for Thai college students*. (Doctoral dissertation, Indiana University, Pennsylvania, USA, 2003). Retrieved August 23, 2007 from ProQuest database: <http://proquest.umi.com/pqdweb?did=744394661&sid=4&Fmt=2&clientId=43774&F> Publication Number: AAT 3080961. ProQuest document ID: 765246011.
- Salomon, G. (1988). AI in reverse: Computer tools that become cognitive. *Journal of Educational Computing Research*, 4, 123-140. (ERIC Document Reproduction Service No. ED 295 610.)
- Sapsirin, S. (2007). *A study of trait factors of oral language ability in a computer-based speaking test for Thai university students*. Unpublished doctoral dissertation, Chulalongkorn University, Bangkok, Thailand.

- Sasaki, M. (2000). Toward an empirical model of EFL writing processes: An exploratory study. *Journal of Second Language Writing*, 9 (3), 259-291.
- Saunders, P. & Scialfa, C. (2003). The Effects of Pre-Exam Instruction on Students' Performance on an Effective Writing Exam. *Written Communication*, 20 (2), 195-212.
- Scannell, D.P. & Tracey, D.B. (1975). *Testing and Measurement in the Classroom*. Boston: Houghton Mifflin Company.
- Schwartz, M. (1983). Revision profiles: patterns and implications. *College English*, 45 (6) October 1983, 549-558.
- Severinson Eklundh, K. (1992). Problems in achieving a global perspective of the text in computer-based writing. [Electronic version]. *Instructional Science*, 21, 73-84.
- Severinson Eklundh, K. (1994). Linear and non-linear strategies in computer-based writing. [Electronic version]. *Computers and Composition*, 11, 203-216.
- Shaffer, H.J., Hall, M.N. & Vander Bilt, J. (1997). *Program Evaluation: Discovering What Works*. Retrieved September 19, 2005 from: [http://www.hms.harvard.edu/doa/html/program evaluation.htm](http://www.hms.harvard.edu/doa/html/program%20evaluation.htm)
- Shohamy, E. (2000). Fairness in language testing. In A.J. Kunnan (Ed.). *Fairness and Validation in Language Assessment: Selected Papers from the 19<sup>th</sup> Language testing Research Colloquium Orlando, Florida*. LA: California State University.
- Silva, T. (1990). Second language composition instruction: developments, issues, and directions in ESL. In B. Kroll (Ed.). *Second Language Writing: Research Insights for the Classroom*. Cambridge: Cambridge University Press.
- Silva, T. (1993). Toward and understanding of the distinct nature of L2 writing: The ESL Research and its implications. *TESOL Quarterly*, 27 (4), 657-677.
- Sloan, C. A., & McGinnis, L. (1978). *The effect of handwriting on teachers' grading of high school essays*. (ERIC Document Reproduction Service No. ED 220 836.)
- Smith, W.L., Hull, G.A., Land, R.E. Moore, M.T., Ball, C., Dunham, D.E., Hickey, L.S., and Ruzich, C.W. (1985). Some effects of varying the structure of the topic on college students' writing. *Written Communication*, 2, 73-89.
- Sommers, N. (1980). Revision strategies of student writers and experience adult writers. *College Composition and Communication*, 31, 378-388.
- Spaan, M. (2000). Enhancing fairness through a social contract. In A.J. Kunnan (Ed.). *Fairness and Validation in Language Assessment: Selected Papers from the 19<sup>th</sup> Language testing Research Colloquium Orlando, Florida*. LA: California State University.
- Spolsky, B. (1968). Language testing: the problem of validation. *TESOL Quarterly*, 2 (2), 88-94.

- SPSS Inc. (2002). SPSS for Windows Release 11.5.0. [Computer software]. Chicago: SPSS, Incorporated.
- Susser, B. (1994). Process approaches in ESL/EFL writing instruction. *Journal of Second Language Writing*, 3, 31-47.
- Sweedler-Brown, C. O. (1991). Computers and assessment: The effect of typing versus handwriting on the holistic score of essays. *Research and Teaching in Developmental Education*, 8, 5-14.
- Tagong, K. (1991). *Revising strategies of Thai students: Text-level changes in essays written in Thai and in English*. (Doctoral dissertation, Illinois State University, USA, 1991). Retrieved August 23, 2007 from ProQuest database: [http://proquest.umi.com/pqdweb?did=744394661&sid=4&Fmt=2&clientId=43774&F\\_Publication\\_Number\\_AAT\\_9203037](http://proquest.umi.com/pqdweb?did=744394661&sid=4&Fmt=2&clientId=43774&F_Publication_Number_AAT_9203037). ProQuest document ID: 744394661
- Tall, G. & Hurman, J. (2000). Using a Dictionary in a Written French Examination: The Students' Experience. [Electronic version]. *Language Learning Journal*. 21, 50-56.
- Taylor, K.K. (1984). The different summary skills of inexperienced and professional writers. *Journal of Reading* 27, 691-699.
- Taylor, A. (1988). Learners and English dictionaries: Some assumptions and challenges. [Electronic version]. *Institute of Language in Education Journal*, 4, 88-92.
- Thapanachai, S. (2005). State unit focuses on boosting English skills. *Bangkok Post*. September 6, 2005. Retrieved August 2007 from: <http://listserv.linguistlist.org/cgi-bin/wa?A2=ind0509&L=lgpolicy-list&D=1&P=2063&F=P>
- The Linguistic Association of Finland. Retrieved October 6, 2005 from: [http://www.ling.helsinki.fi/sky/tapahtumat/complexity/complexity\\_cfp.shtml](http://www.ling.helsinki.fi/sky/tapahtumat/complexity/complexity_cfp.shtml)
- TOEFL iBT Test - Independent Writing Rubrics retrieved 2005 from: <http://www.ets.org/Media/Tests/TOEFL/pdf/ibt%20scores.pdf>
- Trochim, W.M.K. (2002). *The Qualitative Debate*. Retrieved September 20, 2005 from: <http://www.socialresearchmethods.net/kb/qualdeb.htm>
- University of London Computer Center and UNESCO (2003). *UNESCO Thesaurus*. Retrieved October 6, 2005 from: <http://www.ulcc.ac.uk/unesco/>
- Victori, M. (1995). *EFL writing knowledge and strategies: An interactive study*. (Doctoral dissertation, Universitat Autònoma de Barcelona, Barcelona, Spain, 1995). Proquest Dissertations and Theses Abstract 1995. (Publication Number: AAT C538042. ProQuest document ID: 739102861)

- Vongpadungkiat, N. (2006). *A Study of Selected Predictors of English Reading Tests Performance in Consumer Product Marketing of Fourth-year University Students*. Unpublished doctoral dissertation, Chulalongkorn University, Bangkok, Thailand.
- Wallace, D.L., Hayes, J.R., Hatch, J.A., Walden, M. and Moser, G. (1996). Better revision in eight minutes? Prompting first-year college writers to revise globally. *Journal of Educational Psychology*, 88 (4), 682-688.
- Weigle, S.C., Lamison, B. & Peters, K. (2000). *Topic selection on a standardized writing assessment*. Paper presented at Southeast Regional TESOL, Miami, FL, October.
- Weigle, S.C. (2002). *Assessing Writing*. Cambridge: Cambridge University Press.
- Wenden, A. L. (1991). Metacognitive strategies in L2 Writing: A case for task knowledge. In J. E. Alatis (Ed.). *Georgetown University Round Table on Languages and Linguistics 1991* (pp. 302-322). Washington, DC: Georgetown University Press.
- White, E.M. (1984). Holisticism. [Electronic version]. *College Composition and Communication*, 35 (4), 400-409.
- White, R. and V. Arndt (1991). *Process Writing*. Harlow: Longman.
- Wikimedia Foundation Inc. (2006). Likert scale [online] Retrieved July 21, 2006 from: [http://en.wikipedia.org/wiki/Likert\\_Scales](http://en.wikipedia.org/wiki/Likert_Scales)
- Wild, C.L., Durso, R. & Rubin, D.B. (1982). Effect of increased test-taking time on test scores by ethnic groups, years out of school, and sex. *Journal of Educational Measurement*, 19 (2), 19-28.
- Williamson, M.M., & Pence, P. (1989). Word processing and student writers. In B.K. Britton & S.M. Glynn (Eds.). *Computer wiring environments: Theory research, and design* (pp. 93-127). Hillsdale, NJ: Erlbaum.
- Wolfe, E.W., Bolton, S., Feltovich, B., & Niday, D. (1996). The influence of student experience with word processors on the quality of essays written for a direct writing assessment. *Assessing Writing*, 3, 123-147.
- Wolfe, E.W. & Manalo, J.R. (2004). Composition medium comparability in a direct writing assessment of non-native English speakers. *Language Learning and Technology*, January 2004, 8 (1), 53-65. Retrieved November 2007 from: <http://llt.msu.edu/vol8num1/pdf/wolfe.pdf>
- Writing Competency Exam Holistic Rating Scale (Retrieved August 2006 from: <http://www.biola.edu/sics/downloads/2007/MACertificate-TESOLHandbook.pdf>)
- Yau, M. (1989). *A quantitative comparison of L1 and L2 writing processes*. Paper presented at the 23<sup>rd</sup> Annual TESOL Convention, San Antonio, Texas.



Younkin, W.F. (1986). Speededness as a source of test bias for non-native English speakers on the college level Academic SK Test (Doctoral dissertation, University of Miami). *Dissertation Abstracts International*, 47, (11), A4072.

Zamel, V. (1982). Writing: The process of discovering meaning. *TESOL Quarterly*, 16 (2), 195-209.

Zamel, V. (1983). The composing processes of advanced ESL students: Six case studies. *TESOL Quarterly*, 17 (2), 165-187.

Zamel, V. (1985). Responding to student writing. *TESOL Quarterly*, 19, 79-101.



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APPENDICES

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## Appendix A: The development of a T-CBWT

### The Development of a Test Taker-centered Computer-based Writing Test

#### Name of test:

The Test taker-centered Computer-based Writing Test (T-CBWT)

#### Introduction:

This English writing test is designed mainly for research purposes, specifically targeted for first-year non-native speaker students of Thai nationalities who have entered a Thai university at the undergraduate level.

Aftertime, this test may be further developed and formally implemented for various decision making purposes. The evaluative essay has been selected as the genre as it is deemed a basic necessity for students at this level to be able to state, support, and justify their opinions substantially.

This test will be designed based on Bachman and Palmer's (1996) model of test development and test usefulness.

To elicit a writing sample from subjects, a prompt and parallel prompts are developed providing contexts for the writing tasks and specifying a number of criteria that the writing sample should meet. It also specifies a writing process for the test takers to follow. The decisions described above are made on the basis of the students following these processes and satisfying established criteria. The components of the prompt are patterned after a model currently used in large-scale writing assessment (TOEFL's independent writing section).

There are three main stages that have to be implemented in the development of this test: designing the test, operationalizing the test, and administering the test. The first step is laid out in detail below. The second and third steps can be found in Chapter III of the study.

#### I. Design statement

**1. Test purposes:** The purpose of this test is mainly to make inferences and to make decisions as follows:

##### A. Making inferences

The purpose of the test is to be able to make inferences about test takers' language ability or language knowledge (including organizational knowledge, grammatical knowledge, textual knowledge, pragmatic knowledge, functional knowledge, and sociolinguistic knowledge (Bachman, 1990)). Specifically, the test would like to make

inferences about test takers' ability to write, taking into account their knowledge of grammar, vocabulary, sentence structure, cohesion, rhetorical organization, coherence, clarity and explicitness, and topic development and supportive examples.

## **B. Making decisions**

### **1. Research uses:**

To describe profiles of language ability for research purposes, specifically to see how facilitative functions (thesaurus, dictionary, and self-reflective questions) will affect the language test performance, the relationship of test task characteristics and performance on language tests.

### **2. Stakes:**

For this study, the test would be of relatively low stakes. However, should this test were to be used beyond research purposes, it could be used as a test of either low stakes as a summative writing test or a test of relatively high stakes as a writing proficiency test. Test results in the latter case would be used to make decisions about whether test takers' meet the minimum standard skills necessary to write college level essays, which would help determine whether or not they would qualify as a graduate level student.

### **3. Individuals affected:**

Test takers, university teachers responsible for test takers' English writing skills, and the university as an educational institution will be affected.

### **4. Specific decisions to be made:**

If this test were to be used outside of research purposes, it would be used for the following decisions:

#### **a. Diagnosis:**

To identify specific strengths and weaknesses of individuals in their writing ability so individuals will be aware of which area to improve

#### **b. Progress and Grading:**

To provide useful information for both teacher and students as to how much progress students have made or how much improvement they need at the end of a course of study.

#### **c. Selection:**

To determine which individuals are most likely to succeed in graduate-level programs, to help make these admission decisions. Or for employers who want to use a language test as part of a procedure for hiring applicants.

## 2. Description of Target Language Use (TLU) Domain/s and task types

### A. Identification of tasks

#### 1. TLU Domain: Real-life and Language Instructional

The test is used in making decisions that are directly relevant to the test taker's performance on tasks in a real-life and language instructional domains since test takers will increasingly be required to write English essays of evaluative nature in the graduate level.

#### 2. Identification and selection of TLU tasks for consideration as test tasks: The TLU tasks to be analyzed are identified on the basis of the observed needs of non-native speakers of English in Thailand who plan to further their studies in the graduate level, and who will be required to express themselves in written English, demonstrating their ability to express and support their opinions in an organized manner.

(See Description of TLU task types in Table below)

### 3. Description of characteristics of target test takers

#### A. Personal characteristics

1. **Age:** between 17 and 23.
2. **Sex:** male and female
3. **Nationalities:** Thai
4. **Immigrant status:** native Thai students
5. **Native languages:** Thai, and possibly other Thai dialects
6. **Level and type of general education:** undergraduate students with a high school education
7. **Type and amount of preparation or prior experience with the given test:** Many test takers may have heard about standardized ESL proficiency tests such as the TOEFL or the IELTS, whose written part (especially TOEFL's independent writing part) closely resembles that of the T-CBWT, but may not have actually had experience taking it. Preparation of the current T-CBWT involves training to use Microsoft Word word processor to type answers. Therefore, prior experience with the given test would be limited to only being trained using the program. However, if participants have already had experience taking the TOEFL or IELTS, they would be familiar with answering the type of questions being asked on the current test.

*Description of TLU task types*

Description of Task	TLU Task: Essay Exam
<p><b>SETTING</b> Physical characteristics</p> <p><b>Participants</b></p> <p><b>Time of task</b></p> <p><b>TEST RUBRICS</b> Instructions</p> <p><b>Structure</b></p> <p><b>Time allotment</b></p> <p><b>Scoring method</b></p>	<p><b>Location:</b> Computer lab on campus  <b>Noise level:</b> Quiet  <b>Temperature and humidity:</b> Comfortable  <b>Seating conditions:</b> Individual desks and computers  <b>Lighting:</b> Well lit  <b>Materials and equipment and degree of familiarity:</b> Microsoft Word program and demonstration &amp; training of how to use program, thus relatively familiar to test takers.</p> <p>Student, teacher, and researcher</p> <p>Test administered out of class period. Test takers should be fresh and physically and mentally rested for the test.</p> <p>Language: Instructions will be given both in target and native language to ensure that test takers are understand clearly.  Channel: Both visual and aural  Specifications of procedures and tasks: The procedures and tasks are explicitly and lengthily specified for test takers and provided entirely in one location.</p> <p>Number of parts/tasks: One task and one part  Salience of parts/tasks: A single task  Relative importance of parts/tasks: The entire task is equal in importance.</p> <p>Sufficient time of 90 minutes is provided in this “power test” (a test in which enough time is allowed so that every test taker can complete the task).</p> <p>Criteria for correctness: The correctness of the response will be determined by means of judgment of raters according to a multiple value rating scale.</p> <p>Procedures for scoring the response: All responses are rated by three trained raters.</p> <p>Explicitness of criteria and procedures: The test takers will be informed about the nature of the scoring criteria and scoring procedures.</p>



*Description of TLU task types (Continued)*

Description of Task	TLU Task: Essay Exam
<p><b>INPUT Format</b></p> <p><b>Language characteristics</b></p> <p><i>Organizational characteristics</i></p> <p><i>Pragmatic characteristics</i></p> <p><i>Topical characteristics</i></p>	<p><b>Channel:</b> Mostly visual  <b>Form:</b> Written language  <b>Language:</b> Both native and target language  <b>Length:</b> Prompt is short. Input used to activate schemata is short.  <b>Type:</b> Prompt or a directive to write a composition  <b>Speededness:</b> More of a power test, however possible speededness; test takers may refer to prompt at anytime.  <b>Vehicle:</b> Computerized or live when there is spoken input from researcher</p> <p><b>Grammatical:</b> Vocabulary, syntax, phonology, morphology  <b>Textual:</b> Cohesion, rhetorical organization</p> <p><b>Functional:</b> Ideational, manipulative, heuristic, imaginative  <b>Sociolinguistic:</b> register, naturalness, cultural references and figurative language</p> <p>A combination of academic, personal &amp; cultural information found in the input</p>
<p><b>EXPECTED RESPONSE Format</b></p> <p><b>Language of expected response</b></p> <p><b>Language characteristics</b></p> <p><i>Organizational characteristics</i></p> <p><i>Pragmatic characteristics</i></p> <p><i>Topical characteristics</i></p>	<p><b>Channel:</b> Visual, written  <b>Form:</b> Written language  <b>Language:</b> The target language, English  <b>Length:</b> ~350 words  <b>Type:</b> Extended production response (free composition)  <b>Degree of speededness:</b> Possible speededness, within a 90-minute time limit given.</p> <p><b>Grammatical:</b> Vocabulary, syntax, phonology, morphology  <b>Textual:</b> Cohesion, rhetorical organization</p> <p><b>Functional:</b> Ideational, manipulative, heuristic, imaginative  <b>Sociolinguistic:</b> register, naturalness, cultural references and figurative language</p> <p>A combination of academic, personal &amp; cultural depending upon the input</p>
<p><b>RELATIONSHIP BETWEEN INPUT &amp; RESPONSE</b></p>	<p><b>Reactivity:</b> It's a non-reciprocal task where there is no interaction between language users.  <b>Scope of relationship:</b> There is medium amount of input to be processed in order for the test taker to respond as expected  <b>Directness of relationship:</b> There's an indirect relationship since the response does not have to directly include the information supplied in the input; but must be relevant to the input.</p>

### C. Levels and profiles of language knowledge of test takers

#### 1. General level of language ability:

Test takers' language ability will range from low to high intermediate, using the Chulalongkorn University Test of English Proficiency (CUTEP) as a yardstick.

**2. Specific writing ability:** Their writing ability specific to this test, namely their ability to write an essay of the evaluative type, would depend on their writing proficiency, their background exposure to and experience with English. Their ability to write an essay of this type would also be examined via a pretest, which would be parallel to the present test.

#### D. Possible affective responses to taking the test

**1. Highly proficient test takers:** This group of test takers is more likely to respond positively to the test and test task since they may see it as a challenge and as an opportunity to experience taking a test which is similar to that of the TOEFL's independent writing section.

**2. Less proficient test takers:** This group of test takers is more likely to respond less positively to the test and test task; however, they may not feel very much under pressure since this test is for the purpose of research and would not affect their grades in anyway. Moreover, they may also see it as an opportunity to experience a test similar to the TOEFL's independent writing section.

#### 4. Definition of Constructs to be measured

**Language ability/knowledge:** The construct in this test is a theory-based construct which includes more than one specific area of language ability as follows:

##### Organizational Knowledge

**1. Knowledge of grammar to be measured:** Accurate use of a range of sentence structures; accurate use of syntax; range and accuracy of general purpose and specialized vocabulary

**2. Knowledge of textual organization to be measured:** Knowledge of rhetorical organization: Knowledge of features for organizing information, knowledge of features for explicitly marking cohesive textual relationships; within sentence and paragraph level, both coherence and cohesion

##### Pragmatic Knowledge

**1. Knowledge of register to be measured:** Control of moderately formal register in formulaic expressions:

A. **Strategic competence:** Encompasses the test takers' ability to plan, organize and edit/proofread one's own writing. However, strategic competence will not be included in the construct definition nor will it be measured directly but it will be assumed since the essays will eventually reflect their strategic knowledge.

B. **Topical knowledge:** This aspect will not be included in the construct definition since it is a research project (Bachman & Palmer, 1996:121). The possible problem to be expected concerning topical knowledge is bias due to specific topical knowledge in the task input, which some test takers may be keen on. Although one way to cope with this problem is to give the test takers a choice of topics, this will not be done since it would be more difficult to control relevant variables. However, analytical rating scales will be used for rating components of language ability, which would enable the researcher to focus on specific components of language ability. How well the test taker knows the given topic will not be measured; however, content will be evaluated in terms of clarity, explicitness, and the ability to develop the topic and provide supportive examples. In other words, the essay should be a ratable sample.

## 5. Plan for evaluating qualities of usefulness

There will be an attempt to find a balance among the qualities of usefulness given below, as well as to determine a minimum acceptable level of usefulness of each quality.

### A. *Reliability*

#### I. **Setting minimum acceptable levels of reliability:**

a. Relevant considerations about the test

**1. Purpose:** The main use of this test is for research purposes; therefore, the minimum acceptable level for reliability needs to be high.

**2. Construct definition:** Basically only one component will be taken into account, namely language knowledge (not world knowledge), therefore, a high level of reliability is expected.

**3. Nature of test task:** one main task, with subtasks that require test takers to edit the main task.

b. Level: High

c. Reliability will be specified through: appropriate reliability estimate, adequacy of time allocation and clarity of scoring criteria

**II. Logical evaluation:** The quality of reliability will be assured by the following logical evaluation:

- a. There will be no variation in setting. All administrations of the test will be carried out in the same setting.
- b. The characteristics of input in the two parallel tests may vary in the specific technical vocabulary and topic which cannot be avoided; however, they are completely consistent with the purpose of the test, which is to measure the test takers' ability to write an evaluative essay.
- c. There will be only one set of rubrics that will be used to evaluate the two parallel tests, each of which contain only one part.
- d. The characteristics of the expected response in the two parallel tests are consistent with the purpose of the tests.
- e. The characteristics of the relationship between input and response do not vary between the two parallel tests.

**III. Procedures for collecting empirical evidence:**

- a. Appropriate estimates of reliability: Rater consistency/stability
- b. Adequacy of time allocation: 1 hour 30 minutes time given
- c. Clarity of scoring criteria: analytical rating scales used to rate components of language ability

**B. Construct validity**

**I. Setting minimum acceptable levels of construct validity:**

Relevant considerations:

1. Purpose: The main use of this test is for research purposes; therefore, a wide range of evidence needs to be collected in order to satisfy the validity of the score interpretation and decisions to be made.
2. Construct definition: Evidence related to language knowledge specifically laid out above will have to be collected.
3. Domain of generalization: Evidence that shows us that the scores obtained from the test can really measure the actual language ability (construct) reflected in the performance on the language test needs to be gathered.

**II. Logical evaluation:** The quality of construct validity will be assured by the following logical evaluation:

The quality of construct validity **is satisfactory** due to the following logical judgment:

- a. The construct definition includes three individually described parts, which will be used as the basis for developing scoring scales.
- b. The construct definition of the test is consistent with expectations of what the characteristics of an evaluative essay should comprise of.
- c. The test task is designed to elicit a sample of language use that is long and complex enough (~350 words) to allow the test taker to demonstrate language ability in the area specified in the construct definition.
- d. The three scoring scales with their sub-scales (Language use - syntax, vocabulary, cohesion; Organization - rhetorical organization, coherence; Content - clarity and explicitness, topic development, supporting examples) are directly related to the construct definition.
- e. The required interpretations of language ability can be made directly from the test scores since an analytical scale will be used.

The quality of construct validity is **not** satisfactory due to the following possible sources of bias in the task characteristics:

- a. All test takers should be comfortable with the physical setting and familiar with the writing materials (Microsoft word processor). They will also be trained to use some of the gadgets provided in the program.
- b. The instructions are at a level which students at the lower ability level should be able to understand. Thai instructions will be provided. Also, the proctor will be available to assist test takers with the instructions. Structure, time allotment, and scoring method do not favor different test takers in any obvious way.
- c. There are no obvious characteristics on which the input would cause different test takers to perform differently. All test takers are able to process visual input of the type used in the test.
- d. The only characteristics of the expected response that are likely to cause different test takers to perform differently are those directly tied to the construct to be measured.
- e. If different test takers have different amounts of experience with taking writing tests or their ability to recall their experiences differ, this might bias performance on the test in favor of test takers with more experience.



**Dimensions of tasks for direct writing assessment**  
Adapted by Weigle from Purves et al. (1984) and Hale et al. (1996)

**Test Taker-centered Computer-based Writing Test**

<b>Tasks Dimension:</b>	<b>T-CBWT:</b>
<b>Content</b>	
Subject matter	Environmental/social topics
Stimulus	A short text to prevent test takers from borrowing the language & content of the source text. Easy for test takers to relate to and sufficient in terms of content
<b>Genre</b>	
Genre	An academic essay, considered authentic only for those who plan to continue studies in English medium programs
Rhetorical task	Evaluative/argumentative in nature
Pattern of exposition	Providing examples/illustration, advantages disadvantages
Cognitive demands	Test takers need to analyze and evaluate
<b>Specification of</b>	
-Audience	teacher/researcher
-Role	self
-Tone/style	formal
<b>Length &amp; time</b>	
Length	~350 words
Time allowed	1 - 1½ hours for process writing (planning, editing and consulting references) 1 hour more than similar writing tests
<b>Prompt</b>	
Prompt wording	Both statements and questions provided. Sufficient amount of context provided
Choice of prompts/task	No choice given since it would be difficult to measure if tasks are equal in difficulty
<b>Instructions</b>	
Wording	Attempts to be short, simple, and clear, specifies purpose of writing, length of response, how scored according to Bachman & Palmer's (1996) suggestion
<b>Mode</b>	
Transcription mode	Word-processor is used to study the impact of how writing on computers in a test situation would affect test takers. Must take into consideration what extent test takers are familiar with using computers. Give test takers a tutorial.
<b>Use of reference material</b>	No use of reference materials is allowed since the purpose of tests is not to check whether test takers use of such reference would affect their writing performance and process.

## Appendix B: The development of test prompts

Test prompts used in the T-CBWT were adapted from the following TOEFL Writing Topics<sup>1</sup>.

### Environmental issues

A company has announced that it wishes to build a large factory near your community. Discuss the advantages and disadvantages of this new influence on your community. Do you support or oppose the factory? Explain your position.

It has recently been announced that a large shopping center may be built in your neighborhood. Do you support or oppose this plan? Why? Use specific reasons and details to support your answer.

It has recently been announced that a new movie theater may be built in your neighborhood. Do you support or oppose this plan? Why? Use specific reasons and details to support your answer.

It has recently been announced that a new restaurant may be built in your neighborhood. Do you support or oppose this plan? Why? Use specific reasons and details to support your answer.

### Social issues

Do you agree or disagree with the following statement? Watching television is bad for children. Use specific details and examples to support your answer.

Do you agree or disagree with the following statement? Television, newspapers, magazines, and other media pay too much attention to the personal lives of famous people such as public figures and celebrities. Use specific reasons and details to explain your opinion.

Should governments spend more money on improving roads and highways, or should governments spend more money on improving public transportation (buses, trains, subways)? Why? Use specific reasons and details to develop your essay.

A company is going to give some money either to support the arts or to protect the environment. Which do you think the company should choose? Use specific reasons and examples to support your answer.

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<sup>1</sup> TOEFL Writing Topics are retrieved from:

<http://www.ets.org/Media/Tests/TOEFL/pdf/989563wt.pdf>

The following are parallel prompts that have been adapted from TOEFL Writing Topics. Five experts were asked to choose two parallel prompts they considered most suitable for the T-CBWT.

**Parallel prompts selection:**

**A1** It has been recently announced that street vendors selling food and all other items will from now on be permanently banned from selling on public streets and sidewalks of Bangkok. Discuss the advantages and disadvantages of this new restriction on your community. Do you agree or disagree with this new restriction? Why? Give specific reasons, examples and details to explain your opinion.

**A2** A company has announced that it wishes to build a large shopping center with movie theatres in your neighborhood, near your house. Discuss the advantages and disadvantages of this new influence on your community. Do you support or oppose this plan for your community? Why? Give specific reasons, examples and details to support your opinion.

**B1** There are many crime scenes and violence showed on television today, on the news and in local dramas or soap operas. Do you agree or disagree with violence being shown on television? Why? Give specific reasons, examples and details to support your opinion.

**B2** "Television, newspapers, magazines, and other media pay too much attention to the personal lives of famous people, such as public figures and celebrities." Do you agree or disagree with the previous statement? Why? Discuss the advantages and disadvantages of exposing or revealing celebrities' personal lives. Use specific reasons, examples and details to explain your opinion.

**C1** Should the Thai government spend more money on improving roads and highways, **or** should the government spend more money on improving public transportation (buses, trains, subways)? Why? Discuss the advantages and disadvantages of each. Use specific reasons, examples and details to explain your opinion.

**C2** Should a Thai company give some money to support the arts **or** to protect the environment. Which do you think the company should choose? Why? Discuss the advantages and disadvantages of each. Use specific reasons and examples to support your answer.

Prompts A1 and A2 were selected and adjusted prior to application in the study.

### Appendix C: Equivalency of test forms

Table A and B present the means and standard deviation on the test for the 2 counterbalanced forms during the pilot study. Table C presents Pearson Correlation statistics ( $r = 0.750$   $N = 30$ ,  $p < 0.01$ ), suggesting that the two forms are parallel.

**Table A**

<b>Pretest</b>			
FORMPRE	Mean	N	Std. Deviation
form A1	52.5667	15	6.04778
form A2	49.1000	15	7.89329
Total	50.8333	30	7.13043

**Note:** FORMPRE = Pretest, Form A1= on building a shopping center in the neighborhood, Form A2 = on banning street vendors

**Table B**

<b>Posttest</b>			
FORMPOST	Mean	N	Std. Deviation
Form A1	52.5667	15	6.04778
Form A2	49.8333	15	7.42096
Total	51.2000	30	6.79523

**Note:** FORMPRE = Pretest, Form A1= on building a shopping center in the neighborhood, Form A2 = on banning street vendors

**Table C**

<b>Correlations</b>			
		PRETEST	POSTTEST
PRETEST	Pearson Correlation	1	.750(**)
	Sig. (2-tailed)	.	.000
	N	30	30
POSTTEST	Pearson Correlation	.750(**)	1
	Sig. (2-tailed)	.000	.
	N	30	30

\*\* Correlation is significant at the 0.01 level (2-tailed).

## Appendix D: Table for determining sample size

Krejcie and Morgan's (1970)

TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	<b>500</b>	<b>217</b>	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

**Note:** N = population size  
S = sample size

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**Appendix E: Descriptive statistics, normality and homogeneity of variances of groups on pretest (CBWT) scores**

**Table 1 Descriptive statistics for Pretest (CBWT)**

GROUP			Statistic	Std. Error		
Pretest Scores	Facilitative Functions & Drafts	Mean	47.342	1.3867		
		95% Confidence Interval for Mean	Lower Bound	44.527		
			Upper Bound	50.157		
		5% Trimmed Mean	47.127			
		Median	47.300			
		Variance	69.225			
		Std. Deviation	8.3202			
		Minimum	32.6			
		Maximum	65.6			
		Range	33.0			
		Interquartile Range	9.750			
		Skewness	.227	.393		
		Kurtosis	-.229	.768		
		Drafts	Drafts	Mean	47.239	1.4590
				95% Confidence Interval for Mean	Lower Bound	44.277
Upper Bound	50.201					
5% Trimmed Mean	47.185					
Median	45.950					
Variance	76.636					
Std. Deviation	8.7542					
Minimum	27.6					
Maximum	66.6					
Range	39.0					
Interquartile Range	14.700					
Skewness	.228			.393		
Kurtosis	-.281			.768		
Facilitative Functions	Facilitative Functions			Mean	47.044	1.6108
				95% Confidence Interval for Mean	Lower Bound	43.774
		Upper Bound	50.315			
		5% Trimmed Mean	47.010			
		Median	45.800			
		Variance	93.412			
		Std. Deviation	9.6650			
		Minimum	27.0			
		Maximum	67.0			
		Range	40.0			
		Interquartile Range	12.725			
		Skewness	.183	.393		
		Kurtosis	-.418	.768		

GROUP		Statistic	Std. Error
Control Group	Mean	46.875	1.3702
	95% Confidence Interval for Mean	Lower Bound	44.093
		Upper Bound	49.657
	5% Trimmed Mean	46.905	
	Median	45.300	
	Variance	67.585	
	Std. Deviation	8.2210	
	Minimum	29.3	
	Maximum	62.0	
	Range	32.7	
	Interquartile Range	13.825	
	Skewness	.092	.393
	Kurtosis	-.620	.768

**Table 2 Test of Normal Distribution of Group on Pretest scores**

GROUP		Kolmogorov-Smirnov(a)			Shapiro-Wilks		
		Statistic	df	Sig.	Statistic	df	Sig.
Pretest Scores	Facilitative Functions & Drafts	.078	36	.200(*)	.976	36	.621
	Drafts	.109	36	.200(*)	.977	36	.642
	Facilitative Functions	.074	36	.200(*)	.984	36	.860
	Control Group	.117	36	.200(*)	.975	36	.589

\* This is a lower bound of the true significance.

a Lilliefors Significance Correction

**Table 3 Means and standard deviation of levels within each test group**

GROUP	Advanced N = 36		Intermediate N = 36		Low intermediate N = 36		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Facilitative functions & Drafts	57.53	4.96	46.55	2.19	37.95	4.26	47.34	8.32
Drafts	57.54	4.78	46.54	2.23	38.20	4.10	47.23	8.75
Facilitative functions	57.97	4.85	47.38	2.47	37.91	4.66	47.04	9.66
Control Group	57.84	4.89	46.67	2.45	38.40	4.25	46.87	8.22

**Table 4 Test of Homogeneity of Variances on Pretest Scores**

		Levene	df1	df2	Sig.
		Statistic			
Pretest Scores	Based on Mean	.365	3	140	.779
	Based on Median	.350	3	140	.789
	Based on Median and with adjusted df	.350	3	137.846	.789
	Based on trimmed mean	.361	3	140	.781

## Appendix F: Typing speed test

### 1. Typing Test Request

#### Test Your English Typing Speed

Computers have become being an important part of your everyday life. In the academic field, you will be typing more and more in English. So it may be important for you to know your typing speed so that you know how much improvement you need to make. Visit [Typingtest.com](http://www.typingtest.com) to find out what your typing speed is, for free!

Please follow these directions:

1. Enter the website <http://www.typingtest.com>.
2. Choose to type text #1 (See the text below.) Do not choose other texts.
3. Set the test duration at 3 minutes and speed unit as WPM
4. After typing, request for the results to be sent to your email.
5. When you get the results, please forward the results to the researcher's email address [tjarya@yahoo.com](mailto:tjarya@yahoo.com), indicating your name and ID number on your message.

#### ทดสอบความเร็วในการพิมพ์ดีดภาษาอังกฤษ

คอมพิวเตอร์ได้กลายเป็นส่วนประกอบที่สำคัญในชีวิตประจำวัน สำหรับแวดวงวิชาการแล้ว นับวันเราจะต้องพิมพ์ดีดภาษาอังกฤษมากขึ้นเรื่อย ๆ ดังนั้นการที่จะทราบความเร็วในการพิมพ์อาจเป็นประโยชน์เพื่อที่จะได้ทราบว่าควรต้องปรับปรุงทักษะการพิมพ์ดีด(ภาษาอังกฤษ)มากน้อยเพียงใด [Typingtest.com](http://www.typingtest.com) เป็นเว็บที่จะทดสอบความเร็วในการพิมพ์ภาษาอังกฤษของคุณให้ฟรี ๆ ลองเข้าไปทดสอบดูนะคะ

ให้ณิสิตทำตามขั้นตอนเหล่านี้

1. เข้าเว็บ <http://www.typingtest.com>
2. เลือกพิมพ์ ข้อความที่ 1 หรือ Text 1 (ดูตัวอย่างด้านล่าง)
3. ตั้งเวลาทดสอบเพียง 3 นาที (มีเวลาพิมพ์ 3 นาที ได้แค่ไหนก็แค่นั้น) และตั้งหน่วยความเร็วเป็น WPM
4. ลงมือพิมพ์ตาม ข้อความที่เขาให้มา เมื่อพิมพ์เสร็จแล้ว ขอให้เขาส่งผลการทดสอบไปที่emailของตัวเอง
5. เมื่อได้รับผลการพิมพ์แล้วกรุณาForward ไปให้ครูด้วยที่ [tjarya@yahoo.com](mailto:tjarya@yahoo.com)  
กรุณาระบุชื่อณิสิตและรหัสณิสิตด้วย

**Typing Text** (Strategic Alliances with Competitors by IMD Professor Peter Killing ©IMD, International Institute for Management Development, (May 2001) retrieved April 2006 from: <http://www.typingtest.com/test/default.asp>)

Many leading companies have dramatically expanded their alliance activities with competitors in the past few years. This trend is particularly prominent in consolidating global industries such as airlines, telecoms, automobiles and chemicals, but also in rapidly expanding Internet related industries featuring players like Cisco, Microsoft, and AOL.

## 2. Typing test website

TypingTest.com provided by TypingMaster

Typing Test | Typing Certificate | Typing Games | Typing Software

**Test Your Typing Skills**  
How fast can you type? Find out with our free typing test that works in your web browser\* and takes only a couple of minutes to complete.  
After the short text typing sample, you will see your typing speed, accuracy and net speed.

[> Start Typing Test](#) \* Java 1.1 required

**Accelerate your typing**  
Take your typing speed to a whole new level with TypingMaster Pro typing tutor. Free Trial Available!  
[Get free trial](#) [Tell me more](#)

**Typing Skills Certificate**  
Complete our [certified typing test](#) and get a printed certificate by mail to prove your typing skills

**Typing Test for Employers**  
Test job applicants' typing skills online with our [AssessTyping.com](#) test service. Try for free!

Accelerate Your Typing with TypingMaster Pro typing tutor [Free Trial >](#)

**TypingMaster Online Test**  
Please select test and duration and click Begin to continue.

**Test Settings**  
Test Duration:   
Test Text:   
Speed Unit:

Text by IMD Professor Jack D. Wood  
© IMD, International Institute for Management Development

[Begin >](#)

Time: 03:00  
Speed (WPM): 0

TypingMaster

TypingTest.com - Microsoft Internet Explorer


File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print

Address http://www.typingtest.com/default.asp


Search Web My MSN Form Fill (2) Spaces

TypingTest.com



## Accelerate Your Typing

with **TypingMaster Pro**  
typing tutor



[Free Trial >](#)

### Taking the Test

In both public and private organizations, we attempt to make decisions based on rigorous rational criteria, for example, by comparing costs and benefits, using economic models, market surveys, commissioned scientific research, public opinion polling, and so on. This rational view of decision-making would have us believe that when important issues are up for discussion we examine them logically and dispassionately - that the disagreements which occur in the course of our executive committee meeting arise from rational differences of opinion over, say, the technical aspects of an investment decision or organizational restructuring. Personal experience and empirical evidence do not support that view. On the contrary, underlying the apparent rationality of

---

IMD Professor Jack D. Wood

The test begins when you start typing. If no text appears, click here and start again.

Time  
**03:00**

Speed (WPM)  
**0**

[Next >](#)

**TYPING MASTER**

TypingTest.com - Microsoft Internet Explorer


File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print

Address http://www.typingtest.com/testdone.asp?acc=841nwpm=37&gwpn=441ncpm=189&gcpn=224&du=60&time=60&unit=wpm

Search Web My MSN Form Fill (2) Spaces

TypingTest.com

**TypingTest.com**
provided by  **TypingMaster**

[Typing Test](#)
[Typing Certificate](#)
[Typing Games](#)
[Typing Software](#)

**Test completed - here are your results:**

**Net Speed: 37 WPM**  
(words/minute)

**Accuracy: 84%**

**Gross Speed: 44 WPM**  
(words/minute)

[Print results](#)

[Start new test](#)

How much time do you spend typing daily?

By learning to touch type you could increase your speed to 60 WPM. This will save you:

39 minutes / day  
3 hours / week  
7 days / year

You can easily improve your typing speed with our [TypingMaster Pro typing tutor](#).

**Typing Skills Certificate**

Complete our certified typing test and get a printed certificate by mail to prove your typing skills.

**Accelerate Your Typing**

**Data Entry - \$6000 Mo**

No Experience. Earn \$200/Day & Work from Home.  
[Data Entry - Start Now!](#)  
[DataEntryPortal.com](#)

**Practice Typing Test**

Get All The Latest Info On Practice Typing Test Here  
[Learning TitanFacts.com](#)

**Typing Jobs**

Receive \$1750 - \$7000 weekly. Work from home 1-2 hrs daily. Start now  
[www.MyFastCash.biz](#)

Ads by Google

**PADOS ADD ADHD Screens**

Evidence based ADHD assessment tool Target Tests of Executive Functions  
[www.TargetTest.com](#)

**Workplace Inaptitude Test**

Test for Employee Performance - not just for drug and alcohol use.  
[www.cogetate.com](#)



## Appendix G: Relationship between typing speed & number of words typed in pretest: Scatterplot and statistics

Figure A

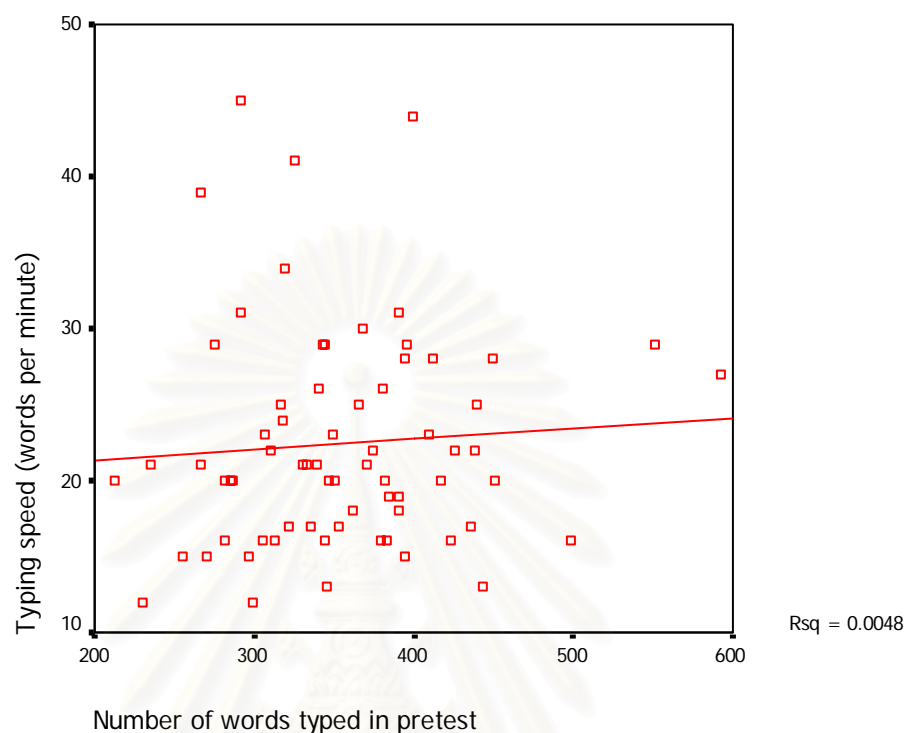


Table A Correlation between Typing Speed and Number of Words Typed in Pretest

Correlations(a)			
		Typing speed (words per minute)	Number of words typed in pretest
Typing speed (words per minute)	Pearson Correlation	1	.069
	Sig. (1-tailed)	.	.286
Number of words typed in pretest	Pearson Correlation	.069	1
	Sig. (1-tailed)	.286	.

a. Listwise N=69

### **Typical Interpretation:**

One old classic and typical interpretation of "**r**" is as follows:

"r" ranging from zero to about .20 may be regarded as indicating *no or negligible correlation*.

"r" ranging from about .20 to .40 may be regarded as indicating *a low degree of correlation*.

"r" ranging from about .40 to .60 may be regarded as indicating *a moderate degree of correlation*.

"r" ranging from about .60 to .80 may be regarded as indicating *a marked degree of correlation*.

"r" ranging from about .80 to 1.00 may be regarded as indicating *high correlation*.

A. Franzblau (1958), *A Primer of Statistics for Non-Statisticians*, Harcourt, Brace & World. (Chap.7) *Italics in original.*

## Appendix H: Relationship between Typing Speed and Pretest Scores: Scatterplot and Statistics

Figure A

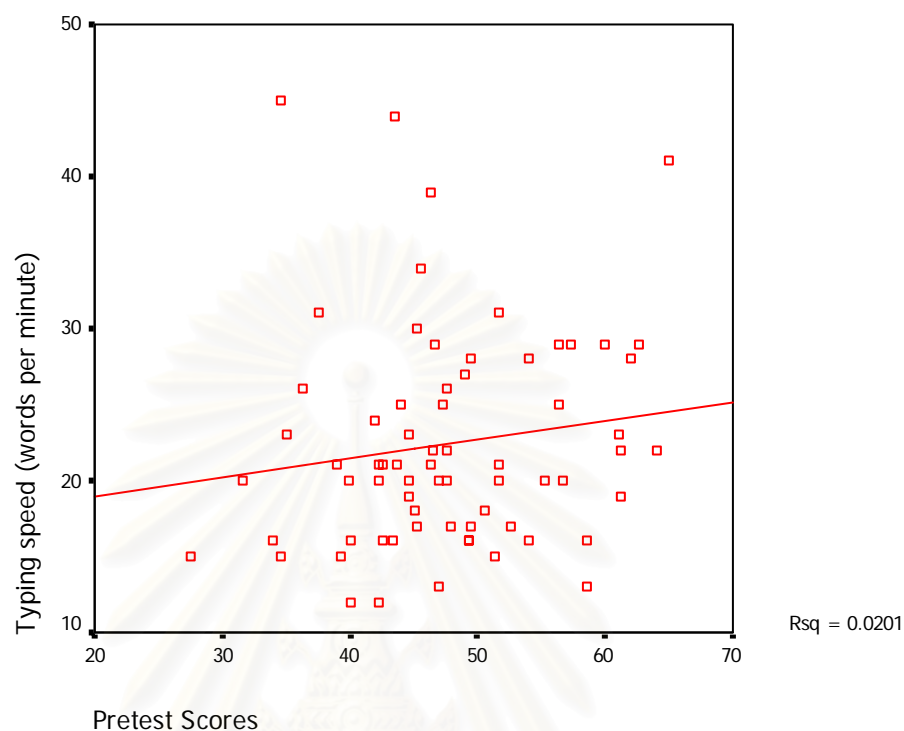


Table A  
Correlation between Typing Speed and Pretest Scores

<b>Correlations(a)</b>			
		Typing speed (words per minute)	Pretest Scores
Typing speed (words per minute)	Pearson Correlation	1	.142
	Sig. (1-tailed)	.	.122
Pretest Scores	Pearson Correlation	.142	1
	Sig. (1-tailed)	.122	.

a Listwise N=69

### **Typical Interpretation:**

One old classic and typical interpretation of "**r**" is as follows:

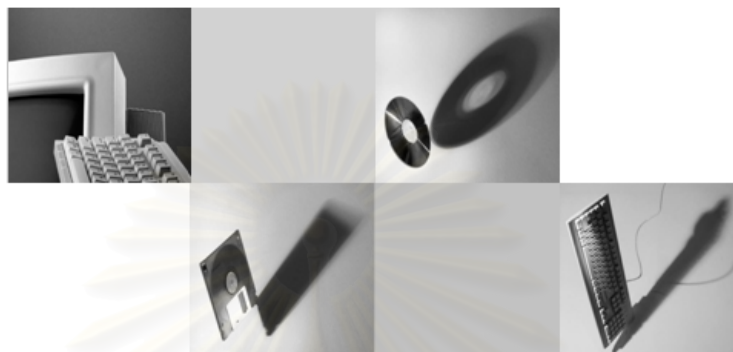
- "r" ranging from zero to about .20 may be regarded as indicating *no or negligible correlation*.
- "r" ranging from about .20 to .40 may be regarded as indicating *a low degree of correlation*.
- "r" ranging from about .40 to .60 may be regarded as indicating *a moderate degree of correlation*.
- "r" ranging from about .60 to .80 may be regarded as indicating *a marked degree of correlation*.
- "r" ranging from about .80 to 1.00 may be regarded as indicating *high correlation*.

A. Franzblau (1958), *A Primer of Statistics for Non-Statisticians*, Harcourt, Brace & World. (Chap.

7) *Italics in original.*

## Appendix I: Power point slideshow orientation: Selected slides

## The Test Taker-centered Computer-based Writing Test (T-CBWT) with Functions and Drafts



การประเมินการเขียนภาษาอังกฤษผ่านสื่อคอมพิวเตอร์  
โดยมีผู้สอบเป็นศูนย์กลาง  
ประเภทมีฟังก์ชันช่วยและเขียนร่างหลายฉบับ

### Introduction

การสอบนี้เป็นส่วนหนึ่งของการวิจัยเพื่อประเมินว่าการใช้สื่อ  
คอมพิวเตอร์ในการสอบเขียนภาษาอังกฤษโดยใช้ฟังก์ชันช่วย และ  
เขียนร่างหลายฉบับนั้นมีผลอย่างไรต่อการเขียนของนิสิต

ผลจากการสอบครั้งนี้จะไม่กระทบเกรดของนิสิตแต่อย่างใด

☺ ขอขอบคุณที่นิสิตเป็นส่วนหนึ่งของงานวิจัยนี้โดยตลอด ☺



## Evaluation of the Essay

### การประเมินเรียงความของนิสิต

ในการสอบทั้งสองครั้ง (pretest และ posttest) ผู้วิจัยสนใจจะศึกษาทักษะการเขียนภาษาอังกฤษของนิสิต โดยจะประเมิน:

1. เนื้อหาสาระ: ชัดเจน เพียงพอ มีน้ำหนัก
2. การเรียบเรียงเนื้อหา: จัดลำดับความคิดเป็นระบบ ความคิดริเริ่ม มีความเชื่อมโยง
3. การใช้ภาษา: รูปประโยค คำเชื่อม คำศัพท์ ไวยากรณ์ และ ตัวสะกด ถูกต้อง เหมาะสม



5

## Using Facilitative Functions

### การสอบเขียนโดยใช้ฟังก์ชันช่วย

เป็นการสอบที่ให้นิสิตเลือกใช้ฟังก์ชัน เพื่อช่วยในการเขียนได้ 5 อย่าง โดยมีแนวคิดว่าหากนิสิตได้ใช้ฟังก์ชันช่วยในการเขียนสอบเช่นเดียวกับเวลาที่นิสิตเขียนในสถานการณ์ปกติ นอกห้องสอบนั้น นิสิตจะเขียนได้กว่าการไม่มีโอกาสได้ใช้ฟังก์ชันเลย ฟังก์ชันช่วย 5 อย่างได้แก่

1. Translation พจนานุกรม อังกฤษ – ไทย
2. Thesaurus พจนานุกรมคำพ้อง/อรรถาภิธาน
3. Spell Check การตรวจสอบคำสะกด
4. Grammar Check การตรวจสอบไวยากรณ์
5. Self-reflective questions (ชุดคำถามเตือน)

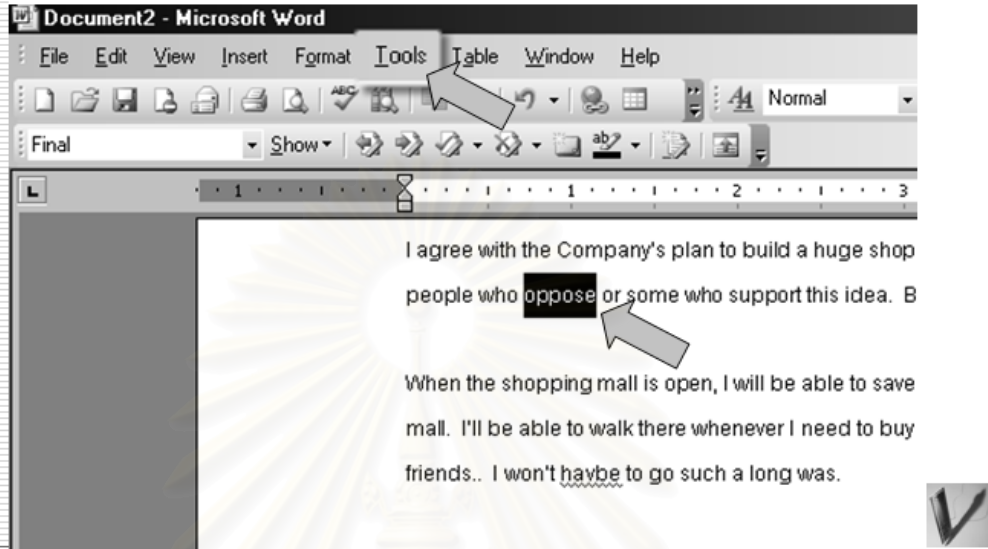


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## Translation/Dictionary

1. Translation พจนานุกรม อังกฤษ – ไทย นี้สามารถหาความหมายของคำได้โดย

Highlight หรือคลิกให้ Cursor อยู่ที่คำที่ต้องการแปล > คลิก Tool > เลือก Language > คลิก Translate

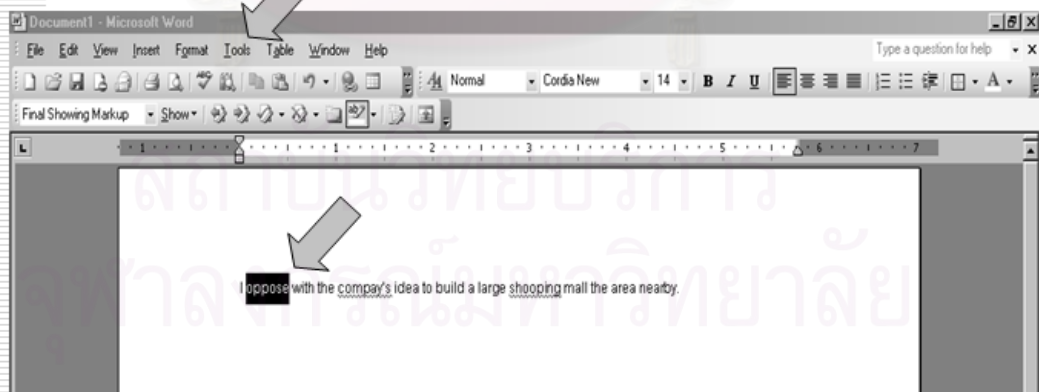


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## Thesaurus

2. Thesaurus พจนานุกรมคำพ้อง/ตรงกันข้าม ถ้าเราต้องการใช้คำเดิม ๆ หรือต้องการใช้

คำศัพท์ที่หลากหลาย นี้สามารถหาคำพ้องหรือคำที่มีความหมายเหมือนหรือคล้ายกันได้ โดย:



Highlight หรือ คลิกให้ Cursor อยู่ที่คำที่ต้องการหาความหมายเหมือน คลิก Tools บนหน้าจอ MS Word > เลือก Language > เลือกคลิก Thesaurus

ตัวอย่าง: เราอยากใช้คำอื่น ๆ ที่เราสามารถจะใช้แทนคำว่า oppose



## Spell Check

การแก้ไขคำสะกดโดยใช้ฟังก์ชัน **Spell Check** สามารถทำได้โดยคลิกปุ่มขวาของเมาส์ ตรงคำที่โปรแกรมขีดเส้นใต้สีแดง โปรแกรมจะแสดงเมนูคำที่ถูกต้อง แล้วเลือกปฏิบัติดังนี้

- ถ้าปรากฏคำที่ถูกต้องในรายการ ให้คลิกเมาส์ขวาที่คำที่ถูกต้อง แล้วคลิก โปรแกรมจะแก้ไขคำให้อัตโนมัติ
- ถ้าคำที่โปรแกรมตรวจสอบเป็นคำที่ถูกต้อง แสดงว่าคำนั้นไม่มีในพจนานุกรม สามารถเลือกปฏิบัติได้ดังนี้
  - เลือกคำสั่ง **Ignore All** เพื่อละเว้นการตรวจสอบ
  - เลือกคำสั่ง **Add** เพื่อเพิ่มคำนั้นลงในพจนานุกรมเมื่อแน่ใจว่าคำนั้นสะกดถูกและมีจริง



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## Grammar Check

### 4. Grammar Check การตรวจสอบไวยากรณ์และวรรคตอน

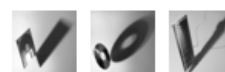
โปรแกรม **Word** มีฟังก์ชันตรวจสอบไวยากรณ์ขณะที่พิมพ์ข้อมูลให้โดยอัตโนมัติ โดยจะแสดงผลเป็นเส้นใต้สีเขียว เพื่อแสดงข้อสงสัยว่าผิดไวยากรณ์หรือวรรคตอน ดังนี้

โปรแกรม Word มีฟังก์ชันตรวจสอบคำสะกดและไวยากรณ์ขณะที่พิมพ์ข้อมูล

การแก้ไขคำที่ผิดไวยากรณ์ โดยใช้ฟังก์ชัน **Grammar Check** ซึ่งมีจะเป็นคำที่มีช่องว่าง หรือ ใช้เครื่องหมายวรรคตอน ผิดพลาด ก็สามารถปฏิบัติได้โดย:

คลิกปุ่มขวาของเมาส์ ตรงคำที่โปรแกรมขีดเส้นใต้สีเขียว  
คลิกปุ่มขวาของเมาส์ ตรวจสอบ แล้วเลือกข้อเสนอแนะที่ถูกต้อง หรือแก้ไขด้วยตนเอง

ทั้งนี้ผู้ใช้จะต้องใช้วิจารณญาณ หรือความรู้ทางภาษาและไวยากรณ์ที่มีอยู่ในการเลือกสิ่งที่โปรแกรมแนะไว้



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## Self-reflective Questions

### 5. Self-reflective questions (ชุดคำถามเตือน)

คือ ชุดคำถาม (แนบมากับข้อ สอบ) ที่จะช่วยเตือนให้นิสิตทำตามขั้นตอนที่จำเป็น หรือ ขั้นตอนที่ยังกระทำเวลาเขียนเรียงความ

นิสิตสามารถเปิดดู เพื่อเป็นการเตือนตัวเองในระหว่างเขียนแต่ละร่าง และตรวจเช็คข้อต่าง ๆ เฉพาะเวลาที่ได้ทำตามคำแนะนำในแต่ละข้อแล้วเท่านั้น

เพื่อให้ได้ร่างที่ดีที่สุด นิสิตสามารถย้อนกลับมาดูได้ทุกครั้งที่ต้องการ



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## Draft Writing

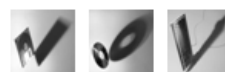
### เขียนโดยร่างหลายครั้งทำอย่างไร?

ลักษณะของการเขียน essay โดยร่างหลายฉบับนั้นเป็นดังนี้

- เน้นเขียนเฉพาะเนื้อหาในร่างแรก
- เน้นเฉพาะการเรียบเรียงลำดับความคิดในร่างที่สอง และ
- เน้นเฉพาะการปรับแก้ไวยากรณ์ในร่างสุดท้าย

เมื่อนั้นเขียนและปรับแก้ไปทีละอย่างแบบนี้ จะทำให้นิสิตได้โฟกัสเป็นจุด ๆ ไป ซึ่งมีส่วนช่วยให้งานเขียนออกมาดี

ดังนั้นในการสอบครั้งนี้จึงให้นิสิตทำตามขั้นตอนอย่างเคร่งครัด ทั้งหมด 4 ขั้นตอนดังนี้



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## Draft Writing Instructions

### ขั้นตอนที่ 1: เขียนโครงร่าง (Outline)

ในขั้นตอนนี้ ให้นักวางแผนว่าจะเขียนอะไรบ้างโดยพิมพ์โครงร่าง (outline) คร่าว ๆ ลงในหน้าจอ Microsoft Word

ผู้วิจัยจะไม่ตรวจประเมินไวยากรณ์ของ outline และไม่กำหนดรูปแบบของ outline แต่ให้เขียนโครงร่าง outline ในแบบของตัวเอง เหมือนเวลาเขียนบทความความคิดเห็นไว้บนกระดาษ เพื่อช่วยในการเรียบเรียงความคิดเบื้องต้นก่อน

- เมื่อร่าง Outline เสร็จแล้วขอให้พิมพ์
  - Save โครงร่าง (Outline)
 โดย save ไว้ใน file บนหน้าจอ (Desktop) และตั้งชื่อ file ว่า Outline + ชื่อ + รหัสประจำตัวนิสิต

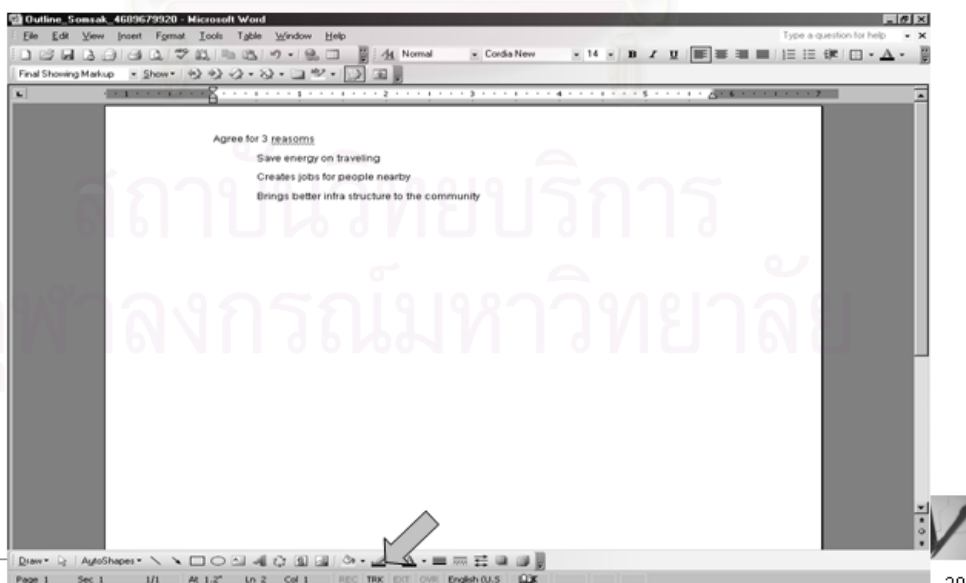
ตัวอย่าง: outline\_somsak\_4689679920



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## Instructions: Turning on Track Changes

เปิด TRK (Track Changes) ก่อนลงมือเขียน 1st Draft และ ทุกครั้งก่อนเขียน Draft อื่น ๆ บนหน้าจอ (Window) เดียวกับโครงร่าง (Outline) ของนิสิต ให้ไปที่แถบ Toolbar/Status bar ด้านล่าง และ Double click ที่ตัว TRK สีเทา เพื่อเปิดฟังก์ชัน Track Changes เมื่อ TRK เปิดอยู่จะเป็นสีดำ



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## Saving Your 1<sup>st</sup> Draft

เมื่อนิสิตได้ทำสิ่งเหล่านี้แล้ว

เปิด TRK

ปิดตัวแดง

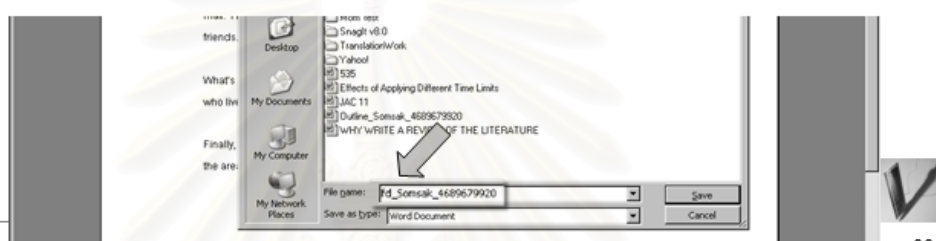
เปลี่ยน User Info.

เริ่มพิมพ์ร่างแรกได้โดยพิมพ์ทับ Outline ได้เลย  
ไม่ต้องขึ้น file/document ใหม่ ให้เขียนบนหน้าจอ (window) เดิมตลอดการสอบ

ณ ตอนนั้นนิสิตควรจะมี file ที่ save ไว้บน desktop แล้วทั้งหมด 2 files ด้วยกัน  
คือ

1. outline

2. fd หรือ first draft



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## Instructions: Before Writing

วิธีทำ

- ใช้โปรแกรม Microsoft Word เขียนเรียงความภาษาอังกฤษเชิงวิเคราะห์ วิจารณ์ยาวประมาณ 1 หน้าถึง 1 หน้า ½ (350 คำ)
- มีเวลาเขียนทั้งหมด 90 นาที หรือ 1 ชั่วโมงครึ่ง กรุณาจับเวลาเอง และบริหารเวลาให้ดี
- ในการสอบ posttest แบบเขียนร่างหลายฉบับ นี้อนุญาตให้ใช้ฟังก์ชันช่วยเหลือใน Microsoft Word รวมถึง self-reflective questions ห้ามเปลี่ยนแปลงการตั้งค่าอื่น ๆ ของโปรแกรม Microsoft Word นอกจากที่ได้กำหนดไว้ อย่างอื่นจะตั้งไว้ให้เรียบร้อยแล้ว
- นิสิตสามารถเขียนทดได้บนกระดาษสอบ



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## Instructions: Before leaving

ก่อนออกจากห้องสอบ ขอให้นิสิตทำตามลำดับดังนี้

1. ตรวจสอบว่า ชื่อและรหัสนิสิตอยู่บนมุมบนขวาของเรียงความทุกหน้า
2. ตรวจสอบว่าได้ save file บนหน้าจอ (Desktop) ไว้แล้วทั้งหมด 4 files ด้วยกัน คือ Outline, 1st Draft, 2nd Draft และ 3rd Draft
3. กรอกแบบสอบถาม
4. กรอกแบบสอบถามแล้วกรุณาส่งตัวข้อสอบพร้อมแบบสอบถามที่ครู
5. หากยังไม่ได้ทำ typing speed test ให้รับ sheet แนะนำ website ชุดใหม่กลับไปด้วย
6. ครูอาจจะติดต่อ นิสิตมาสัมภาษณ์เกี่ยวกับการสอบเขียนในภายหลัง เป็นการพบกันครั้งสุดท้าย



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## You may begin. Do your best!

หายใจลึก ๆ และตั้งใจทำให้ดีที่สุดเท่าที่จะทำได้นะคะ ให้เหมือนการสอบจริง

นิสิตจะได้รับทราบผลสอบทั้งสองครั้งค่ะ ขอขอบคุณมากสำหรับความร่วมมือ และความตั้งใจที่มีมาโดยตลอด 😊



นิสิตสามารถกลับมาดู TTC Power Point Presentation อันนี้ ได้ ทุกครั้งที่ต้องการ  
หรือข้อมืออถามครูเมื่อมีคำถาม



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## Appendix J: CBWT (Pretest) instructions and prompt: Sample

### ทดสอบเขียนภาษาอังกฤษโดยใช้คอมพิวเตอร์

### Computer-based Writing Test (CBWT Pretest)

About the CBWT เกี่ยวกับการสอบ:

- ใช้โปรแกรม Microsoft Word เพื่อเขียนเรียงความภาษาอังกฤษเชิงวิเคราะห์วิจารณ์ ประมาณ 350 คำ หรือ 1 หน้า ถึง 1 หน้าครึ่ง
- ผู้สอบมีเวลาเขียนทั้งหมด **1 ชั่วโมงครึ่ง (90 นาที)** ผู้สอบควรเขียนเสร็จภายใน \_\_\_\_\_ น. กรุณาจับเวลาเอง และ บริหารเวลาให้ดีนะคะ
- **ไม่**ให้นิสิตใช้ฟังก์ชันช่วย เช่น Spell-check, Grammar-check หรืออื่นๆ ในคราวนี้ **ห้าม**เปลี่ยนแปลงการตั้งค่าของโปรแกรม **Microsoft Word** ทุกอย่างจะได้รับการตั้งไว้เรียบร้อยแล้ว
- เมื่อผู้สอบเขียนเสร็จแล้วให้ save ที่เขียนเสร็จไว้ใน file ใหม่เช่นเดียวกับที่ได้แจ้งไว้ในการอบรม ให้ผู้สอบตั้งชื่อ file ของตัวเองโดยใช้ ชื่อนามสกุล และรหัสประจำตัวนิสิต ของผู้สอบ และให้ save file ของตนไว้บนหน้าจอ (Desktop) ต.ย: **Somsri 468 96799 20**
- นิสิตสามารถเขียนทดได้บนกระดาษชุดนี้

ขอบคุณมากสำหรับความร่วมมือค่ะ ☺

## โจทย์

## CBWT Pretest Prompt

A company has announced<sup>2</sup> that it wishes to build a large shopping center with movie theatres and a bowling alley right in your neighborhood<sup>3</sup>, very near your house. Do you support or oppose<sup>4</sup> this plan for your community<sup>5</sup>? Why? Give at least **three** specific<sup>6</sup> reasons to explain your opinion, including substantial<sup>7</sup> examples and details<sup>8</sup> in order to be convincing<sup>9</sup>. Make sure you address<sup>10</sup> all parts of the prompt.



สถาบันวิทยบริการ  
จุฬาลงกรณ์มหาวิทยาลัย

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<sup>2</sup> ประกาศ

<sup>3</sup> หมู่บ้าน

<sup>4</sup> ค้าน

<sup>5</sup> ชุมชน

<sup>6</sup> เฉพาะเจาะจง

<sup>7</sup> แน่นหนา มากมาย

<sup>8</sup> รายละเอียด

<sup>9</sup>หนักแน่นน่าเชื่อถือ

<sup>10</sup> ตอบ

## Appendix K: T-CBWT instructions and prompt: Sample

### ทดสอบเขียนภาษาอังกฤษโดยใช้สื่อคอมพิวเตอร์และมีผู้สอบเป็นศูนย์กลาง Test taker-centered computer-based writing test (T-CBWT Posttest) With Functions and Drafts

About the T-CBWT เกี่ยวกับการสอบ:

- ให้ใช้โปรแกรม Microsoft Word เพื่อเขียนเรียงความภาษาอังกฤษเชิงวิเคราะห์วิจารณ์ ประมาณ 350 คำ หรือ 1 หน้า ถึง 1 หน้าครึ่ง
- ผู้สอบมีเวลาเขียนทั้งหมด 1 ชั่วโมงครึ่ง (90 นาที) ผู้สอบควรจะเขียนเสร็จภายใน \_\_\_\_\_ น. กรุณาจับเวลาเอง และ บริหารเวลาให้ดีนะคะ
- ห้ามเปลี่ยนแปลงการตั้งค่าของโปรแกรม Microsoft Word ทุกอย่างจะได้รับการตั้งไว้เรียบร้อยแล้ว
- นิสิตสามารถใช้ฟังก์ชันช่วยต่าง ๆ ที่ได้แนะนำไว้ใน Power Point ได้ตลอดเวลาที่เขียน ฟังก์ชันช่วยได้แก่ Dictionary (หรือ Translation), Thesaurus (พจนานุกรมคำเหมือน), Spell-check (ตรวจ “การสะกด”) Grammar-check (ตรวจ “ไวยากรณ์”) และ Self-reflective Questions (ชุดคำถามเตือน)
- นิสิตสามารถปรับแก้การเขียนได้ในร่าง 3 ฉบับโดยทำตามขั้นตอนใน Instruction Sheet อย่างเคร่งครัด
- นิสิตสามารถเขียนทดได้บนกระดาษชุดนี้
- ทำให้ดีที่สุดเท่าที่จะทำได้นะคะ ผู้สอบจะได้รับผลคะแนนสอบคืนค่ะ 😊

ขอบคุณมากสำหรับความร่วมมือ และความตั้งใจค่ะ ☺

## โจทย์

## T-CBWT Posttest Prompt:

It has recently<sup>1</sup> been announced that street vendors<sup>2</sup> selling food and all other items will from now on be permanently<sup>3</sup> banned<sup>4</sup> from selling on public streets and footpaths of Bangkok. Do you agree or disagree with this new restriction<sup>5</sup> on your community<sup>6</sup>? Why? Give at least **three** specific reasons to explain your opinion, including substantial<sup>7</sup> examples and details<sup>8</sup> in order to be convincing<sup>9</sup>. Make sure you address<sup>10</sup> all parts of the prompt.




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<sup>1</sup> เมื่อเร็ว ๆ นี้

<sup>2</sup> พ่อค้าแม่ค้า รถเข็น หาบเร่ริมทาง

<sup>3</sup> อย่างถาวร

<sup>4</sup> ห้าม

<sup>5</sup> กฎข้อบังคับ

<sup>6</sup> ชุมชน

<sup>7</sup> มากมาย หนาแน่น

<sup>8</sup> รายละเอียด

<sup>9</sup> หนักแน่นน่าเชื่อถือ

<sup>10</sup> ตอบ

## Appendix L: Analytical Rating Scale

### Writing Ability Rubric: An Analytic Rating Scale

I. Content					
Band Scores	5 Proficient/Near native 10-9	4 Competent 9-7	3 Moderate 6-5	2 Flawed 4-3	1 Limited 2-1
<b>Clarity &amp; explicitness (10)</b> - Clear position - Explicit purpose: fully addresses topic & task - Convincing arguments	- Position is <b>clear</b> - <b>Explicit: very thoroughly</b> addresses topic & task/explores issues thoughtfully - Arguments in each paragraph are <b>very convincing</b> ; shows <b>substantial</b> depth & complexity of thought (3 convincing main ideas given)	- Position is <b>clear</b> - <b>Not as explicit</b> but <b>specifically</b> addresses topic & task/explores relevant issues - Arguments in each paragraph are <b>not as thoroughly argued but still convincing</b> ; ideas reflect <b>some depth</b> & complexity (3 convincing main ideas given)	- Position is <b>stated or implied</b> (may be confusing) - <b>Moderately explicit</b> ; <b>generally</b> addresses topic & task/ <b>generally</b> explores issues - Arguments <b>moderately in depth/moderately convincing</b> ; shows complexity but may lack clarity (3 main ideas given/not all are convincing)	- Position is <b>unclear</b> - <b>Inexplicit</b> ; many parts <b>under illustrated/unclear</b> ; distorts or neglects to answer the question; <b>only generally addresses topic</b> - Points of argument are made but <b>vague or unconvincing</b> ; may repeatedly address the same argument (3 ideas supporting thesis stem from one main idea)	- Position is <b>not stated</b> - Demonstrates <b>thin content/ fails to discuss topic</b> - Content is <b>hard to understand</b> ; no clear or convincing arguments; may <b>show little understanding of the question</b> or may deliberately be <b>off-topic</b> (3 ideas given but irrelevant or do not address topic)
<b>Topic development &amp; supportive examples (10)</b> - <b>Relevant information</b> - <b>Development of content in response to the topic &amp; task with supporting details/evidence/examples</b>	- <b>Very thoroughly developed/elaborated</b> - Relevant, <b>substantial, persuasive</b> supporting examples & details for all points - <b>Sophisticated &amp; critical</b> development of the topic, maintaining effective use of detail throughout paper	- <b>Logically &amp; well developed</b> ; there is more space for elaboration - Relevant, <b>sufficient &amp; sensible, logical</b> supporting examples & details - <b>Provides detail &amp; support quite effectively, but not critically</b> , could use additional details on occasion to reach sophistication	- <b>Only adequately developed</b> ; should be more fully developed - Relevant, <b>adequate &amp; acceptable</b> examples & details; some points are not fully developed; some points are illogical - <b>Adequate supporting examples &amp; details</b> given; <b>needs to elaborate more</b> on some points, adding detail to complete argument	- <b>Insufficiently developed</b> - May contain <b>irrelevant, illogical or misleading</b> information - <b>Lacks sufficient development</b> ; supporting details insufficient; <b>does not go far enough to support major points</b> . Only 1 sentence given to support each reason given	- <b>Limited development/ underdeveloped</b> ; does not develop or support an argument - <b>Little or no detail given; or detail is irrelevant</b> ; too specific or too general

**Note:** 0 points if test taker does not produce any produce any writing /does not write on given topic/merely copies words from the prompt/writes in a foreign language/ consists of keystroke characters. The total score for writing ability is 90 points. This is to be used with Individual Scoring Sheet.

This scale has been adapted by Tanyaporn Arya from several holistic and analytical writing rubrics: (i.e. (1) Kim (2002) (2) Michigan Writing Assessment Scoring Guide (3) Chulalongkorn University Language Institute's Scoring Scale for the Foundation English Course (4) Writing Competency Exam Holistic Rating Scale (Retrieved August 2006) (5) Idaho State University Writing Center Holistic Rating Scale (Retrieved August 2006) (6) PSAT A Writing Performance Definition (Retrieved August 2006) (7) TOEFL iBT Test- Independent Writing Rubrics (2005))



2. Organization (10)					
Band Scores	5 Proficient/Near native 10-9	4 Competent 9-7	3 Moderate 6-5	2 Flawed 4-3	1 Limited 2-1
<b>Rhetorical organization (10)</b> - <b>Clarity of central idea</b> /main thesis statement - <b>Order</b> of ideas - Effectiveness of <b>paragraph distinctions</b> (or introduction/body/conclusion distinctions)	- Main thesis is <b>clear</b> - <b>Well organized</b> : arranges idea in an <b>effective order</b> , clear to the audience - Divides topic <b>effectively</b> into <b>distinct purposeful</b> paragraphs with <b>effective topic sentences</b>	- Main thesis is <b>clear</b> - <b>Generally well organized</b> : arranged ideas in a <b>suitable order</b> (least to most salient) clear to the audience - Divides topic into <b>distinct paragraphs</b> each conveys <b>appropriate topic sentences</b>	- Main thesis is <b>stated</b> ; central ideas recognizable - <b>Somewhat well organized</b> ; provides a <b>recognizable</b> organization - Divide topic into <b>distinct paragraphs</b> , showing recognizable beginning and/of ending; paragraphs <b>may or may not have clear topic sentence.</b>	- Main thesis is <b>not clearly stated</b> - <b>Inadequate organization</b> ; ideas are <b>not well-organized</b> into a suitable order - Irregular or too frequent paragraphing , <b>without distinct purposeful paragraphs</b>	- <b>No main thesis statement</b> - <b>Serious disorganization</b> : provides <b>no recognizable organization</b> - Only one or two paragraphs are written and <b>without distinct purpose; no sense of beginning or ending is provided</b>
<b>Coherence (10)</b> - <b>Organization</b> : Logical sequencing/flow of ideas - <b>Well-connected series of ideas</b> through the use of transitions between paragraphs	- <b>Logical &amp; flowing</b> ; ideas are sequenced in a logical & effective manner - <b>Smooth</b> transitions - Series of ideas are <b>well-connected logically, using proper sequence/transition sentences/transition markers thoroughly</b> throughout the text	- <b>Logical but plain</b> ; sequences ideas logically - <b>Quite smooth</b> ; may contain digressions - Only a few illogically connected ideas, if any, <b>using proper markers of transitions which connect ideas clearly</b>	- <b>Logical, not flowing</b> ; attempts an understandable sequence - <b>Occasional redundancy &amp; choppiness</b> - Most <b>transition markers are used correctly but does not contribute to smooth transitions</b> ; may have some illogically connected ideas	- <b>Illogical, not flowing or flowing but illogical</b> ; sequence is not understandable or ideas are repeated - Frequent redundancy & choppiness - Series of ideas are <b>not well-connected</b> due to confusing usage/ inadequate usage/ or incorrectly used transition markers	- <b>No logical flow</b> within passage or paragraph; confusing sequence - <b>Incomprehensible, confusing</b> - Parts of essay are poorly connected; <b>little or no use of transition markers</b> ; sentences are disjointed.

90-73

72-55

54-37

36-19

18-1

This scale has been adapted by Tanyaporn Arya from several holistic and analytical writing rubrics: (i.e. (1) Kim (2002) (2) Michigan Writing Assessment Scoring Guide (3) Chulalongkorn University Language Institute's Scoring Scale for the Foundation English Course (4) Writing Competency Exam Holistic Rating Scale (Retrieved August 2006) (5) Idaho State University Writing Center Holistic Rating Scale (Retrieved August 2006) (6) PSAT A Writing Performance Definition (Retrieved August 2006) (7) TOEFL iBT Test- Independent Writing Rubrics (2005))

### 3. Language use (50)

Band Scores	5 Proficient/Near native 10-9	4 Competent 9-7	3 Moderate 6-5	2 Flawed 4-3	1 Limited 2-1
<b>Sentence structure (10)</b> - <b>Complete:</b> accurate sentence structures - <b>Clear:</b> appropriate use of word order in complex sentences (e.g. subordination, relative clauses.) - <b>Varied</b> range of sentence structure and length	- <b>Complete, accurate</b> sentences - <b>Effective;</b> structures sentences clearly - <b>Varied</b> sentence length & structure	- Overall, complete & accurate sentences; <b>may contain 1 or 2 run-ons or fragments that do not interfere with meaning</b> - <b>Structures sentences clearly</b> - <b>Varied</b> sentence length & structure	- Sentences are usually complete; <b>may contain some run-ons or fragments that obscure meaning</b> - Complex sentences <b>may contain some errors</b> - <b>Some variation</b> in sentence length & structure	- <b>Writes sentences that are run-ons or fragments in ways that obscure meaning</b> - <b>Many inaccurate</b> uses of complex sentence structures - <b>Not varied</b> in sentence length or structure	- Uses <b>sentences that obscure meaning</b> or - <b>Too few sentences</b> to make a reliable judgment - <b>All simple sentences; many run-ons or fragments</b> that do not make sense; may <b>overuse connectives</b> (e.g. and, but, because)
<b>Cohesion (10)</b> - <b>Adequate</b> cohesive ties across clauses/ within sentences - <b>Appropriate</b> and - <b>Varied</b> use of cohesive devices including transition words, substitution, ellipsis (omission of an item that can be inferred), lexical cohesion	- <b>Accurate, well-chosen, effective</b> and - <b>Varied</b> cohesive devices to link ideas within sentences - <b>Almost no errors</b> in the use of cohesion	- <b>Adequate &amp;</b> - <b>Varied uses</b> of cohesive devices to link ideas within sentences - <b>Occasional errors</b> or <b>inappropriate</b> uses of cohesion	- <b>Moderate use</b> of cohesive devices to link ideas within sentences - Usage <b>not so varied</b> - <b>Some errors</b> in the use of cohesion	- <b>Some</b> cohesive devices used to link ideas within sentences - <b>Inadequate uses</b> or many <b>inaccurate</b> uses or <b>repetitive</b> uses of the same device	- All uses of cohesive devices are <b>inaccurate</b> or - <b>Lack</b> of uses of cohesion
<b>Vocabulary (10)</b> - <b>Varied</b> range - <b>Word choice:</b> accuracy/ appropriateness - <b>Style:</b> academic/sophisticated/ colorful words, formulaic register, idioms used	- <b>Varied</b> - <b>All appropriately &amp; accurately</b> used words - <b>Well-chosen sophisticated</b> academic vocabulary, <b>including formulaic expressions, lively verbs, precise nouns &amp; descriptive modifiers</b>	- <b>Varied</b> - <b>Appropriate</b> to audience & purpose; <b>a few inaccurate uses</b> of word choice - Well-chosen vocabulary; <b>somewhat</b> sophisticated, academic & formulaic; <b>somewhat</b> descriptive	- <b>Moderately varied</b> - Generally chooses appropriate & correct words; <b>some inaccurate</b> word choice or <b>informal spoken language</b> - Including <b>some</b> sophisticated, formulaic & academic expressions but <b>overall lacking flair</b>	- <b>Narrow range</b> of vocabulary; <b>repeats words</b> - <b>Inappropriate word choice</b> often <b>imprecise or vague</b> - <b>A majority of</b> unsophisticated words, a few academic or formulaic words here & there; <b>may use clichés or slang</b>	- <b>Limited range</b> of vocabulary, <b>mostly simple words</b> - Word choice <b>does not convey writer's meaning</b> or <b>not enough words written</b> to indicate writers' vocabulary knowledge - <b>May overuse jargon or clichés</b>
<b>Grammar (10)</b> <b>Concerns syntax &amp; morphology</b> - <b>Major errors:</b> subject/verb agreement, tense shift, active/passive, parts of speech, modifiers - <b>Minor mistakes:</b> articles, pronouns (count & non-count/singular & plural), prepositions	- <b>Proficient;</b> grammatical structures are <b>accurate &amp; cannot easily be distinguished as second language writing</b> - <b>No major mistakes;</b> only a few minor mistakes, if any at all	- <b>Competent control;</b> grammatical structures are appropriate with - <b>A few major errors &amp; occasional minor errors that do not interfere with meaning</b>	- <b>Moderate control</b> - <b>Some major errors &amp; many minor grammatical mistakes</b> that contribute to the lack of clarity & often obscure meaning	- <b>Limited control</b> - <b>Many</b> major grammatical errors & minor mistakes which cause communication breakdown	- <b>Unacceptable control</b> of grammar - Both <b>major &amp; minor grammatical errors in every sentence</b> - <b>Not communicable</b> or insufficiently written to make a reliable judgment
<b>Mechanics (10)</b> Follows conventions of spelling, punctuation, capitalization & paragraphing format	<b>Mastery of conventions;</b> few or <b>no errors</b> of spelling, punctuation, capitalization, paragraphing	<b>Occasional errors</b> of spelling, punctuation, capitalization, paragraphing. Errors are <b>not so distracting &amp; meaning is not obscured/confusing</b>	<b>Some errors</b> of spelling, punctuation, capitalization, paragraphing. Errors are <b>somewhat distracting &amp; meaning may be slightly obscured/confusing</b> in some areas	<b>Many errors</b> of spelling, punctuation, capitalization, paragraphing. Errors are <b>very distracting &amp; meaning may be obscured/confusing</b>	<b>No mastery of conventions;</b> dominated by errors of spelling, punctuation; or not enough written to evaluate mechanics

90-73

72-55

54-37

36-19

18-1

This scale has been adapted by Tanyaporn Arya from several holistic and analytical writing rubrics: (i.e. (1) Kim (2002) (2) Michigan Writing Assessment Scoring Guide (3) Chulalongkorn University Language Institute's Scoring Scale for the Foundation English Course (4) Writing Competency Exam Holistic Rating Scale (Retrieved August 2006) (5) Idaho State University Writing Center Holistic Rating Scale (Retrieved August 2006) (6) PSAT A Writing Performance Definition (Retrieved August 2006) (7) TOEFL iBT Test- Independent Writing Rubrics (2005))

## Appendix M: Self-reflective reminder questions (SRQ)

### Self-reflective Reminder Questions

ชุดคำถามนี้ประกอบไปด้วยคำถามที่จะเตือนนิสิตว่าได้ทำในสิ่งที่ควรตลอดระยะเวลาการเขียนเรียงความหรือไม่ นิสิตสามารถกลับมาดูเพื่อเป็นการเตือนตัวเองได้ตลอดเวลา

วิธีทำ: ให้นิสิตทำเครื่องหมาย ✓ ในช่อง เฉพาะเวลาที่ได้ทำสิ่งเหล่านั้นแล้ว

#### ก่อนเขียน Pre-writing (Outline)

1. ฉันได้ทดสอบความคิดทั้งหมดลงไปบนกระดาษทค/คอมพิวเตอร์แล้วหรือยัง  
Have I brainstormed by writing/typing my ideas down? Yes  No
2. ฉันได้แยกความคิดออกเป็นประเด็นต่าง ๆ ที่ชัดเจนหรือยัง  
Have I separated my ideas clearly into different points? Yes  No
3. ฉันตัดสินใจได้หรือยังว่าจะเรียบเรียงลำดับความคิดของฉันอย่างไร  
Have I decided how I will organize my essay? Yes  No
4. ฉันนึกถึงตัวอย่างที่จะใช้สนับสนุนประเด็นต่าง ๆ หรือยัง  
Have I thought of the examples I will use to support each point? Yes  No

#### ระหว่างเขียน During Writing (1<sup>st</sup> Draft)

5. ฉันเขียนรวบรวมรายละเอียดทุกอย่างตามที่ทค/คิดไว้หรือเปล่า  
Am I including all the details I have thought of? Yes  No
6. ฉันมีประโยคหลักที่ตอบคำถามในโจทย์แล้วหรือยัง  
Do I have a clear main thesis statement? Yes  No
7. ฉันได้คิดถึงคำเชื่อมที่จะใช้ในการเชื่อมประเด็นความคิดในแต่ละส่วนแล้วหรือยัง  
Have I thought of which transition marker to use for each part? Yes  No

#### การปรับเนื้อหาและเรียบเรียงใหม่ Rewriting (2<sup>nd</sup> Draft)

##### เนื้อหา Content:

8. ฉันมีประโยคความคิดหลักที่ตอบคำถามในโจทย์หรือยัง  
Do I have a main thesis statement that answers the question? Yes  No
9. ฉันตอบคำถามได้อย่างถ่องแท้หรือยัง  
Do I fully address the question? Yes  No
10. ฉันเขียนให้ผู้อ่านด้วยภาษาที่เหมาะสมหรือไม่  
Do I address the audience appropriately? Yes  No

11. งานเขียนของฉันมีอย่างน้อย3ประเด็นย่อยไว้สนับสนุนความคิดหลัก  
Does the essay include at least three ideas to support the thesis? Yes  No
12. แต่ละประเด็นย่อยมีตัวอย่างสนับสนุนอย่างแน่นหนาหรือไม่ สามารถเพิ่มตัวอย่างได้อีกไหม  
Does each point/idea have substantial supporting detail? Yes  No   
Could I add more details? Yes  No
13. ตัวอย่างและรายละเอียดเหมาะสม เกี่ยวข้อง และสมเหตุสมผลหรือเปล่า  
ฉันสามารถตัดสิ่งที่ไม่เกี่ยวข้องออกได้ไหม  
Are the details appropriate, relevant and logical? Yes  No   
Can I delete those that are irrelevant? Yes  No
14. ข้อถกเถียง/ประเด็นรายละเอียดต่าง ๆ หนักแน่นพอไหม สามารถเขียนให้มีน้ำหนักมากกว่านี้ได้ไหม  
Are the arguments, details and examples convincing enough? Yes  No   
Can I make them more convincing? Yes  No

#### การเรียบเรียง Organization:

15. งานเขียนของฉันมี คำนำ เนื้อหา บทสรุป ที่มีประสิทธิภาพแล้วหรือยัง  
Does my essay have an effective introduction, body, and conclusion? Yes  No
16. งานเขียนของฉันแบ่งออกเป็นย่อหน้า ๆ ตามประเด็นย่อยที่มีอยู่หรือเปล่า  
Is my essay organized into separate paragraphs according to the minor supporting ideas? Yes  No
17. ฉันได้จัดลำดับย่อหน้าต่าง ๆ ให้ต่อเนื่องกันอย่างสมเหตุสมผล  
Did I sequence the paragraphs in a logical and smooth order? Yes  No
18. แต่ละย่อหน้าเกี่ยวข้องกับประเด็นหลักหรือไม่  
Is each paragraph related to the main idea? Yes  No
19. แต่ละย่อหน้ามีรายละเอียด มีน้ำหนักเพียงพอ และเท่า ๆ กันไหม  
Is each paragraph substantial? Yes  No
20. ฉันได้ใช้การเชื่อมโยงความคิดให้มีความต่อเนื่องจากย่อหน้าหนึ่งไป  
อีกย่อหน้าหนึ่งหรือเปล่า  
Did I use transitions to link ideas from paragraph to paragraph? Yes  No
21. ฉันได้ใช้คำเชื่อมเพื่อเชื่อมโยงความคิดตลอดทั้งเรื่อง  
Did I use transition words to link ideas throughout the essay? Yes  No

#### การอ่านทบทวนเพื่อแก้ไขการใช้ภาษา Editing and Proofreading (3<sup>rd</sup> Draft)

20. ฉันได้อ่านเรื่องของฉันเพื่อตรวจสอบคุณภาพโดยรวมของงานเขียนหรือยัง  
Did I read my essay again to check for overall quality? Yes  No



### ภาษา Language

21. ฉันใช้รูปประโยคที่หลากหลายหรือเปล่า  
Did I use a variety of sentence structures? Yes  No
22. ประโยคต่าง ๆ เขียนได้ดีหรือยัง ปรับแก้ให้เป็นประโยคที่สมบูรณ์ และมีประสิทธิภาพได้ไหม  
Are my sentences awkward? Yes  No   
Can I make them more effective and complete sentences? Yes  No
23. ฉันใช้คำเชื่อมต่าง ๆ ได้อย่างถูกต้องหรือเปล่า  
Did I use transition markers accurately? Yes  No
24. ฉันใช้คำเชื่อมที่หลากหลายหรือเปล่า  
Do I use a variety of transition markers? Yes  No
25. ฉันใช้คำศัพท์ที่หลากหลายหรือเปล่า  
Did I use a variety of vocabulary? Yes  No
26. ฉันเลือกใช้คำที่เลือกสรรมาอย่างดี สำนวนที่เหมาะสม และศัพท์ที่ทำให้ผู้อ่านเห็นภาพ  
Did I choose sophisticated vocabulary, formulaic expressions, and descriptive words? Yes  No
27. ฉันตรวจแก้ไขไวยากรณ์หรือยัง Did I check for grammatical errors<sup>1</sup>? Yes  No
28. ฉันตรวจแก้ตัวสะกดหรือยัง  
Did I check for spelling mistakes? Yes  No
29. ฉันตรวจแก้ไขเครื่องหมายวรรคตอนหรือยัง  
Did I check for punctuation mistakes? Yes  No
30. ฉันตรวจแก้การเขียนตัวใหญ่ตัวเล็กหรือยัง  
Did I check for capitalization mistakes? Yes  No
31. ฉันตรวจแก้การจัดย่อหน้าหรือยัง  
Did I check paragraphing format? Yes  No

<sup>1</sup> (Subject-verb/pronoun agreement, tense shift, parts of speech, modifiers, active/passive voice, articles, numbers (count and non-count), singular and plural, preposition)



## Appendix N: Instructions card: Selected segments

## Instructions

## Test taker-centered Computer-based Writing Test with Drafts

การสอบเขียนภาษาอังกฤษโดยใช้สื่อคอมพิวเตอร์  
ประเภทร่างงานเขียน มีทั้งหมด 4 ขั้นตอน

**ขั้นตอนที่ 1: เขียนโครงร่าง (Outline)**

ในขั้นตอนนี้ ให้นิสิตวางแผนว่าจะเขียนอะไรบ้างโดยพิมพ์  
โครงร่าง (outline) คร่าว ๆ ลงในหน้าจอ Microsoft Word  
เมื่อร่าง Outline เสร็จแล้วจึง

- Save โครงร่าง (Outline) ไว้ใน file บนหน้าจอ (Desktop) โดยตั้งชื่อ file ของตัวเองว่า

Outline + ชื่อ + รหัสประจำตัวนิสิต

ต.ย: outline\_somsri\_4689679902

**ขั้นตอนที่ 2: เขียนร่างแรก โดยเน้นเนื้อหา (1<sup>st</sup> Draft - Content)**

ในส่วนนี้ ให้นิสิตมุ่งเขียนเฉพาะเนื้อหา ตัวอย่างสนับสนุน  
และรายละเอียดต่างๆ ยังไม่ให้ นิสิตปรับแก้การใช้ภาษา  
ไวยากรณ์หรือตัวสะกดในตอนนี้

**i** ก่อนลงมือเขียน 1st Draft ให้นิสิตทำตามขั้นตอนเหล่านี้  
อย่างเคร่งครัด:

- เปิด TRK
- ปิดตัวแดง
- เปลี่ยน User Info.

👉 เริ่มพิมพ์ร่างแรกได้ โดยพิมพ์ทับ Outline ได้เลย

เมื่อนิสิตเขียนร่างที่หนึ่งเสร็จแล้วให้

Save 1<sup>st</sup> Draft (ร่างแรก) ไว้ใน file บนหน้าจอ (Desktop)

ต.ย: fd\_somsri\_4689679902

## Appendix O: Functions card: Selected segments

### Functions

#### Test taker-centered Computer-based Writing Test with Functions

ในการสอบเขียนภาษาอังกฤษโดยใช้สื่อคอมพิวเตอร์ประเภทใช้ฟังก์ชันช่วย เป็นการสอบที่ให้นิสิตสามารถเลือกใช้ฟังก์ชันเพื่อช่วยในการเขียนได้ 5 อย่าง ได้แก่

#### 1. Translation พจนานุกรม อังกฤษ – ไทย

นิสิตสามารถหาความหมายของคำได้ โดย

1. Highlight หรือ คลิกให้ Cursor อยู่บนคำที่ต้องการแปลความหมาย
2. คลิก Tool บนหน้าจอ Microsoft Word
3. เลือก Language แล้วเลือกคลิก Translate

#### 2. Thesaurus พจนานุกรมคำพ้อง/อรรถาภิธาน

นิสิตสามารถหาคำพ้องหรือคำที่มีความหมายเหมือนหรือคล้ายกันได้ โดย

1. Highlight หรือ คลิกให้ Cursor อยู่บนคำที่ต้องการหาคำเหมือน
2. คลิก Tool บนหน้าจอ Microsoft word
3. เลือก Language แล้วเลือกคลิก Thesaurus

#### 3. Spell Check การตรวจสอบคำสะกด

โปรแกรม Microsoft Word มีฟังก์ชันตรวจสอบคำสะกด ขณะที่พิมพ์ข้อมูลให้อัตโนมติ โดยจะแสดงผลเป็นเส้นใต้สีแดงเมื่อคำนั้นพิมพ์ผิด หรือไม่ปรากฏในพจนานุกรมของระบบ ดังนี้

#### 4. Grammar Check การตรวจสอบไวยากรณ์

โปรแกรม Word มีฟังก์ชันตรวจสอบไวยากรณ์ขณะที่พิมพ์ข้อมูลให้โดยอัตโนมัติ โดยจะแสดงผลเป็นเส้นใต้สีเขียว เพื่อแสดงข้อสงสัยว่าผิดไวยากรณ์

## Appendix P: Retrospective questionnaire 1: Sample pages

### Section I: Behavioral Data

#### Part A. English Writing Behavior on Computers in Non-test Situations

ในแบบสอบถามส่วนนี้ผู้วิจัยอยากทราบว่าโดยปกติวิสัยแล้วนิสิตใช้เครื่องคอมพิวเตอร์เขียนเรียงความภาษาอังกฤษอย่างไรในชั้นเรียน หรือในสถานการณ์นอกห้องสอบ

วิธีทำ: กรุณาทำเครื่องหมาย (✓) ในช่องที่ตรงกับนิสิตที่สุด

<p style="text-align: center;"><b>English writing behavior on the computer in non-test situations</b> วิธีเขียนเรียงความภาษาอังกฤษบนเครื่องคอมพิวเตอร์ ในสถานการณ์นอกห้องสอบ</p>	บ่อยมาก	บางครั้ง	แทบจะไม่	ไม่เคย
1. ฉันใช้โปรแกรม Microsoft Word ในการเขียน/พิมพ์ภาษาไทย				
2. ฉันใช้โปรแกรม Microsoft Word ในการเขียน/พิมพ์ภาษาอังกฤษ				
3. ฉันใช้พจนานุกรมอังกฤษ-ไทยที่อยู่ในโปรแกรม Microsoft Word เวลาเขียนเรียงความภาษาอังกฤษด้วยเครื่องคอมพิวเตอร์				
4. ฉันใช้พจนานุกรมคำพ้อง (thesaurus) ที่อยู่ในโปรแกรม Microsoft Word เวลาเขียนเรียงความภาษาอังกฤษด้วยเครื่องคอมพิวเตอร์				
5. ฉันแก้ตัวสะกดโดยใช้ฟังก์ชันตรวจ "การสะกด" (spell-check) ของ Microsoft Word เวลาเขียนเรียงความภาษาอังกฤษด้วยเครื่องคอมพิวเตอร์				
6. ฉันแก้ไวยากรณ์โดยใช้ฟังก์ชันตรวจ "ไวยากรณ์" (grammar-check) ของ Microsoft Word เวลาเขียนเรียงความภาษาอังกฤษด้วยเครื่องคอมพิวเตอร์				
7. ก่อนลงมือเขียนจริงฉันจะเขียนโครงร่าง (outline) ของเรื่องด้วยคอมพิวเตอร์				
8. ก่อนลงมือเขียนจริงฉันจะเขียนโครงร่าง (outline) ของเรื่องลงบนกระดาษ				
9. เวลาเขียนเรียงความภาษาอังกฤษบนเครื่องคอมพิวเตอร์ ฉันจะร่างหลาย ๆ ครั้งลงบนกระดาษก่อนพิมพ์กับเครื่องคอมพิวเตอร์				
10. เวลาเขียนเรียงความภาษาอังกฤษฉันจะเขียนฉบับร่าง หลาย ๆ ฉบับ (Drafts) ด้วยเครื่องคอมพิวเตอร์เลย				
11. ตลอดเวลาที่เขียนเรียงความ ฉันจะเตือนตัวเองว่าควรจะทำเช่นไรจึงจะเขียนได้เรียงความที่ดี				

<p style="text-align: center;"><b>English writing behavior on the computer in non-test situations</b></p> <p style="text-align: center;">วิธีเขียนเรียงความภาษาอังกฤษบนเครื่องคอมพิวเตอร์ ในสถานการณ์นอกห้องสอบ</p>	บ่อยมาก	บางครั้ง	แทบจะไม่	ไม่เคย
12. ก่อนที่จะส่งงานฉันตรวจสอบการพัฒนาเนื้อหาในเรียงความโดยละเอียดว่ามีตัวอย่างสนับสนุนประเด็นหลัก (ใจความสำคัญ) ของเนื้อหาและรายละเอียดต่าง ๆ อย่างเพียงพอ				
13. ฉันตรวจสอบการเรียบเรียงจัดลำดับเนื้อหาในเรียงความโดยละเอียดก่อนที่จะส่ง				
14. ฉันตรวจสอบการใช้ภาษา เช่น การใช้รูปประโยคที่หลากหลาย หรือ การเลือกใช้คำให้เหมาะสมในเรียงความโดยละเอียดก่อนที่จะส่ง				
15. ฉันตรวจสอบไวยากรณ์ เช่น การผันกริยา หรือ การใช้คำบุพบท (preposition) ในเรียงความโดยละเอียดก่อนที่จะส่ง				
16. ฉันตรวจสอบการใช้เครื่องหมายวรรคตอน และตัวสะกดในเรียงความโดยละเอียดก่อนที่จะส่ง				
17. ฉันปรับแก้การพัฒนาเนื้อหาเรียงความโดยละเอียดด้วยการเพิ่มรายละเอียดหรือตัวอย่างสนับสนุนประเด็นหลัก (ใจความสำคัญ) ของเนื้อหา ก่อนที่จะส่ง				
18. ฉันปรับแก้การเรียบเรียงจัดลำดับเนื้อหาในเรียงความโดยละเอียดก่อนที่จะส่ง				
19. ฉันปรับแก้การใช้ภาษา เช่น การใช้รูปประโยคที่หลากหลาย หรือ การเลือกใช้คำให้เหมาะสมในเรียงความของฉัน โดยละเอียดก่อนที่จะส่ง				
20. ฉันปรับแก้ไวยากรณ์ เช่น การผันกริยา หรือ การใช้คำบุพบท (preposition) ในเรียงความโดยละเอียดก่อนที่จะส่ง				
21. ฉันปรับแก้เครื่องหมายวรรคตอน และ ตัวสะกดในเรียงความโดยละเอียดก่อนที่จะส่ง				
22. ฉันตระหนักถึงลักษณะของเรียงความที่ดีเวลาเขียนเรียงความภาษาอังกฤษ				

## Part B. The writing test you have just finished

ในส่วนของแบบสอบถามผู้วิจัยสนใจที่จะทราบว่านิสิตปฏิบัติอย่างไรบ้างในการทดสอบที่เพิ่งทำจบนี้

**วิธีทำ:** กรุณาตอบคำถามอย่างเที่ยงตรงที่สุด

สิ่งที่นิสิตให้ความสนใจขณะเขียน และ สนใจมากน้อยเพียงใด	มากที่สุด 76-100%	มาก 51-75%	น้อย 26-50%	น้อยที่สุด 1-25%
1. ในการสอบครั้งนี้ ฉันให้ความสนใจกับการพัฒนาเนื้อหา/การเสริมเนื้อหาด้วยรายละเอียดหรือตัวอย่างสนับสนุน (topic development)				
2. ในการสอบครั้งนี้ ฉันให้ความสนใจกับการเรียบเรียงลำดับเนื้อหา (organization)				
3. ในการสอบครั้งนี้ ฉันให้ความสนใจกับความหลากหลายของรูปประโยค (sentence style)				
4. ในการสอบครั้งนี้ ฉันให้ความสนใจกับความถูกต้องของไวยากรณ์ (grammar)				
5. ในการสอบครั้งนี้ ฉันให้ความสนใจกับการเลือกใช้คำศัพท์ (word choice/vocabulary)				
6. ในการสอบครั้งนี้ ฉันให้ความสนใจกับตัวสะกด และเครื่องหมายวรรคตอน (mechanics)				

6. นิสิตทำสิ่งใดต่อไปนี้ (เลือกได้ข้อเดียว)

- ฉันเขียนโครงร่างคร่าว ๆ (Outline) บนกระดาษก่อน แล้วจึงเขียนเรียงความด้วยเครื่องคอมพิวเตอร์
- ฉันพิมพ์โครงร่างคร่าว ๆ (Outline) ลงในเครื่องคอมฯ จากนั้นจึงเขียนเรียงความด้วยเครื่องคอมฯ
- ฉันเขียนเรียงความทั้งเรื่องลงบนกระดาษก่อน แล้วจึงพิมพ์ตามที่กดไว้บนกระดาษลงในเครื่องคอมฯ
- ฉันเขียนเรียงความ โดยการพิมพ์เรื่องเข้าเครื่องคอมฯเลย โดยไม่ใช้กระดาษทด
- อื่น ๆ โปรดระบุ .....

7. นิสิตทำสิ่งใดต่อไปนี้ (เลือกได้ข้อเดียว)

- ฉันพิมพ์เรียงความต่อเนื่องไปจนจบ แล้วจึงกลับไปตรวจสอบเพื่อปรับปรุงแก้ไขทีละจุดจนจบ
- ฉันพิมพ์ไปแก้ไขจนจบเรื่อง
- ฉันพิมพ์ไปแก้ไขจนจบเรื่อง แล้วปิดท้ายด้วยการตรวจสอบและแก้ไขอีกครั้ง
- อื่น ๆ โปรดระบุ .....



## 8. นิสิตแก้ไขอะไรบ้างต่อไปนี้ในงานเขียนของตัวเอง

สิ่งที่นิสิตแก้ไขในเรียงความ และแก้ไขมากน้อยเพียงใด	มากที่สุด 76-100%	มาก 51-75%	น้อย 26-50%	น้อยที่สุด 1-25%
7. เนื้อหารายละเอียด (supporting ideas and details)				
8. การเรียบเรียงจัดลำดับเนื้อหาความคิด (organization)				
9. รูปประโยค (sentence structures)				
10. ไวยากรณ์ (grammar)				
11. คำศัพท์ (word choice/vocabulary)				
12. ตัวสะกด และเครื่องหมายวรรคตอน (mechanics)				

## 9. ตอนที่นิสิตแก้ไขเปลี่ยนแปลงงานเขียน นิสิตทำอะไร

- ฉันแก้ไขทีละอย่าง เช่น ถ้าแก้ไขไวยากรณ์ก็จะตรวจแก้ไขไวยากรณ์ก่อน จึงค่อยตรวจแก้ไขการสะกดคำทีหลัง
- ฉันแก้ไขเปลี่ยนแปลงโดยไม่มีลำดับ คือเจออะไรที่ควรแก้ไขหรืออยากเปลี่ยนก่อนก็จะทำก่อน
- อื่น ๆ โปรดระบุ .....

สถาบันวิทยบริการ  
จุฬาลงกรณ์มหาวิทยาลัย  
ขอขอบคุณที่สละเวลารอกข้อมูลในแบบสอบถามนี้ 😊

## Appendix Q: Retrospective questionnaire 2: Sample Pages

### Section I:

#### Behavioral Data on the Usage of Facilitative Functions and Draft Writing

##### Part A. Facilitative Functions

ในแบบสอบถามส่วนนี้ ผู้วิจัยอยากทราบเกี่ยวกับลักษณะ และวิธีการใช้ฟังก์ชันช่วยเหลือ ของนิสิต ในการสอบเขียนที่เพิ่งจบไป ขอขอบคุณสำหรับความร่วมมือ

#### 1. Facilitative Functions Usage in General

ลักษณะการใช้ฟังก์ชันช่วยเหลือโดยทั่วไป  
วิธีทำ: กรุณาทำเครื่องหมาย (✓) ในช่องที่ตรงกับนิสิตที่สุด

Facilitative Functions Usage in the T-CBWT การใช้ฟังก์ชันช่วยในการสอบเขียนภาษาอังกฤษ	มากที่สุด > 16 ครั้ง	มาก 11-15 ครั้ง	น้อย 6-10 ครั้ง	น้อยที่สุด < 5 ครั้ง	ไม่เคย 0 ครั้ง
1. ในการสอบครั้งนี้ นิสิตใช้ พจนานุกรม (translation) มากน้อยเพียงใด					
2. ในการสอบครั้งนี้ นิสิตใช้ พจนานุกรมคำพ้อง (thesaurus) มากน้อยเพียงใด					
3. ในการสอบครั้งนี้ นิสิตใช้ spell-check มากน้อยเพียงใด					
4. ในการสอบครั้งนี้ นิสิตใช้ grammar-check มากน้อยเพียงใด					
5. ในการสอบครั้งนี้ นิสิตใช้ Self-reflective Reminder Questions มากน้อยเพียงใด					
6. นิสิตใช้คำใน พจนานุกรม (translation) มากน้อยเพียงใด					
7. นิสิตใช้คำใน พจนานุกรมคำพ้อง (thesaurus) มากน้อยเพียงใด					
8. นิสิตทำตามคำแนะนำของ spell-check มากน้อยเพียงใด					
9. นิสิตทำตามคำแนะนำของ grammar-check มากน้อยเพียงใด					
10. นิสิตทำตามคำแนะนำของ Self-reflective Reminder Questions มากน้อยเพียงใด					

## Part B. ระหว่างเขียนนิสิตให้ความสนใจสิ่งใดบ้างเป็นพิเศษ

1. **วิธีทำ:** กรุณาทำเครื่องหมาย (✓) ในช่องที่ตรงกับนิสิตที่สุด

สิ่งที่นิสิตให้ความสนใจขณะเขียน และ สนใจมากน้อยเพียงใด	มากที่สุด 76-100%	มาก 51-75%	น้อย 26-50%	น้อยที่สุด 1-25%
1. ในการสอบครั้งนี้ ฉันให้ความสนใจกับการพัฒนาเนื้อหา/การเสริมเนื้อหาด้วยรายละเอียดหรือตัวอย่างสนับสนุน (topic development)				
2. ในการสอบครั้งนี้ ฉันให้ความสนใจกับการเรียบเรียงจัดลำดับเนื้อหา (organization)				
3. ในการสอบครั้งนี้ ฉันให้ความสนใจกับความหลากหลายของรูปประโยค (sentence style)				
4. ในการสอบครั้งนี้ ฉันให้ความสนใจกับความถูกต้องของไวยากรณ์ (grammar)				
5. ในการสอบครั้งนี้ ฉันให้ความสนใจกับการเลือกใช้คำศัพท์ (word choice/vocabulary)				
6. ในการสอบครั้งนี้ ฉันให้ความสนใจกับตัวสะกด และเครื่องหมายวรรคตอน (mechanics)				

2. **นิสิต ใฝ่ใจอะไรบ้าง** ต่อไปนี้ในงานเขียนของตัวเอง

**วิธีทำ:** กรุณาทำเครื่องหมาย (✓) ในช่องที่ตรงกับนิสิตที่สุด

สิ่งที่นิสิตใฝ่ใจในเรียงความ และใฝ่ใจมากน้อยเพียงใด	มากที่สุด 76-100%	มาก 51-75%	น้อย 26-50%	น้อยที่สุด 1-25%
7. เนื้อหารายละเอียด (supporting ideas and details)				
8. การเรียบเรียงจัดลำดับเนื้อหาความคิด (organization)				
9. รูปประโยค (sentence structures)				
10. ไวยากรณ์ (grammar)				
11. คำศัพท์ (word choice/vocabulary)				
12. ตัวสะกด และเครื่องหมายวรรคตอน (mechanics)				

## Section II: Preference Data

ในแบบสอบถามส่วนนี้ ผู้วิจัยอยากทราบเกี่ยวกับความเห็นและความรู้สึกของนิสิตที่มีต่อลักษณะต่าง ๆ ของข้อสอบเขียนแบบ T-CBWT นี้ ขอขอบคุณที่สละเวลาเพื่อตอบคำถามเหล่านี้

**Part A.** ตอนที่นิสิตทำข้อสอบเขียนนิสิตได้รับความช่วยเหลือจากสิ่งต่าง ๆ ที่อยู่ในตารางด้านล่าง สิ่งใดที่นิสิตคิดว่าเอื้อประโยชน์กับนิสิตมากที่สุดในการเขียน

**วิธีทำ:** กรุณาทำเครื่องหมาย (✓) ในช่องที่ตรงกับนิสิตที่สุด

Writing Help	Very Helpful มีประโยชน์	Helpful มีประโยชน์	Not Very Helpful ไม่ค่อยมี	Not Helpful At All
Thesaurus พจนานุกรมคำพ้อง				
Dictionary พจนานุกรม อังกฤษ-ไทย				
Spell-check ฟังก์ชันตรวจตัวสะกด				
Grammar-check ฟังก์ชันตรวจไวยากรณ์				
Self-reflective Reminder Questions คำถามเตือน				
Drafts การเขียนฉบับร่าง โดยรวม				
Outline การเขียนโครงร่าง				
Writing ร่างครั้งที่ 1 เน้นเขียนเนื้อหารายละเอียด				
Revising ร่างครั้งที่ 2 เน้นการปรับเปลี่ยน/ลำดับความคิดเนื้อหา				
Editing/Proof Reading ร่างครั้งที่ 3 เน้นตรวจแก้ภาษาไวยากรณ์				

สถาบันวิทยบริการ  
จุฬาลงกรณ์มหาวิทยาลัย

## Part B. Opinions towards the T-CBWT

ในแบบสอบถามส่วนนี้ ผู้วิจัยอยากทราบเกี่ยวกับความเห็นและความรู้สึกของนิสิตที่มีต่อ การสอบแบบนี้โดยรวม

### 1. วิธีทำ: นิสิตเห็นด้วยกับประโยคเหล่านี้มากน้อยแค่ไหน

กรุณาทำเครื่องหมาย (✓) ในช่องที่ตรงกับนิสิตที่สุด

Opinions towards the T-CBWT ความเห็นต่อข้อสอบ T-CBWT	Strongly agree เห็นด้วยอย่างยิ่ง	Agree เห็นด้วย	Disagree ไม่เห็นด้วย	Strongly Disagree ไม่เห็นด้วยอย่างยิ่ง
1. คำสั่งต่าง ๆ ของข้อสอบเขียนนี้ชัดเจนดี				
2. การสาธิตก่อนการลงมือทำข้อสอบเขียนนั้นชัดเจนดี				
3. ขั้นตอนต่าง ๆ ในการทำข้อสอบนี้ง่ายที่จะทำตาม				
4. ในการสอบข้อเขียนภาษาอังกฤษครั้งนี้ฉันชอบที่ได้พิมพ์ บนคอมพิวเตอร์มากกว่าการใช้ปากกาเขียน				
5. ข้อสอบแบบนี้สามารถวัดความสามารถที่แท้จริงในการ เขียนภาษาอังกฤษของฉันได้				
6. ในอนาคตฉันอยากจะสอบข้อเขียนภาษาอังกฤษในรูปแบบนี้				
7. ในการสอบเขียนภาษาอังกฤษควรจะให้ใช้ พจนานุกรม translation				
8. ในการสอบเขียนภาษาอังกฤษควรจะให้ใช้พจนานุกรมคำพ้อง thesaurus				
9. ในการสอบเขียนภาษาอังกฤษควรจะให้ใช้ ฟังก์ชัน spell-check				
10. ในการสอบเขียนภาษาอังกฤษควรจะให้ใช้ ฟังก์ชัน grammar-check				
11. ควรจะมีคำถามเตือนแบบ Self-reflective questions เวลาสอบเขียนภาษาอังกฤษ				
12. การมีฟังก์ชันช่วยเหมือนที่ใช้ในการสอบเขียนครั้งนี้มัน จำเป็นสำหรับการสอบเขียนภาษาอังกฤษ				
13. การได้ใช้ฟังก์ชันช่วยระหว่างสอบเขียนนั้นช่วยให้ฉันเขียนได้ ร่างที่ดีที่สุด				
14. ข้อสอบเขียนประเภทนี้มีฟังก์ชันช่วยนั้นยุติธรรมดีสำหรับ ผู้สอบ				



วิธีทำ: นิสิตเห็นด้วยกับประโยคเหล่านี้มากน้อยแค่ไหน กรุณาทำเครื่องหมาย (✓) ในช่องที่ตรงกับนิสิตที่สุด

<p style="text-align: center;"><b>Opinions towards the T-CBWT</b> ความเห็นต่อข้อสอบ T-CBWT</p>	Strongly agree เห็นด้วยอย่างยิ่ง	Agree เห็นด้วย	Disagree ไม่เห็นด้วย	Strongly Disagree ไม่เห็นด้วยอย่างยิ่ง
15. ฉันรู้สึกสนใจในการสอบประเภทนี้เพราะมีฟังก์ชันต่าง ๆ ที่ช่วยในการเขียน				
16. ในเวลาสอบนั้นการให้โอกาสเขียนร่างหลาย ๆ ร่างจำเป็นสำหรับผู้เขียน				
17. การร่าง หลาย ๆ ครั้งระหว่างสอบเขียนนั้นช่วยให้ฉันเขียนได้ร่างที่ดีที่สุด				
18. ข้อสอบเขียนประเภทนี้ที่มีการร่างหลาย ๆ ครั้งนั้นยุติธรรมดีสำหรับผู้สอบ				
19. ฉันรู้สึกสนใจในการสอบประเภทนี้ เพราะฉันสามารถร่างและแก้ไขได้หลาย ๆ ครั้ง				
20. ฉันคิดว่าฉันน่าจะเขียนได้ดีในการสอบข้อเขียนภาษาอังกฤษประเภทนี้ มากกว่าการสอบเขียนเขียนภาษาอังกฤษแบบดั้งเดิมที่ไม่มีฟังก์ชันหรือ การเขียนร่าง				

2. โปรดให้รายละเอียดเพิ่มเติมเกี่ยวกับความเห็นของนิสิตที่มีต่อข้อสอบนี้ กรุณาทำเครื่องหมายในช่องที่ตรงกับความเห็นนิสิต และเขียนเหตุผลประกอบในช่องว่าง ขอบคุณนิสิตมากที่สุดที่ให้ความช่วยเหลือ

1. นิสิตคิดว่าเวลาหนึ่งชั่วโมงครึ่ง (90 นาที) เพียงพอกับการทำข้อสอบเขียนนี้หรือไม่  พอ  ไม่พอ

หากนิสิตตอบว่า “ไม่พอ” กรุณาระบุเวลาที่นิสิตเห็นว่าเหมาะสมสำหรับการทำข้อสอบเขียนนี้ ..... นาที

2. ใน Part1 ข้อ 5 หน้า 4 (ที่ถามนิสิตว่า ข้อสอบแบบนี้สามารถวัดความสามารถที่แท้จริงในการเขียนภาษาอังกฤษของฉันได้) นั้น กรุณาอธิบายถึงเหตุผลที่ตอบไปเช่นนั้น

.....  
 .....

3. ใน Part 1 ข้อ 11 หน้า 4 (ที่ถามนิสิตว่า ควรจะมีคำถามเตือนแบบ Self-reflective questions เวลาสอบเขียน ภาษาอังกฤษ) นั้น หากนิสิตตอบว่าไม่เห็นด้วยหรือไม่เห็นด้วยอย่างยิ่ง กรุณาอธิบายถึงเหตุผลที่ตอบเช่นนั้น

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4. ในอนาคตฉันอยากจะสอบข้อเขียนภาษาอังกฤษในรูปแบบนี้  ใช่  ไม่ใช่

เพราะ.....

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5. กรุณาออกความเห็นอื่น ๆ ที่นิสิตมีต่อการสอบ แบบนี้

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.....

Thank you again for your cooperation.

😊 ขอขอบคุณอีกครั้งสำหรับความร่วมมือของนิสิต 😊

สถาบันวิทยบริการ  
จุฬาลงกรณ์มหาวิทยาลัย

## Appendix R: Dependability of questionnaires in pilot study and posttest

The following are reports of reliability tests (Cronbach Alpha) on both retrospective questionnaires run on SPSS Version 11.5.

### Questionnaire 1

#### RELIABILITY ANALYSIS - SCALE (ALPHA)

1.	Q1S1A1	MSThai	18.	Q1S1A18	EditOrg
2.	Q1S1A2	MSEng	19.	Q1S1A19	EditLang
3.	Q1S1A3	MSTranslation	20.	Q1S1A20	EditGram
4.	Q1S1A4	MSTheseurus	21.	Q1S1A21	EditMechanics
5.	Q1S1A5	MSSpChDur	22.	Q1S1A22	ConcernGoodWriting
6.	Q1S1A6	MSGrchDur	23.	Q1S1B1.1	PreTestConcernContent
7.	Q1S1A7	OutlineOnCom	24.	Q1S1B1.2	PreTestConcernOrg
8.	Q1S1A8	OutlineOnPaper	25.	Q1S1B1.3	PreTestConcernSenten
9.	Q1S1A9	PaperThenCom	26.	Q1S1B1.4	PreTestConcernVocab
10.	Q1S1A10	DraftsOnCom	27.	Q1S1B1.5	PreTestConcernGram
11.	Q1S1A11	SelfRemind	28.	Q1S1B2	Outlining
12.	Q1S1A12	CheckContentSuf	29.	Q1S1B3	Editing
13.	Q1S1A13	CheckOrg	30.	Q1S1B4.1	RevisedContent
14.	Q1S1A14	CheckLang	31.	Q1S1B4.2	RevisedOrg
15.	Q1S1A15	CheckGrammar	32.	Q1S1B4.3	EditedSentenceStyle
16.	Q1S1A16	CheckMechanics	33.	Q1S1B4.4	EditedVocab
17.	Q1S1A17	EditContent	34.	Q1S1B4.5	EditedGrammar
			35.	Q1S1B5	SequenceofEditing

### Pilot Study

Reliability Coefficients      N of Cases = 30.0    N of Items = 35      Alpha = .8693

### Posttest

Reliability Coefficients      N of Cases = 144.0      N of Items = 35      Alpha = .8749

### Questionnaire 2 Section 1 Part A For Groups 1 and 3

#### RELIABILITY ANALYSIS - SCALE (ALPHA)

1.	Q2S1A1.1	TranslationUse
2.	Q2S1A1.3	SpellCheckUse
3.	Q2S1A1.2	ThesaurusUse
4.	Q2S1A1.4	GramCheckUse
5.	Q2S1A1.5	SRQUse
6.	Q2S1A1.6	FollowTranslation
7.	Q2S1A2.5	FollowSpellCheck
8.	Q2S1A2.6	FollowThesaurus
9.	Q2S1A2.7	FollowGramCheck
10.	Q2S1A2.8	FollowSRQ

### Pilot Study

Reliability Coefficients      N of Cases = 13.0      N of Items = 10      Alpha = .9278

### Posttest

Reliability Coefficients      N of Cases = 72.0      N of Items = 10      Alpha = .9010

### Questionnaire 2 Section 1 Part B for All Groups

#### RELIABILITY ANALYSIS - SCALE (ALPHA)

1.	Q2S1C1	PosttestConcernCont
2.	Q2S1C2	PosttestConcernOrg
3.	Q2S1C3	PosttestConcernSenten
4.	Q2S1C4	PosttestConcernGram
5.	Q2S1C5	PosttestConcernVocab
6.	Q2S1C6	PosttestConcernMech

7.	Q2S1C7	EditedContent
8.	Q2S1C8	EditedOrg
9.	Q2S1C9	EditedSentenceStruc
10.	Q2S1C10	EditedGrammar
11.	Q2S1C11	EditedVocab
12.	Q2S1C12	EditedMechanics

**Pilot study**

Reliability Coefficients      N of Cases = 30.0 N of Items = 12      Alpha = .8358

**Posttest**

Reliability Coefficients      N of Cases = 144.0      N of Items = 12      Alpha = .7527

**Questionnaire 2 Section 2 Part B For All Groups**

## RELIABILITY ANALYSIS - SCALE (ALPHA)

1.	Q2S2B1.1	ClearInstructions
2.	Q2S2B1.2	ClearOrientation
3.	Q2S2B1.3	EasySteps
4.	Q2S2B1.4	LikeTypingOnCom
5.	Q2S2B1.5	AbletoMeasureWritAbility
6.	Q2S2B1.6	LikeToTakeTTC

**Pilot study**

Reliability Coefficients      N of Cases = 30.0 N of Items = 6      Alpha = .7690

**Posttest**

Reliability Coefficients      N of Cases = 144.0      N of Items = 6      Alpha = .7996

**Questionnaire 2 Section 2 Part B for Group 1 and 3**

## RELIABILITY ANALYSIS - SCALE (ALPHA)

1.	Q2S2B1.7	ShouldUseTranslation
2.	Q2S2B1.8	ShouldUseThesaurus
3.	Q2S2B1.9	ShouldUseSpellcheck
4.	Q2S2B110	ShouldUseGramcheck
5.	Q2S2B111	ShouldUseSRQ
6.	Q2S2B112	FacFunctionsNecessary
7.	Q2S2B113	FunctionsHelpMuch
8.	Q2S2B114	FunctionsFair
9.	Q2S2B115	FeelGoodHavingFunction
10.	Q2S2B120	LikeTraditionalWritTest
11.	Q2S2B121	CanWriteBetterOnTTC

**Pilot study**

Reliability Coefficients      N of Cases = 8.0 N of Items = 11      Alpha = .8042

**Posttest**

Reliability Coefficients      N of Cases = 72.0 N of Items = 11      Alpha = .7722

**Questionnaire 2 Section 2 Part B for Group 1 and 2**

## RELIABILITY ANALYSIS - SCALE (ALPHA)

1.	Q2S2B116	DraftsNecessary
2.	Q2S2B117	DraftsHelpMuch
3.	Q2S2B118	DraftsFair
4.	Q2S2B119	FeelGoodDrafting

**Pilot study**

Reliability Coefficients      N of Cases = 17.0 N of Items = 4      Alpha = .8515

**Posttest**

Reliability Coefficients      N of Cases = 72.0      N of Items = 4      Alpha = .8946

## Appendix S: Retrospective interview questions

### Retrospective Interview questions

#### Time management (To ask all Test Groups)

1. How do you divide your time during this test? นิสิตแบ่งเวลาอย่างไรในสอบเขียนครั้งนี้  
(Rephrase: How did you divide your time on understanding the topic, generating material, transcribing, revising? ใช้เวลากับการอ่านตีความโจทย์ คิดใจความ เขียน และ แก้ เป็นสัดส่วนอย่างไร)

#### Language used in carrying out task

2. What language did you use while you were completing the task?  
นิสิตคิดเป็นภาษาอะไรเวลาทำข้อสอบ

#### Revising and Editing (To ask all Test Groups)

(Introduction to terms: What is revising or editing to you?  
สำหรับนิสิต การ revise และ edit คืออะไร)

3. What do you focus on most when you revise and edit?  
ในการ revise และ edit นิสิตทำอะไรบ้าง /เวลาปรับแก้ essay เน้นปรับแก้อะไรบ้าง
4. Why did you make changes to each of the points on your essay?  
ทำไมนิสิตจึงแก้จุดต่าง ๆ ในแต่ละร่าง
5. Which other part would you like to change? Why?  
ส่วนไหนของงานเขียนบ้าง ที่นิสิตอยากปรับแก้อีก เพราะอะไร

#### Facilitative Features (To ask Test Groups 1 and 3)

#### Spell-check and Grammar-check Usage

6. What do you do when the red lines (spelling) appear?  
ถ้าตัวแดงขึ้นทำอย่างไร (ถามคำถามนี้หลังร่างที่ 1 2 3)  
(Rephrase: When do you correct the errors indicated by these two functions?  
นิสิตพยายามแก้ที่ตัวแดงขึ้นหรือไม่ ถ้าไม่นิสิตแก้เมื่อไรขั้นตอนการแก้เป็นอย่างไร ทำอะไร ก่อนหลัง ให้เล่าตามลำดับ)
7. What do you do when the green lines (grammar/punctuation/spacing) appear?  
ถ้าตัวเขียวขึ้นทำอย่างไร (ถามคำถามนี้หลังร่างที่ 1 2 3)  
(Rephrase: When do you correct the errors indicated by these two functions?  
นิสิตพยายามแก้ที่ตัวแดงขึ้นหรือไม่ ถ้าไม่นิสิตแก้เมื่อไรขั้นตอนการแก้เป็นอย่างไร ทำอะไร ก่อนหลัง ให้เล่าตามลำดับ)



### Dictionary (Translation) and Thesaurus Usage

8. Where did you get the vocabulary you used? Why did you choose those words?  
คำศัพท์ที่นิสิตใช้ได้มาจากไหน ทำไมจึงเลือกใช้คำศัพท์เหล่านั้น
9. When did you use the Translation Function? Why? How did this function help you?  
นิสิตใช้ translation หรือ dictionary เมื่อไร และทำไม translation ช่วยนิสิตอย่างไรบ้าง
10. When did you use the Thesaurus Function? Why? How did this function help you?  
นิสิตใช้ thesaurus เมื่อไร และทำไม thesaurus ช่วยนิสิตอย่างไรบ้าง

### Self-reflective Reminder Questions (SRQ) Usage

11. When did you use the SRQs? What on the SRQ list is something you do not normally do?  
นิสิตใช้ SRQs ไปเมื่อไร สิ่งใดบน SRQ ที่ไม่ได้ทำเป็นประจำอยู่แล้ว
12. What do you think about the SRQs?  
นิสิตคิดอย่างไรเกี่ยวกับคำถามใน SRQ

### Opinions on Writing (To ask all Test Groups)

13. What specific features do you think are important in effective writing?  
นิสิตคิดว่าการเขียนภาษาอังกฤษที่ดีควรมีลักษณะเฉพาะอะไรบ้าง  
(Rephrased: What is an effective essay to you? Essay ที่ดีนั้นควรมีลักษณะอย่างไร)
14. What are your writing difficulties?  
สำหรับนิสิตแล้วการเขียนยากตรงจุดไหนบ้าง
15. What did you learn from this writing test?  
นิสิตได้เรียนรู้อะไรใหม่จากการสอบแบบนี้บ้าง

## Interview Consent Form แบบยินยอมให้สัมภาษณ์

การสัมภาษณ์ครั้งนี้จะใช้เวลาประมาณ 30 นาที และจะถามเรื่องต่อไปนี้

1. ขั้นตอน กลวิธีการเขียนขณะสอบ T-CBWT
2. ความเห็นเกี่ยวกับการสอบ T-CBWT

ข้าพเจ้าเต็มใจที่จะให้สัมภาษณ์ และยินยอมให้มีการบันทึกเสียงระหว่างการสัมภาษณ์ เพื่อประโยชน์ในการวิจัยเรื่องผลกระทบของการเขียนผ่านสื่อคอมพิวเตอร์ที่มีผู้เข้าสอบเป็น ศูนย์กลางต่อความสามารถในการเขียนภาษาอังกฤษของนิสิตไทยระดับอุดมศึกษาชั้นปีที่หนึ่ง

ข้าพเจ้าได้อ่านแบบยินยอมให้สัมภาษณ์แล้ว และได้มีโอกาสซักถามในสิ่งที่ข้าพเจ้าไม่ เข้าใจเกี่ยวกับการสัมภาษณ์ในครั้งนี้แล้ว

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(ผู้ให้สัมภาษณ์)

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(ลงวันที่)

ผู้วิจัยจะไม่นำชื่อหรือข้อมูลส่วนตัวของนิสิตจากการสัมภาษณ์ครั้งนี้ไปเผยแพร่ในเอกสาร หรือการอภิปรายใด ๆ ผู้วิจัยจะดูแลรักษาแผ่นบันทึกเสียง หรือบทคัดลอกจากการสัมภาษณ์ ไว้ กับผู้วิจัยแต่เพียงผู้เดียว

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(ผู้สัมภาษณ์ และวันที่)

Adapted from sample consent form retrieved September 2007 from  
[http://www.cc.gatech.edu/classes/AY2003/cs6455\\_spring/example\\_consent.doc](http://www.cc.gatech.edu/classes/AY2003/cs6455_spring/example_consent.doc)

## Appendix T: Test takers' opinions towards the T-CBWT: Selected Segments

Below are translated opinions towards the T-CBWT taken from open-ended questions on Questionnaire 2. The opinions are separated according to test group. Opinions that are replicates have been removed to avoid redundancy. Not all of the opinions are reported here. 'TT' is the abbreviation of Test Taker, followed by an identification number.

### Opinions of Group 1 Test Takers

#### (with facilitative functions and required drafts)

Some test takers in this group thought that the T-CWBT with facilitative functions and required drafts **could not measure** their true writing ability due to the reasons given below:

#### Time limit

TT#9: When writing evaluative essays, writers are can only fully express themselves without being under time limits.

TT#12: Insufficient time was given so I could not concentrate.

#### Typing skills

TT#11: For some, slow typing may be an obstacle to a certain extent.

TT#24: It may not be able to measure the true writing ability for those who cannot type well in English.

#### Facilitative functions

TT#17: I don't think this type of test can measure my true writing ability because having access to the facilitative functions means that I did not use my own knowledge.

TT#28: A person who's good at English but does not know how to use the facilitative functions would be at a disadvantage to those who are weaker in English but are good at using facilitative functions.

Other test takers in this group thought that the T-CWBT **could measure** their true writing ability due to the following reasons.

#### Time Limit

TT#10: Sufficient time is given.

#### Drafting

TT#5: Because we are able to edit some parts until we are satisfied.

#### Facilitative Functions

TT#19: Because the computer is not necessarily right all the time; we have to rely on our own judgment too.

**Opinions of Group 2 Test takers  
(with required multiple drafts)**

Some test takers in Group 2 thought that the TCWBT **could not measure** their true writing ability due to the reasons given below:

**Lack of references**

TT#19: If a dictionary is allowed, this test would definitely be able to measure my ability because sometimes I do not know the word in English.

Other test takers, on the other hand, felt that the T-CWBT **could measure** their true writing ability.

**Lack of Facilitative Functions**

TT#11: Because there are no helping functions at all, students have to write using all the knowledge they have.

**Freedom of expression**

TT#1: Because students are given the freedom to write, allowing us to fully express our opinions and we can correct our mistakes straight away.

**Drafting**

TT#5: The chance to write an outline first and produce drafts allowed me to fully use my thoughts and write in a systematic way.

TT#6: Drafting many times allows us to review our writing many times so there are fewer errors that are unintentionally produced, so it can to a certain extent measure our ability to write.

**Time Limit**

TT#6: The exam allows students to show their potential in composing English essays systematically under a limited amount of time.

TT#7: Because there is time to think, draft, and edit carefully.

A few students **disliked** the T-CBWT with drafts for the following reason.

TT#10: I do not like producing many drafts.

Some other subjects **preferred** the TCBWT with drafts for many reasons as follows.

**Convenience of Word Processor**

TT#1: We can correct our errors conveniently. Writing seems easier because typing can be as fast as our thoughts.

TT#2, 4, 24: It's convenient when we want to change content and details. We can delete easily, which is different from writing with pen and pencil which is messy and hard to read.

**Clear Instructions**

TT#7: It's convenient because we can type and the instructions are clear.

### Opinions of Group 3 Test takers

#### (with facilitative functions)

Some test takers in this group believe that the T-CWBT with facilitative functions **could not measure** their true writing ability due to the reasons given below:

#### Facilitative Functions

TT#2, 13: Because writing on the computer with facilitative functions makes examinees depend too much on the functions without using their own knowledge.

TT#15, 20: Maybe not an accurate measure of the writers' true ability because there are a lot of helping functions provided.

TT#17: Because we should use only our own knowledge when in a test situation.

Other test takers believed that the TCWBT **could measure** their true writing ability due to the following reasons.

#### Freedom of thought

TT#16: Because writing an evaluative essay, giving reasons requires freedom of thought.

#### Typing skills

TT#23: Writing or typing is no different.

#### Facilitative Functions

TT#5: Sometimes I know which word I want to use, but I spell it incorrectly. In other words, I know what I want to communicate to the reader and the helping functions help me to communicate my thoughts more comprehensively.

TT#12: Everybody is equally provided with the facilitative functions so they can all do the best they can with the tools they have.

The following are some **negative opinions** towards the Self-reflective Questions made by test group 3.

TT#16: Reading the SRQs and revising according to the SRQs will take up a lot of time.

TT#22: Because when we are doing the test, we need to concentrate more on our writing than the SRQs.

A few test takers gave **positive opinions** towards the Self-reflective Questions.

TT#1: We should be allowed to have it during the test to remind us.

Some test takers in this group **did not like** the TCBWT for a number of reasons.

#### Health hazardous

TT#8: Staring into the monitor for too long gives me a headache.



### Opinions of Group 4 Test takers

#### (control group)

One test takers in this group feels that the TCWBT with facilitative functions **could not measure** his/her true writing ability due to the reasons given below:

TT#30: I disagree because typing is confusing for me. I cannot write with ease. This writing topic requires a lot of thinking because the topic is a big problematic issue.

Some subjects **prefer not to take** the TCBWT without facilitative functions or drafts due to the following reasons.

TT#29: There are no helping functions.

TT#11: I don't like using the computer to compose essays.

TT#19: Using the computer on a writing test puts us under a lot of pressure, making me nervous and unable to think of vocabulary or sentences.

However, because of the following reasons, other subjects **prefer** the TCBWT to the traditional pen and pencil test.

#### Clear Instructions

TT#2: Instructions are easy to follow. The procedures are easy. I was able to practice typing, organizing skills and grammar.

#### Learning experience

TT#7: This test measures all our knowledge in writing and I can apply the writing experience I gain from this test to other real life situations.

TT#18: It is a kind of practice of analytical and critical ideas, which is not the usual boring pattern of writing because we have to show our point of view and opinions on the topic with variety. However, it may be difficult to check or grade it, if the rater is unfair or the rater's opinions are different from those of the writer.

## Appendix U: Writing Strategies Coding Scheme

The following list of strategies is adapted from Mu's (2005) Taxonomy of ESL Writing strategies. The Editing sub-strategy was added to this list. Codes were assigned to each sub-strategy for use in the coding of the stimulated retrospective interviews.

**Writing Strategies Coding Scheme**

Writing strategies	Sub-strategies	Code	Speculation
Rhetorical strategies	Organization	Rhet Org	- Having a beginning/body/ending
	Use of L1	Rhet L1	- Translating generated ideas into ESL
	Formatting/Modeling	Rhet FM	- Genre consideration
	Comparing	Rhet Com	- Different rhetorical conventions
Metacognitive strategies	Planning	Meta Plan	- Finding focus, deciding what to write about, deciding how to organize the text as a whole
	Monitoring	Meta Moni	- Checking and identifying problems
	Evaluating	Meta Eval	- Reconsidering written text, goals
Cognitive strategies	Generating ideas	Cog Gen	- Repeating, lead-in, inferencing, mind-mapping, listing, etc.
	Revising	Cog Rev	- Making changes in plan or to written text to clarify meaning
	Elaborating	Cog Elab	- Extending the contents of writing
	Clarification	Cog Clari	- Disposing of confusions
	Retrieval	Cog Retr	- Getting information from memory
	Rehearsing	Cog Reh	- Trying out ideas or language in which to express them
	Editing	Cog Edit	- Making changes to text to correct syntax or spelling
	Summarizing	Cog Sum	- Synthesizing what has been read
Communicative strategies	Avoidance	Com Av	- Avoiding some problems, avoiding the usage of some words, paraphrasing
	Reduction	Com Red	- Solving communication difficulties by giving up part of the original communicative goal
	Sense of readers	Com SOR	- Anticipating readers' response, adjusting expressions for the readers
Social/affective strategies	Resourcing	Soc Res	- Referring to dictionaries, prompt or other resources
	Getting feedback	Soc FB	- Getting support from teachers, peers, word processor suggestions
	Rest/deferral	Soc Def	- Reducing anxiety
	Assigning goals	Soc AG	- Dissolve the load of the task

## Appendix V: Coded interview transcriptions: Selected segments

The following are selected segments of verbal reports taken during the retrospective interviews. They were coded according to the Writing Strategies Coding Scheme presented in Appendix U. Three writing proficiency levels are represented in each test group. The names of the test takers have been changed from their original and each test taker has been given an identification number which follows their name (G = test group, ADV = advanced, INT = intermediate, LINT = low intermediate).

### Group 1 with Facilitative functions and required drafts

#### Wanda G1ADV4

<p><b>Meta Plan</b> <b>Rhet L1</b> <b>Soc Def</b> <b>Soc Res</b> <b>Cog Gen</b></p>	<p>The first thing I thought was. Well, first I didn't know that there would be translations in the prompt. I was thinking <b>what I would do if I got the prompt</b> and I couldn't understand it. But the <b>translations were there</b> so I first <b>thought about the reasons to answer the prompt</b>, that if I agreed with the prompt what were the reasons I could use for support.</p> <p><b>The translations that were given was a good thing.</b> I mean some words I didn't know so if not for the translations I wouldn't have been able to interpret the prompt. If I hadn't been able to translate the words, <b>I'd probably look at the key words.</b> I think I'd be able to do the exam anyway. I have no choice but to do so.</p>
<p><b>Cog Gen</b> <b>Meta Plan</b></p>	<p>After reading the prompt and <b>thinking about each of the major ideas</b>, like the main ideas of each of the reasons, then I <b>looked for the supporting details</b>, the details.</p>
<p><b>Cog Gen</b></p>	<p>I noted some of the major ideas down.</p>
<p><b>Cog Gen</b></p>	<p>I wrote and thought as I went on. <b>If they were major ideas, I thought of them before writing but if they were details, I thought of them as I wrote.</b></p>
<p><b>ComSOR</b></p>	<p>I give the most importance to the readers, that they understand what they are reading.</p>
<p><b>Cog Elab</b></p>	<p>After finishing the first draft, I read though it to see if there is anything missing and <b>what I should add to it</b> and where. <b>I made some short notes to tell myself what to add and I started adding them when I wrote the next draft.</b></p>

**Jamie G1INT19**

<p><b>Cog Gen</b></p> <p><b>Meta Moni</b> <b>Meta Eval</b></p> <p><b>Soc GF</b> <b>Meta Moni</b> <b>Spell/Gram check</b></p> <p><b>Meta Moni</b> <b>Soc GF</b></p> <p><b>Rhet L1</b></p> <p><b>Cog Retr</b></p> <p><b>Soc Res</b></p> <p><b>Learning experience</b></p>	<p>First, I thought about what the three supporting reasons would be.</p> <p>After finishing the first draft, I came back to check if what I had written was clear. But mostly, after writing the first draft I thought it was already ok.</p> <p>When the green or red lines appeared, I checked if it had to be changed. But I also checked whether the options given were right or not. If I was confident that my version was right, I did not follow the spelling or grammar checking advice.</p> <p>Sometimes the Microsoft is not accurate. Sometimes, when I typed once, the tense needed an –s but it advised me not to.</p> <p>When the green lines appeared, I corrected them immediately. I clicked to see what the problem was and followed the grammar check advice.</p> <p>I thought of the vocabulary in Thai first and what the English version of it would be. Usually the words are in my head - the vocabulary that are familiar to me. I used the words or sentences that I have seen or heard before.</p> <p>I used the dictionary, but the thesaurus I didn't use much.</p> <p>This type of test is alright with the helping functions, but they should allow a Thai English dictionary, too. The functions didn't really help much. I was mostly left on my own to write.</p> <p>I think my friends who are good at English would be able to make more use of the facilitative functions than those whose English is not very good. Like me, I am not so good at English. I can't even think of the English word, so I don't know what word to search for in the dictionary.</p> <p>I was able to learn a few things from this type of test. Like sometimes, I didn't know if the word was a verb or a noun, so when I searched for it in the dictionary, I was able to see which word is a noun or a verb and how they are spelled differently.</p> <p>Drafting was not a waste of time because it's like we were also able to revise as we were drafting.</p>
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**Rebecca G1LINT35**

<p><b>Meta Plan</b> <b>Cog Gen</b></p>	<p>First of all I thought about the content. What I should answer first, what my opinions were, whether I agreed or disagreed with the answer.</p>
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<b>Rebecca G1LINT35</b> <b>Cog Reh</b>	<p>Mostly I would draft on the computer because if anything is wrong I can erase and fix it right away on the computer. Then I would organize my thoughts to see what I should write down first or next, organizing the salient points. Then look at the grammar then the linking words.</p>
<b>Rhet Org</b>  <b>Meta Eval</b>	
<b>Rhet Org</b>	<p>The reason that I choose to put down first would mostly be the reason that everyone would see as the most important problem. I mean I chose the issue that would be the first thing that would be on everyone's mind. This would be the first reason then the other reasons would be less and less salient.</p>
<b>Soc Res</b> <b>Soc GF</b> <b>Meta Moni</b> <b>Soc FB</b> <b>Soc Res</b>	<p>When the red or green underlines show up my first reaction would be to recheck with the spelling-checker. I may have spelled it incorrectly or maybe I thought I checked it and it was correct in the first place. I'm not saying anything bad about the program but sometimes it can go wrong. But mostly I do check when the spell-check has appeared and check their suggestions.</p>
<b>Cog Reh</b>	<p>When the green underlines appear, I do check grammar. Sometimes I may have forgotten to add the -s or -ed ending or something like that and it happens to me often. It's not all the time that I correct it as soon as the underline appears. I like to finish the sentence first and then see if the green underline is still there.</p>
<b>Meta Moni</b>	<p>The first thing I think about when the green underline appears is the tense. Is the tense incorrect? Did I forget to add something to the tense? Something like that. If the green underline appears, sometimes I check the program's suggestion but sometimes when I look at it, there's no suggestion given. It may just say that it's wrong without any alternative given.</p>
<b>Soc FB</b>  <b>Soc FB</b> <b>Soc Res</b>	<p>I used the self-reflective questions a bit. I didn't use it while I was writing but before. I mean, before writing I read through it briefly. I skimmed through it then wrote my essay.</p>
<b>Learning experience</b>	<p>I think it's a kind of practice. One thing is that <i>it has helped me to evaluate myself to some extent</i>. Sometimes, like, when I write on paper there are no helping functions or anything at all so I tend to make mistakes easily. This test has helped me to a certain extent and it's helped me to remind myself not to forget things like tenses, not to forget grammar.</p>



## Group 2 with Drafts

Mandy G2ADV45

<p><b>Meta Plan</b></p> <p><b>Cog Gen</b> <b>Rhet Org</b></p>	<p>I first decided if I wanted to agree or disagree with the topic. Then I sought for the reasons why I would want to agree. I thought of the reasons first then I thought about how I was going to put the ideas together.</p>
<p><b>Rhet Form</b> <b>Rhet Org</b></p>	<p>I gave importance to the structure or the rhetorical type of the essay. This is after I thought about the content.</p>
<p><b>Cog Elab</b> <b>Rhet Org</b> <b>Cog Clari</b></p>	<p>After the first draft, in the second draft, I tried to develop the content, making it have more unity. Sometimes the content was still confusing so I tried to adjust it to make it clearer.</p>
<p><b>Cog Edit</b> <b>Cog Retr</b></p>	<p>I checked the grammar later, after the content. I just checked the points that I knew. I used whatever knowledge I have, like the –s –es endings or commas. This I did later.</p>
<p><b>Meta Moni</b> <b>Meta Eval</b></p>	<p>I read the essay twice after writing to make sure that I had covered everything.</p>
<p><b>Meta Moni</b> <b>Cog Retr</b> <b>Cog Edit</b></p>	<p>In general, I thought about the grammar as I was writing each sentence. I thought about how I'd write the sentence. But after the second draft, I looked at minor grammar points like adding the –s or –es after the verb or spelling. I actually started thinking about the grammar as I was about to write something down. Usually just the spelling, –s –es endings or if I forgot the –ed or changed it into the -ing.</p>
<p><b>Meta Eval</b> <b>Com SOR</b></p>	<p>I read it again and if it sounded strange, I tried to change the tenses to make it sound smoother.</p>
<p><b>Learning experience</b></p>	<p>I feel that this type of test is more systematic. If we had no guidance, we would have to worry about the content, and many other things. But this test allowed us to focus on each aspect of writing in a systematic way.</p>

Stephanie G2INT56

<p><b>Cog Gen</b></p>	<p>I tried to seek three separate reasons but it was difficult to do. Even until the very end of the draft, I was still looking for reasons to support my thesis and still making changes.</p>
<p><b>Meta Plan</b></p> <p><b>Cog Gen</b></p>	<p>At first, I listed four or five reasons to support my topic just in case I needed them. Then I chose the three reasons and tried to look for supporting examples or details for each reason. Then when I thought the details were sufficient, I started typing.</p>

<b>Stephanie G2INT56</b>	
<b>Rhet L1</b>	When I typed, I <b>thought in both Thai and English</b> .
<b>Cog Retr Soc FB</b>	The <b>vocabulary I used</b> was from the words that I already know and sometimes I asked my friend.
<b>Meta Moni Meta Eval Cog Rev Cog Edit</b>	In general, if I write on paper, I will just write one draft and that's it. But if it's on a computer, I <b>revise and edit as I write</b> .
<b>Cog Edit Com SOR</b>	I read it over and edited again one last time. If I got stuck in one place, I would see if there was another way to make it sound better. Then I <b>changed it to make it sound smoother</b> . <b>I didn't have a system</b> .
<b>Learning experience</b>	<b>I learnt some ideas on how to write from this test, like to focus on the content first and then deal with the grammar later.</b>

### Ursula G2LINT69

<b>Cog Retr</b>	<b>I first looked at the topic given and thought of the vocabulary that I could use</b> . But the vocabulary I know is limited so I thought and thought and thought until time started to run out then I started to write.
<b>Meta Moni Cog Edit</b>	<b>I tried to make the grammar right</b> , but it's not.
<b>Cog Retr Rhet L1</b>	I thought about the <b>vocabulary</b> that I would use. Then I <b>tried to translate the prompt</b> to see what it required.
<b>Cog Gen Cog Reh</b>	<b>I jot down few notes</b> because it was time consuming to write an outline so I just keyed onto the computer.
<b>Cog Elab</b>	I wrote just only one draft, then in the second draft, <b>I added on to it, like more details and elaborated with a bit more reasons</b> but I don't know a lot of vocabulary.
<b>Cog Retr</b>	<b>I used simple words that I remember</b> , words that made sense but sometimes they do not make sense.
<b>Meta Moni</b>	For grammar, I used basic principles. I <b>checked to see that they were right</b> , but they aren't usually correct. My grammar is terrible. My basic knowledge of grammar is not so good. I try to go for tutoring and it's getting better.
<b>Cog Elab Cog Edit Meta Moni</b>	For the second draft, I checked to see what I could elaborate on, but I <b>elaborated only a few sentences</b> . <b>I also edited a few parts</b> . <b>I feel that the grammar is probably wrong</b> .  <b>I used so much time on the first draft that I didn't have enough time left to edit or proof read.</b>

<p><b>Ursula G2LINT69</b> <b>Learning Experience</b></p>	<p>I think it's a good test, but if it's a real test, I would have to try harder than this. <b>I would have to prepare more</b> because like for this test, I didn't know the prompt in advance or know what direction it would be going. If it's a real test the teacher would say what the essay is about.</p> <p>But this is a good kind of test because <b>we can use technology to help us with the writing</b>. I am quite adept at using the Microsoft Word but not so good at typing in English. <b>I think it does affect my writing because I have to punch in one button and a time</b>.</p> <p>Teachers let me write simple essays. <b>They teach us the structures of each type of essay. There must be an introduction and things like that. Usually, she gives me a writing task to do at home. Only a single draft and then she gives us feedback, correcting some points. She doesn't have us rewrite it.</b></p>
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### Group 3 with Facilitative Functions

**Danielle G3ADV84**

<p><b>Cog self-clari</b></p> <p><b>Meta Plan Cog Gen</b></p> <p><b>Cog Gen</b></p> <p><b>Cog Reh</b></p>	<p>I used up a lot of time to <b>read and understand the prompt</b> because I read it first to understand it. Then when I started writing I had to go back and look at the prompt again. <b>I think I read it quite often in case there were some ideas that might have popped up in my head so I did read the prompt quite often.</b></p> <p>In terms of planning, so suppose when I first get the prompt, <b>I tried to list down the points I could think of first, like the advantages and disadvantages</b>. Then whichever contained more supporting ideas, I'd choose that one. Once I had all the supporting ideas, I started writing. But I got stuck here and there as I was writing because I am weak at English.</p> <p>So briefly, <b>I used up about 5 minutes on thinking about what to write</b>, like in general. Just brief thoughts about it because sometimes I didn't even use the initial ideas I had. <b>So I was thinking again as I wrote</b>.</p> <p>Sometimes I can't finish writing on time. This time, I used up almost all the hour and a half just on writing.</p> <p><b>Usually I don't go back and revise. Mostly I would try to go back if there is time left and revise but when I don't have time I just don't bother.</b></p> <p>I don't know these two terms (revise and edit). Doesn't edit mean to erase? I know the translation of it but I don't know what these two terms have to do with writing.</p>
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<b>Danielle G3ADV84 (Continued)</b>	Usually I would just edit because for the content, if I wanted to change it, I wouldn't know what to change since I already put down all the ideas I had. Like for grammar, I can check and correct it but for the content, I wouldn't know how to make it better.
<b>Meta Moni</b>	I think this paragraph is quite confusing. It's like it can be written more concisely and clearer than this. I really wouldn't know how to make it better.
<b>Meta Moni Cog Edit</b>	I usually just check the grammar and spelling because I don't know how to make it better otherwise. Usually the feedback I receive from my teacher is mostly on grammar.
<b>Writing Difficulty</b>	I think there are many factors that make writing difficult. Thinking about supporting reasons is difficult. Putting words together, structuring the sentence or thinking about the right vocabulary. I don't know how to write well in English.
<b>Soc Res Soc GF</b>	The dictionary and thesaurus helped to some extent. It helped with spelling too. It sometimes helps correct grammar. Mostly I would just correct it according to the program's suggestion. Except when I am really confident I won't follow the program's suggestion.
<b>Cog Retr</b>	Mostly I use the words that I already know. The thesaurus helped to some extent. Sometimes I looked up a word (from the dictionary), but ended up using the words from the thesaurus instead.
<b>Soc Res Soc GF</b>	In everyday writing, I don't usually use these functions at all.  Typing may have an affect on the writing but is not the major reason for not being able to write. I think the major reason is that I wasn't able to think right at the time.
<b>Quality of good essays</b>	I would correct it immediately when the red or green underlines appear.  I do have some questions or reminders already in my head that are similar to the ones in the self-reflective questions checklist, but not all of the ones that are there. I would remind myself of these things before I write. I've seen these terms before, but I don't know all of them.  Good essays should be like what we were taught. Easy to understand, the supporting reasons are good not confusing.

### Vincent G3INT88

<b>Meta Eval Cog Clari</b>	And the end of the first paragraph, the last sentence of the first paragraph; because I read it later and I felt confused. I mean, the sentence structure is not very clear. It should...If I have to fix it, I would explain it in separate sentences, one-by-one. I wouldn't explain it all in one sentence like I did here.
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<p><b>Vincent G3INT88</b> <b>Com SOR</b></p>	<p>This sentence. After reading this part, <b>I feel that it sounds quite strange</b>. I mean, the sentence should be rephrased. That's all.</p> <p>Composing all the ideas down into one. It's like. I mean in one essay we have to sit down and think about what to put in each paragraph.</p>
<p><b>Meta Eval</b></p>	<p>Like many times during a writing test, I keep on writing and it's not enough. <b>I mean the main ideas that I have thought about are not enough, not enough to meet the requirements of the prompt</b>.</p>
<p><b>Cog Elab</b></p>	<p>What I'm saying is the ideas are too few and <b>I have to think of more ideas</b>. And the more I add, the more I get off topic. Yet, if I think about everything completely at the beginning, I wouldn't have enough time to write either.</p>
<p><b>Meta Moni</b></p>	<p>Sometimes what happens is I have already thought carefully about the main ideas, but <b>when I actually write everything down, the ideas turn out to be fewer than what I had planned</b>. Like some of the topics that I have thought about can't seem to be expanded. I may be able to write only 2 or 3 lines in a paragraph and that's all I can seem to think of.</p>
<p><b>Writing Difficulty</b></p>	<p><b>If I do revise it 2 or 3 times, I would see more and more errors.</b></p> <p>The first thing is, not counting vocabulary and grammar, suppose they're both all correct, there should be, like in this essay, there are supporting reasons. The supporting reasons should be plausible. The supporting reasons should be based on some sort of principle that people can believe in. And it should be written so that it can be understood easily. The sentences and content should not be too complex. That's all.</p>
<p><b>Cog Edit</b></p>	<p>After I finished a sentence, I checked it once. <b>If the red and green lines appeared, I corrected the mistakes right away</b>. I dragged the whole sentence and clicked right on the mouse to see what had to be corrected first.</p> <p>If I agreed with the program's suggestion, I clicked the mouse to correct it. If I didn't agree with the program's suggestion, I thought about it again to see how it was incorrect. Then I corrected it. Rephrased it. If it were still green, if I looked at it two or three times and saw that nothing more was wrong with it, I just left it like that</p>
<p><b>Soc Res</b></p>	<p>Like for some of the words I wasn't so sure about the meaning because some words can have many meanings so <b>I checked in the dictionary first</b> to see if I could really use it. What I am not really accurate in is the part of speech, like adverbs or adjectives. If I'm not confident, I looked it up in the dictionary to check the part of speech.</p>



<b>Vincent G3INT88 (Continued)</b>	<p>.</p>
<b>Cog Reh</b>	<p>I didn't use the Thesaurus that much at all. The guiding questions (SRQ). When I wrote, I didn't pay attention to these questions at all. I mean, I just did according to what I normally do when I write, which is think, read and think. <b>Everything happened in my head. Then I started writing. I don't like to draft on paper.</b></p>
<b>Cog Elab Cog Edit</b>	<p>And it's even better if I type on the Microsoft word because it's easy to make corrections. So I can just type away. I just typed down the main points first <b>then I was able to add on to them later.</b> If something was wrong, <b>I was able to erase and correct it in no time.</b></p>
<b>Meta Plan</b>	<p>These types of questions (SRQ) were not in my head. Mostly I just thought about the points, what the prompt was asking. <b>I just thought about how many points the prompt was asking for.</b> How many points I had to address and how I would answer. I just thought about these major aspects and then started writing. <b>Then I thought about where I should be adding more content.</b></p>
<b>Cog Elab Cog Clari</b>	<p></p>
<b>Rhet Org</b>	<p><b>I did try to address these aspects (organization and language) even without the reminder questions.</b></p> <p>I mean <b>I tried not to go off topic</b> too much and I learnt how to address content in the past two semesters.</p>
<b>Cog Reh</b>	<p>For sentence structure, <b>I did try to use extraordinary words that are not usually seen or sentence structures that are not common in order to create variety</b> but they may have been a bit confusing.</p> <p><b>I feel that the self-reflective questions in general are good. If we look at them before or after we write, it will be useful but if we use it while we write, it's like limiting our work just to cater to these questions. Each person has a different way of writing or different steps they follow.</b> It should only be used for re-checking to see if there are any points according to this list that needs fixing.</p>
<b>Learning experience</b>	<p>Firstly, I don't have the chance to write long essays like this. Mostly I would write just short paragraphs or like short answers to problems. But for essays of one or two pages I don't get to write very often. So I learnt like how to think or like how I would go about composing and organizing my reasons or answers in a way that other people would understand.</p>

## Terence G3LINT103

<p><b>Cog Self-Clari</b> <b>Cog Gen</b> <b>Rhet Org</b></p>	<p>I looked at the questions to see what they are asking and tried to think of many different reasons. Then I started to write the introduction.</p>
<p><b>Rhet L1</b> <b>Meta Moni</b> <b>Com SOR</b></p>	<p>I thought in Thai most of the time and translated. But some words I thought of were in English and I stopped to think whether the word was the right one to use, whether it communicated what I was trying to say.</p>
<p><b>Soc Res</b> <b>Cog Retr</b></p>	<p>I used the dictionary and thesaurus quite a lot. But usually I relied mostly on the words that I already knew. I did use the thesaurus.</p>
<p><b>Soc FB</b> <b>Cog Edit</b></p>	<p>If a green or red line appeared, I was almost sure there was something wrong, so I clicked right on the mouse to see. Sometimes it was spelling. But if the green line appeared, it was sometimes the comma or colon that was the problem. I corrected these as soon as they showed up.</p>
<p><b>Com Av</b> <b>Soc Res</b> <b>Soc GF</b></p>	<p>If I didn't know how to correct it, I kept on changing the sentence structure until the green or red line no longer appeared. Sometimes when I clicked right on the mouse, it indicated a "fragment", which means that there is no such thing in the database or something like that. I'm not so sure.</p>
<p><b>Soc Res</b> <b>Soc GF</b></p>	<p>If I have a writing assignment for homework, I would usually use the talking dictionary.</p>
<p><b>Soc Res</b> <b>Soc GF</b></p>	<p>I used the SRQ after finishing the task. I didn't know that I had to use it while I wrote. They are things that I already know. The time was up already, so I didn't have a chance to correct or rewrite it.</p>
<p><b>Meta Moni</b></p>	<p>I was able to assess my own ability on doing this type of test. I know that I got stuck on the grammar most of all. I need to improve on my grammar.</p>
<p><b>Learning exeprience</b></p>	<p>Usually in class, I hurry up and finish a draft and when I get feedback, we don't need to rewrite it. If I get less than 7 points, the teacher would let us rewrite.</p>
<p><b>Learning exeprience</b></p>	<p>I think this type of test is good. The SRQ questions are helpful and they are useful reminders but I would probably not have enough time to rewrite according to the suggestions.</p>

**Group 4 Control Group**

**Pauline G4ADV114**

<p><b>Meta Plan Cog Gen</b></p>	<p>The first 15 minutes, I thought about all the issues relevant to the topic. Then did a kind of mind mapping, listing all of the ideas down, as well as the details that supported each of the main ideas.</p>
<p><b>Rhet Org</b></p>	<p>After the first 15 to 20minutes, I started writing the introduction. Then I eventually started to organize each point that I have listed. Then came the conclusion.</p>
<p><b>Cog Edit</b></p>	<p>Writing time took about 30 minutes or 40 minutes. Then the last 5 minutes was for proofreading.</p>
<p><b>Cog Rev Cog Elab</b></p>	<p>Any time left was spent on thinking about what was missing or what I wanted to, like, to add on to the essay.</p>
<p><b>Meta Eval Cog Rev</b></p>	<p>To edit is like fixing or correcting grammar, spelling or organization. I think editing will depend on...I think the first important thing is the idea, whether it is relevant to the question in the prompt or whether I have written down everything that I have planned. The first thing is the idea.</p>
<p><b>Meta Moni Cog Edit Rhet Org Com SOR</b></p>	<p>Then the second thing is grammar. Whether the sentences are structured correctly or whether the sentences are redundant or whether I have written them correctly or not or are there linking words or when I read it, is it smooth?</p> <p>I would like to add some ideas or supporting ideas to each of the paragraphs because it seems that the supporting ideas are not enough.</p> <p>Some parts are a redundant and a bit confusing. Like the last paragraph here, where it says, "Where could I buy..." I don't know. Like there's too much gibberish. It slowly gets to the point. I think if I just got straight to the point, I could have also added a bit more content to it.</p> <p>I agreed with the topic, to ban street vendors. I would like to get straight to the point in the first sentence, like I'd just say "If people want to buy something, they can go to the market".</p> <p>I don't have to mention the part about the "foreigner" anymore. And the grammar may not have been checked thoroughly enough. To sum up, I don't know. I don't think it's a great essay but I don't know how I'd make it better.</p>
<p><b>Quality of good essays</b></p>	<p>A good piece of writing is one that has some ideas that I had never thought of. Like new perspectives or ideas that I would never have imagined. When I read them, I would feel that I have learnt something new.</p>

<p><b>Pauline G4ADV114</b> (Continued)</p>	<p>Because I think writing is all about presenting the ideas of the writer through words. So the grammar or sentences would really depend on the background of the writer, how much the writer has learnt or how careless or sloppy the writer was at the time of writing. I respect the one who writes with good ideas more than one that writes with everything correct but with not very many ideas.</p>
<p><b>Writing difficulty</b></p>	<p>The most difficult thing in writing an essay like this would be the ideas. Within the amount of time given to us, will have to cover all the angles that we would like to express.</p>
<p><b>Learning experience</b></p>	<p>And another difficult thing is how we would express ourselves so that we can be understood. When writing in Thai it may be easy but when it comes to writing in English, we need to use words. I mean, what words can we use to make it concise and at the same time make the reader understand what we mean.</p> <p>Actually, I think I should read more, not just for comprehension but also to see the patterns, how they write, how they shorten or expand ideas. I have to know which words can be used in which context. What word should be used with what verb.</p>
<p><b>Learning experience</b></p>	<p>I gained new experience from participating because I have never taken a writing test on the computer before. I usually just draft on a piece of paper and draw arrows here and there.</p> <p>Usually when I have an assignment, I would write on the lines and draft it on an A4 paper then type the final draft on the computer.</p> <p>But this is nice because I just think about the topic and type directly onto the computer. I can erase and it's not messy.</p> <p>I don't think typing is an obstacle for writing. I like typing on the computer more than writing by hand. I'm not very good at typing but it's convenient when you want to cut, copy and paste. I like neat work. If I have to use whiteout, I feel that it's not very good.</p>

**Sophie G4INT121**

<p><b>Meta Plan</b></p>	<p>I used quite some time to look at the topic to see what there was to say and think about what I was going to write. So it took about 5-6 minutes. Then I thought about the ideas for a bit longer. After I read, I thought about whether I wanted to agree or disagree with the prompt and what I had to write. So I took some time to think about it for a little bit longer because I really couldn't think of anything. Something like 10 minutes to think about what to write.</p>
<p><b>Cog Gen</b></p>	<p>After I had all the thoughts down, it seemed like the writing part became faster. The hard part then was the vocabulary and the rest was like I was able to somehow think through it. So this took long, maybe about half an hour.</p>
<p><b>Cog Retr</b></p>	<p></p>

<p><b>Sophie G4INT121</b>  <b>Meta Eval</b>  <b>Cog Rev</b></p> <p><b>Meta Moni</b>  <b>Cog Elab</b></p> <p><b>Cog Retr</b>  <b>Com Av</b></p> <p><b>Learning experience</b></p>	<p>I used the remaining time for revising to see if there were any parts I wanted to expand. I added on other reasons. I also looked at the vocabulary to check if I used the right vocabulary. And then the grammar. I added on to the content more than fixed grammar. I just briefly went through the grammar part.</p> <p>I don't know the meaning of edit and revise.  I tend to add on to the content more than correcting the grammar. For grammar, I just read to check if it is correct that's all.</p> <p>I think I'd like to change the grammar and maybe the vocabulary. Maybe I could make it sound better. Like where the reasons are. I was probably thinking really fast at that time so the vocabulary I used are simple words. I did not use vocabulary that would be suitable for written language.</p> <p>I really don't know which word I'd like to change. Maybe I can change the sentence structure making it smoother than it is now.</p> <p>Yes, I was thinking about the paragraphing that maybe I should divide them into separate paragraphs, so that it can be more easily read.</p> <p>When I am composing an essay in English, it's different. When I write in Thai it's written one way, but if it's English the sentence structure is written in another way, so I have to try to make the sentence structure correct. Then there's grammar and vocab. Sometimes I cannot remember the vocabulary.</p> <p>Like, it should be well-organized. Like, the way it's organized should be easy for the reader to understand. Maybe about the sentences, they should be well-linked.</p> <p>I was able to practice writing, grammar and was able to see how I use vocabulary. And it has helped me to reflect on my writing making me see that I am not quite good yet so I should go find additional information or I may have to practice writing more, something like that. Maybe I should do additional exercises.</p>
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**Valerie G4LINT144**

<p><b>Cog Self-Clari</b>  <b>Rhet L1</b></p> <p><b>Soc Res</b></p> <p><b>Cog Reh</b></p>	<p>If there was one hour to finish the task, I used around 10-20 minutes to read and understand the prompt because, like I said, I'm not very good at English. I can interpret English very slowly.</p> <p>The difficult vocabulary translated into Thai in the prompt was helpful.</p> <p>For planning...Mostly I didn't plan. I just went straight ahead and wrote. I probably thought a little about what I was going to say but I</p>
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<b>Valerie G4LINT144</b>	didn't make a formal plan. Mostly I thought as I wrote.
<b>Meta Eval Cog Edit</b>	Writing time took about half an hour. I read the essay and if it wasn't good, I corrected it. I took about 10 minutes to read through and correct any errors.
<b>Meta Moni Cog Edit</b>	Editing for me means to correct the wrong parts. Like sometimes the grammar is wrong so I might go back and check if I had something wrong and edit it.
<b>Rhet Org</b>	<p>I did do some revising. Like, I moved some ideas around. Sometimes I think that a reason should be at the beginning so that the paragraphs can be linked. Between revising and editing, I probably did more revising than editing grammar..</p> <p>My thoughts go back and forth, confusing. It's redundant. Like, I've mentioned something before and then I repeat it. For example, I explained that when you buy it in the department store it's more expensive and here, I say, "if you buy it here it's cheap". So it's kind of redundant.</p> <p>It seems like the reasons are not in depth enough. There should be more details than this. Each reason given was not explained in depth enough.</p> <p>I didn't revise it the way I said I should have because I'm usually afraid when there is a time limit. I get nervous and cannot do it. I couldn't do it. I didn't finish writing before time. I saw my friends write so much and I was worried and couldn't think of what to say. I couldn't think of the words in English so I couldn't write more than this.</p>
<b>Writing difficulty</b>	I'm a person who worries about grammar. I'm afraid that if I write a certain way it'll turn out strange. Like mostly when I write I have a bad habit of translating from Thai word for word. I don't write in English like I should, the kind where I have to reverse the word order when I translate. I just go ahead and translate it from Thai.
<b>Rhet L1</b>	I write word for word. For instance, in correct English I would only need a few words to say something, but instead I modify with so many words in order to say just one word.
<b>Cog Retr Com Av</b>	The prompt may also be difficult to understand. Sometimes I cannot interpret the prompt.
<b>Quality of good essays</b>	A good essay should be able to lead us into the story effectively. It should be interesting and the content should be relevant to the introduction. The details should be complete.

## Appendix W: Revision Changes Coding Scheme

This table of revision changes is adapted from Faigley and Witte's (1981) Taxonomy of Revision Changes. Organization Changes have been added and other grammatical items have been added to the original Formal Changes list. This table is used for the coding of changes made on test takers drafts.

Revision Changes									
Surface Changes				Text-Based Changes				Organization Changes	
Formal changes	Code	Meaning-preserving	Code	Microstructure	Code	Macrostructure	Code	Type of Organization	Code
Spelling	<b>SFC sp</b>	Additions	<b>MPC add</b>	Additions	<b>MIC add</b>	Additions	<b>MAC add</b>	Local relocation	<b>LR</b>
Punctuation	<b>SFC punc</b>	Deletions	<b>MPC del</b>	Deletions	<b>MIC del</b>	Deletions	<b>MAC del</b>	Global relocation	<b>GR</b>
Format	<b>SFC form</b>	Substitutions	<b>MPC sub</b>	Substitutions	<b>MIC sub</b>	Substitutions	<b>MAC sub</b>		
Number (plural, singular)	<b>SFC num</b>	Permutations	<b>MPC perm</b>	Permutations	<b>MIC perm</b>	Permutations	<b>MAC perm</b>		
Article (Determiners)	<b>SFC art</b>	Distributions	<b>MPC dist</b>	Distributions	<b>MIC dist</b>	Distributions	<b>MAC dist</b>		
Preposition	<b>SFC prep</b>	Consolidations	<b>MPC cons</b>	Consolidations	<b>MIC cons</b>	Consolidations	<b>MAC cons</b>		
Tense	<b>SFC tens</b>								
Aspect	<b>SFC asp</b>								
Modality	<b>SFC mod</b>								
Agreement (subject/verb, pronoun)	<b>SFC agr</b>								
Part of Speech	<b>SFC pos</b>								

**Definitions: Local relocation:** Moved clause(s)/ sentence(s) from one position to another within the paragraph

**Global relocation:** Moved clause(s)/sentence(s) from one paragraph to another (across paragraphs)

Definitions of other changes are presented in Chapter II pages 26-27.

**Note:** Add (+) to positive changes that improve the quality of the text  
 Add (-) to negative changes that impair the quality of the text  
 Add (0) to neutral changes, changes that neither improve or impair the quality of the text

## Appendix X: Summary of Revision Changes Performed by Test Takers

Figure 1 Text-based changes

Test taker	Text-based Changes																								Total
	MIC Add+		MIC Add-		MIC Add0		MIC Del+		MIC Del-		MIC Del0		MIC Sub+		MIC Sub-		MIC Sub0		MIC Per+2D	MIC Dist+		MIC Dist-3D	MAC Add-		
	2D	3D	2D	3D	2D	3D	2D	3D	2D	3D	2D	3D	2D	3D	2D	3D	2D	3D		2D	3D		2D	3D	
G1ADV5	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
G1ADV7	7	2	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	14
G1ADV12	4	1	2	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	1	-	-	-	-	-	11
G2ADV37	11	2	1	1	1	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	19
G2ADV40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G2ADV43	4	-	1	-	-	-	-	1	-	-	-	-	2	1	-	-	1	-	-	-	-	-	-	-	10
G1INT19	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
G1INT20	4	-	-	-	1	-	-	-	1	-	1	-	1	1	-	-	-	1	-	-	-	-	-	-	10
G1INT23	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
G2INT52	6	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
G2INT56	7	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	10
G2INT58	3	-	2	-	1	-	4	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	13
G1LINT29	3	-	2	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	7
G1LINT32	3	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	1	1	7
G1LINT35	3	-	-	-	-	-	-	-	-	-	1	-	3	-	-	-	-	-	-	-	-	-	-	-	7
G2LINT70	9	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
G2LINT71	4	2	-	-	-	1	-	-	-	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	10
G2LINT72	4	2	-	-	-	-	1	-	-	-	1	-	1	-	-	-	-	-	-	-	1	-	-	-	10
Total	78	14	9	3	5	1	10	2	3	1	5	1	9	3	1	2	2	1	2	2	1	1	1	1	157
	110						22						18						2	3		2	157		

**Note:** MIC = Microstructure changes, MAC = Macrostructure changes, MPC = Meaning-preserving changes, SFC = Surface Formal Changes, Sp = Spelling, Punc = Punctuation, Form = Format, Num = Number, Det = Determiner, Prep = Prepositions, Ten = Tense, Asp = Aspect, Mod = Modality, Agr = Agreement, POS = Part of Speech, Add = Additions, Del = Deletions, Sub = Substitutions, Perm = Permutations, Dist = Distributions, LR = Local Relocations, GR = Global Relocations; 2D = 2<sup>nd</sup> Draft; 3D = 3<sup>rd</sup> Draft (+ indicates positive changes, - indicates negative changes, 0 indicates neutral changes)

Figure 2: Surface Changes: Meaning-preserving

Test taker	Meaning Preserving Changes																												Total			
	MPC Add+		MPC Add-		MPC Add0		MPC Del+		MPC Del-		MPC Del 0		MPC Sub+		MPC Sub -		MPC Sub0		MPC Perm+		MPC Per -		MPC Dist+		MPC Dist -		MPC Dist0 2D	MPC Con+ 2D				
	2D	3D	2D	3D	2D	3D	2D	3D	2D	3D	2D	3D	2D	3D	2D	3D	2D	3D	2D	3D	2D	3D	2D	3D	2D	3D				2D	3D	
G1ADV5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
G1ADV7	1	2	-	-	-	-	-	1	-	-	-	1	1	4	-	-	-	2	-	1	-	-	-	-	-	-	-	-	-	-		
G1ADV12	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1		
G2ADV37	10	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	1		
G2ADV40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
G2ADV43	1	1	-	-	-	-	-	1	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-		
G1INT19	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-		
G1INT20	-	-	-	-	2	-	-	-	1	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
G1INT23	-	-	-	-	-	-	-	1	-	-	-	-	-	5	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-		
G2INT52	1	2	-	-	2	-	-	-	-	-	3	-	3	-	-	-	-	-	1	-	1	-	1	-	-	-	-	-	-	-		
G2INT56	5	3	1	-	-	-	4	-	-	-	1	1	3	4	1	-	2	1	1	1	-	-	-	-	-	-	-	-	-	-		
G2INT58	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	-	2		
G1LINT29	1	-	-	-	-	-	-	-	-	-	-	-	2	2	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-		
G1LINT32	-	1	-	-	-	2	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	1	-	-	1	-		
G1LINT35	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
G2LINT70	4	-	1	-	-	1	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		
G2LINT71	1	2	-	1	-	2	-	-	1	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-		
G2LINT72	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-		
Sum	35		3		9		8		5		8		38		6		19		5		2		7		1		-	6	152			
Total	47						21						63						7						8						6	152

Note: MIC = Microstructure changes, MAC = Macrostructure changes, MPC = Meaning-preserving changes, SFC = Surface Formal Changes, Sp = Spelling, Punc = Punctuation, Form = Format, Num = Number, Det = Determiner, Prep = Prepositions, Ten = Tense, Asp = Aspect, Mod = Modality, Agr = Agreement, POS = Part of Speech, Add = Additions, Del = Deletions, Sub = Substitutions, Perm = Permutations, Dist = Distributions, LR = Local Relocations, GR = Global Relocations; 2D = 2<sup>nd</sup> Draft; 3D = 3<sup>rd</sup> Draft (+ indicates positive changes, - indicates negative changes, 0 indicates neutral changes)

Figure 3: Surface Changes: Formal

Test taker	Formal Changes																										Total		
	SFC Sp+		SFC Punc+		SFC Punc- -2D	SFC Form+		SFC Form- -2D	SFC Num+		SFC No- 2D	SFC Det+		SFC Det- 2D	SFC Prep+	SFC Ten+ 2D	SFC Ten- 2D	SFC Asp+ 2D	SFC Asp- 3D	SFC Mod+	SFC Mod- -2D	SFC Agr+		SFC POS+		SFC POS-			
	2D	3D	2D	3D		2D	3D		2D	3D		2D	3D									2D	3D	2D	3D	2D		3D	2D
G1ADV5	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	4
G1ADV7	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
G1ADV12	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
G2ADV37	-	3	1	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	-	-	-	12
G2ADV40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2
G2ADV43	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	4
G1INT19	3	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	3	-	-	-	-	9
G1INT20	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	4
G1INT23	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	-	-	-	7
G2INT52	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
G2INT56	1	1	1	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	7
G2INT58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
G1LINT29	1	4	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	7
G1LINT32	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	2
G1LINT35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	2
G2LINT70	1	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	1	1	-	-	-	1	-	-	-	6
G2LINT71	2	1	-	-	2	2	-	-	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
G2LINT72	-	1	1	1	-	1	5	1	-	-	-	-	1	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	13
Sum	9	11	3	6	2	10	6	3	8	4	1	1	2	1	1	3	1	1	1	1	3	1	4	6	4	1	1	1	96
Total	20		11			19			13			4		1		4		2		5			10		7				96

**Note:** MIC = Microstructure changes, MAC = Macrostructure changes, MPC = Meaning-preserving changes, SFC = Surface Formal Changes, Sp = Spelling, Punc = Punctuation, Form = Format, Num = Number, Det = Determiner, Prep = Prepositions, Ten = Tense, Asp = Aspect, Mod = Modality, Agr = Agreement, POS = Part of Speech, Add = Additions, Del = Deletions, Sub = Substitutions, Perm = Permutations, Dist = Distributions, LR = Local Relocations, GR = Global Relocations; 2D = 2<sup>nd</sup> Draft; 3D = 3<sup>rd</sup> Draft (+ indicates positive changes, - indicates negative changes, 0 indicates neutral changes)



**Figure 4: Total Revision changes**

Total Revision Changes																			
Test taker	SFC+	SFC-	SFC0	Total SFC	MPC+	MPC-	MPC0	Total MPC	MIC+	MIC-	MIC0	Total MIC	MAC-	Total MAC	LR+	LR0	GR+	GR0	Total ORG
G1ADV5	4	-	-	4	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-
G1ADV7	1	2	-	3	10	-	3	13	14	-	-	14	-	-	-	1	-	-	1
G1ADV12	2	-	-	2	2	1	-	2	6	2	3	11	-	-	1	-	-	1	2
G2ADV37	11	-	-	11	14	-	1	15	14	3	2	19	-	-	-	-	-	-	-
G2ADV40	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G2ADV43	3	1	-	4	6	-	1	7	5	1	1	7	-	-	-	-	-	-	-
G1INT19	8	-	-	8	1	3	3	7	2	-	1	3	-	-	-	-	-	-	-
G1INT20	1	3	-	4	-	3	3	6	6	1	3	10	-	-	-	-	-	-	-
G1INT23	7	-	-	7	6	-	5	11	6	-	-	6	-	-	-	-	-	-	-
G2INT52	1	-	-	1	8	1	5	14	8	-	-	8	-	-	-	-	-	-	-
G2INT56	7	-	-	7	21	2	5	28	10	-	-	10	-	-	-	-	3	-	3
G2INT58	-	-	-	-	4	2	1	7	8	4	2	14	-	-	-	2	-	-	2
G1LINT29	7	-	-	7	6	1	-	7	4	2	-	6	-	-	-	-	-	-	-
G1LINT32	1	1	-	2	4	3	2	8	3	1	1	5	2	2	-	-	-	-	-
G1LINT35	2	-	-	2	1	-	-	1	6	-	1	7	-	-	-	-	-	-	-
G2LINT70	6	-	-	6	10	1	1	12	9	2	-	11	-	-	-	-	-	-	-
G2LINT71	8	2	-	10	3	2	4	9	6	3	1	10	-	-	1	-	1	-	2
G2LINT72	5	1	1	7	2	-	-	2	9	-	1	10	-	-	-	-	-	-	-
Total	76	10	1	87	98	19	34	149	116	20	16	152	2	2	2	3	4	1	10

**Note:** MIC = Microstructure changes, MAC = Macrostructure changes, MPC = Meaning-preserving changes, SFC = Surface Formal Changes, Sp = Spelling, Punc = Punctuation, Form = Format, Num = Number, Det = Determiner, Prep = Prepositions, Ten = Tense, Asp = Aspect, Mod = Modality, Agr = Agreement, POS = Part of Speech, Add = Additions, Del = Deletions, Sub = Substitutions, Perm = Permutations, Dist = Distributions, LR = Local Relocations, GR = Global Relocations; 2D = 2<sup>nd</sup> Draft; 3D = 3<sup>rd</sup> Draft (+ indicates positive changes, - indicates negative changes, 0 indicates neutral changes)

## Appendix Y: Scored texts: Selected samples

This subsequent pages are selected samples of posttest drafts of test takers of all four test groups and the average scores awarded on the final drafts of their posttests which are sequenced in the following order:

### Group 1

G1ADV7      Carla (1<sup>st</sup> draft & 2<sup>nd</sup> draft)  
 G1INT18     Jamie (1<sup>st</sup> draft & 2<sup>nd</sup> draft)  
 G1LINT31    Tiana (1<sup>st</sup> draft & 2<sup>nd</sup> draft)

### Group 2

G2ADV41     Keisha (1<sup>st</sup> draft & 2<sup>nd</sup> draft)  
 G2INT51     Nina (1<sup>st</sup> draft & 2<sup>nd</sup> draft)  
 G2LINT71    Kyle (1<sup>st</sup> draft & 2<sup>nd</sup> draft)

### Group 3

G3ADV77     Megan (Pretest & Posttest)  
 G3INT92     Wanda (Pretest & Posttest)  
 G3LINT108   Patrick (Pretest & Posttest)

### Group 4

G4ADV116    Pearl (Pretest & Posttest)  
 G4INT123    Sophie (Pretest & Posttest)  
 G4LINT138   Sean (Pretest & Posttest)

**Note:** 1) The drafts illustrated here are in their original form and are not altered in any way. English names have been assigned in place of the writers' original.  
 2) ADV=advanced writing proficiency level, INT= intermediate writing proficiency level, LINT=low intermediate writing proficiency level

The following is additional information on the number of words typed in both the pretest and posttest as reported in the following table:

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Number of words typed in pretest	144	149	593	345.30	68.155
Number of words typed in posttest	144	148	641	354.08	71.894
Valid N (listwise)	144				

**Group 1****G1ADV7 Carla Posttest****1<sup>st</sup> Draft (254 words)**

Agree

**1. Make the city look clean and organized**

Nowadays, there are too many vendors and carts on the footpath which cause various problems of travel. For example, firstly, it's hard for people to pass through when the carts are on the footpath so if there is no carts people could walk on the footpath easier with no obstruction.

Secondly, having vendors make the path unclean because vendors often drop the scrap and not clean up the floor properly when they leave.

- Third, scrap and food make bad smell to other people if the vendors don't clean their selling area.

**2. protect the accident**

Generally if there scrap or something that is left by vendor there will be a chance to cause an accident for example, if the banana is dropped on the floor and someone step on to the banana he will slip and get hurt.

Another example, some seller set up their cart out to the roadway so car driver cannot drive on the roadway or there will be car clash.

The city will be clean and look prettier.

**3. decrease social problem**

Some bad people might take advantage on the seller by forcing them to pay the illegal rental fee for the selling area.

Also, help to decrease problem of burglar and beggar for example, people who buying things at footpath there will be so crowded at footpath so it is a chance for burglar to steal to people's belongings.

**conclusion**

But the government should be responsible for providing the substitute area.

**G1ADV7 Carla Posttest****3<sup>rd</sup> Draft (334 words)**

Nowadays, if we gazing through the city we will see countless of street vendors and carts almost everywhere on the footpath which it make the city unorganized and unclean. Thus, I do agree with the regulation of banning selling vendors on the footpath with many reasons such as helping to make the city more organized and prettier, protecting the accident and reducing social problems.

Firstly, vendors should be ban because they decrease the scenery of city. For example, having vendors make the path unclean because vendors often drop the scrap and not clean up the floor properly when they leave.

In addition, the scrap and food make bad smell to other people if the vendors do not clean their selling area. Moreover, It is hard for people to pass through when the carts are on the footpath so if there is no carts people could walk on the footpath easier with no obstruction.

Secondly, the accident will be decrease respectively. Generally, if there scrap or something that dropped by vendor there will be a chance to cause an accident, for example, if the banana is dropped on the floor and someone step on to the banana he will slip and get hurt. Another example, some seller set up their cart out to the roadway so car driver cannot drive on the roadway or there will be car clash. Also, The city will be clean and look prettier.

Lastly, the social problem will be reducing. Some bad people might take advantages on the vendors by forcing them to pay the illegal rental fees for the selling area. Furthermore, it will help to reduce problems of burglar and beggar, for example, there will be so crowded with buyer at footpath so it is a chance for burglar to steal to people's belongings.

However, the government should compromise and responsible by providing the substitute area for the vendor so that they will have the area to make selling items and do not cause other the social problems.

**Average Score awarded**

<b>Content</b>	<b>(12.3/20)</b>	<b>Organization</b>	<b>(11.6/20)</b>
Clarity & explicitness	(6.3/10)	Rhetorical organization	(6/10)
Topic development & Supportive examples	(6/10)	Coherence	(5.6/10)
<b>Language use</b>	<b>(30.3/50)</b>		
Sentence structure	(6/10)		
Cohesion	(6.3/10)		
Vocabulary	(6/10)		
Grammar	(5.3/10)		
Mechanics	(6.6/10)		
<b>Overall score</b>	<b>(54.3/90)</b>		
<b>Percentage</b>	<b>(60.3/100)</b>		

**G1INT18 Jamie Posttest**

**1<sup>st</sup> Draft (314 words)**

At the moment there are tremendous selling food on public streets and footpaths which make a lot of troubles to social. Thus there is the announcement of banning selling on public streets that I agree with this new restriction on my community because of five reasons.

Firstly, selling food of vendors on the street effects to traffic jam that obstacle car way running on the way. It make less areas for vehicle than non selling on the

street. In addition, if there are many food stores, there are a large number of people exactly.

Secondly, food garbages of venders and buyers from opening food stores on the streets become dirty streets that convince many rats and insects. These animals cause of diseases in human such as stomachache, nausea and headache.

Thirdly, there are a lot of dusts on the streets that harm people healths. If the sellers make food on the footpaths or the streets, the food will contaminate with dusts. Furthermore, selling on the streets of venders far away from their house which impact to cleaning dishes due to a few water. Thus dishes are unclean that affect to people health.

Fourthly, footpaths was build for communication walking. If there are selling food on the footpaths, people can not use them. They have to use street instead that cause an accident.

Finally, it is too dangerous for customers that eating on the streets because the streets was build for car running. Some days may have an accident. This is the most important reason that everybody have to realize.

In summary, there are a lot of disadvantages from selling food on public streets and footpaths, so the vendors should move their stores from streets and footpaths to right places. For examples, the sellers should open the food stores on their own houses or the places that provided for selling food from allowing of government.

### **G1INT18 Jamie Posttest**

**3<sup>rd</sup> Draft (328 words)**

At the present, there are tremendous selling food on public streets and footpaths that make many troubles to social. Thus, there is the announcement of banning selling on public streets and footpaths that I agree with this new restriction on my community because of five reasons.

Firstly, selling food of venders on the streets and the footpaths effects to traffic jam that obstacle car way running on the way. It makes fewer areas for vehicle than non-selling on the streets and footpaths. In addition, if there are many food stores, there are a large number of people exactly. Since people have to find some food for their hunger.

Secondly, food garbage of venders and buyers from opening food stores on the streets and the footpaths become dirty streets that persuade many rats and insects. These animals cause of diseases in human such as stomachache, nausea and headache.

Thirdly, there are a lot of dust on the streets that harm people health. If the sellers make food on the footpaths or the streets, the food will contaminate with dust. Furthermore, selling on the streets of venders far away from their house which impact to cleaning dishes due to a few water. Thus dishes are unclean that affect to purchase health.

Fourthly, footpaths were building for communication walking. If there is selling food on the footpaths, people cannot use them. They have to use street instead that cause an accident.



Finally, it is too dangerous for customers that eating on the streets because the streets were build for car running. Some days may have an accident. This is the most important reason that everybody have to realize.

In summary, there are many disadvantages from selling food on public streets and footpaths, so the salespersons should move their stores from streets and footpaths to right places. For examples, the vendors should open the food stores on their own houses or the places that provided for selling food from allowing of government.

**Average Score awarded**

<b>Content</b>	<b>(10.3/20)</b>	<b>Organization</b>	<b>(11/20)</b>
Clarity & explicitness	(5.3/10)	Rhetorical organization	(6/10)
Topic development & Supportive examples	(5/10)	Coherence	(5/10)
<b>Language use</b>	<b>(25.6/50)</b>		
Sentence structure	(5.6/10)		
Cohesion	(5.3/10)		
Vocabulary	(4.3/10)		
Grammar	(5.3/10)		
Mechanics	(5/10)		
<b>Overall score</b>	<b>(47/90)</b>		
<b>Percentage</b>	<b>(52.2/100)</b>		

**G1LINT37 Tiana Posttest**

**1<sup>st</sup> Draft (162 words)**

Agree: It will make Bangkok look better because of it can decrease the waste of vendors that if those vendors live near the river, water pollution will follow, make the street clean, people can walk pass the footpaths, decrease traffic pollution.

Ex. My community has many vendor sell food and other items on public streets and footpaths in long time ago. And that make the streets are destroyed and very dirty and muddy. When I walk on the footpaths, the dirty water will touch with my legs. I don't like it very much. Espacially in the morning, many people will go out from their home hurry, selling on the streets will make it difficult to move.

Suggestion : The government should have the plan for help the vendors when they don' t sell anything on the streets such as building the market in new site, Advertising that place to other people know and give some money for help and support them.

**G1LINT37 Tiana Posttest**

**3<sup>rd</sup> Draft (332 words)**

Selling food and all other items on the streets and footpaths of Bangkok is recently been permanently banned. I think I agree with it.

Because it will make Bangkok look better because of it can decrease the waste of vendors that if those vendors live near the river, water pollution will happen

following. Moreover, this restriction can make the street clean so people can walk pass the footpaths. In addition, it can decrease traffic pollution.

For example, my community has many vendor sell food and other items on public streets and footpaths in long time ago and that make the streets are destroyed and very dirty and muddy. When I walk on the footpaths, the dirty water will touch with my legs. I do not like it very much. Especially in the morning, many people will go out from their home hurry, selling on the streets will make it difficult to move.

In the other hand, selling on the streets and footpaths can make people in that community have the market near their home so that they do not go to shopping far away and it save the energy. Moreover, it makes the relation between people in that community. If which community has the market between walk on the street, it will increase the interesting for walking and make us do not feel boring. Despite selling on the street has advantage but it is a few of advantages if compare with disadvantages.

After using this restriction some vendors may disagree with the government and they will argue with the government until destroy the building of community such as, burning the Bo-Bae market. So that I think the government should have the plan for help the vendors when they do not sell anything on the streets. Such as building the market in new site and advertising that place to other people know and should give some money for help and support them so that our community and vendors will get the benefit together.

**Average Score awarded**

<b>Content</b>	<b>(7.3/20)</b>	<b>Organization</b>	<b>(8.6/20)</b>
Clarity & explicitness	(4/10)	Rhetorical organization	(4.6/10)
Topic development & Supportive examples	(3.3/10)	Coherence	(4/10)
<b>Language use</b>	<b>(21/50)</b>		
Sentence structure	(4/10)		
Cohesion	(4/10)		
Vocabulary	(5/10)		
Grammar	(4/10)		
Mechanics	(4/10)		
<b>Overall score</b>	<b>(37/90)</b>		
<b>Percentage</b>	<b>(41.1/100)</b>		

**Group 2**

**G2ADV41 Keisha Posttest**

**1<sup>st</sup> Draft (380 words)**

When I heard the announcement about forbidding the street vendors selling food and all other things, I thought that there should have been this restrict many years ago. I was glad to hear that announcement. Although, I sometimes like to go shopping along the streets, I annoy to walk in the narrow ways more often. Therefore, I agree with the restriction so much. There are not only that reason I don't like the street vendors. Cooking food by the street vendors selling food always releases the smoke to the air and I always see the garbage littered all over the street in that region.

I see a lot of street vendors in downtown. They make the footpaths too narrow for many people to walk pass conveniently. For Example, I once walk on the BTS bridges at the national stadium. There were a lot of street vendors along the two sides of the bridges with a lot of goods spreading over a half of the path ,making a lot of people who passed by walk inconveniently. As if they had to fight one another to walk pass there. That made me nervous.

Not faraway from there, the street under the BTS bridges ,there are many street vendors selling many kinds of food which most of them need to cook there for the delicious food. Because of cooking the food on the street, the smoke from the cooking is released to the atmosphere around. The smoke and odor annoy the pedestrians who walk pass. Besides, the smoke from the cooking comes from the coal, which is the carbon, making the people who inhale it a lot have got the respiratory cancers.

After, the street vendors go back home, the street is usually full of wastes such as plastic bags ,cans and polluted water. All of those wastes come from leaving the useless parts of goods of the sellers and littering the plastic bags, cans, and others after they open their goods or finish eating the food or drinks. A lot of wastes make the street dirty and have the bad smell. The places with all that unsatisfied things are no people want to go. That community will be the place nobody wanted to be.

From all the above, we can see that the street vendors make many bad things for our communities. So, I think it is good to launch this restriction. That will develop our environment to the better way.

### **G2ADV41 Keisha Posttest**

**3<sup>rd</sup> Draft (381 words)**

When I heard the announcement about forbidding the street vendors selling food and all other things, I thought that there should have been this restrict many years ago. I was glad to hear that announcement. Although, I sometimes like to go shopping along the streets, I annoy to walk in the narrow ways more often. Therefore ,I agree with the restriction so much. There are not only that reason I don't like the street vendors. Cooking food by the street vendors selling food always releases the smoke to the air and I always see the garbage littered all over the street in that region.

I have seen a lot of street vendors in downtown. They make the footpaths too narrow for many people to walk pass conveniently. For Example, I once walked on the BTS bridges at the national stadium. There were a lot of street vendors along the two sides of the bridges with a lot of goods spreading over a half of the path ,making a lot of people who passed by walk inconveniently. As if they had to fight one another to walk pass there. That made me nervous.

Not faraway from there, the street under the BTS bridges ,there are many street vendors selling many kinds of food which most of them need to cook there for the delicious food. Because of cooking the food on the street, the smoke from the cooking is released to the atmosphere around. The smoke and odor annoy the pedestrians who walk pass. Besides, the smoke from the cooking comes from the coal, which is the carbon, making the people who inhale it a lot have got the respiratory cancers.

After, the street vendors go back home, the street is usually full of wastes such as plastic bags, cans and polluted water. All of those wastes come from leaving the useless parts of goods of the sellers and littering the plastic bags, cans, and others after they open their goods or finish eating the food or drinks. A lot of wastes make the street dirty and have the bad smell. The places with all that unsatisfied things are no people want to go. That community will be the place nobody wanted to be.

From all the above, we can see that the street vendors make many bad things for our communities. So, I think it is good to launch this restriction. That will develop our environment to the better way.

#### Average Score awarded

<b>Content</b>	<b>(12/20)</b>	<b>Organization</b>	<b>(11/20)</b>
Clarity & explicitness	(6/10)	Rhetorical organization	(5.6/10)
Topic development & Supportive examples	(6/10)	Coherence	(5.2/10)
<b>Language use</b>	<b>(34.6/50)</b>		
Sentence structure	(7/10)		
Cohesion	(6.6/10)		
Vocabulary	(7/10)		
Grammar	(6.6/10)		
Mechanics	(7.3/10)		
<b>Overall score</b>	<b>(57.6/90)</b>		
<b>Percentage</b>	<b>(64/100)</b>		

#### G2INT51 Nina Posttest

1<sup>st</sup> Draft (333 words)

For this new restriction that street vendors selling food and all other items will from now on be permanently banned in my community, I disagree because I think that it maybe make people in my community is not comfortable. Sometimes we want to buy something such as food, we can buy them in many places on public streets and footpaths that it is convenient for us. It make us do not need to buy something at supermarket that it is very far and waste a time.

Moreover, street vendors selling food and all other items will be banned, it make vendors do not have place to sell. Vendors have to find another place to sell. It make them have many expense to find new place. They do not have money to rent place to sell because rent for selling on public streets and footpaths is cheaper than rent for selling in another place such as supermarket or department store.

However, street vendors selling food and all other items will be banned is effected to many people especially vendors. Because vendor need to find new place to sell. They maybe worry about this problem. So some vendors that do not have enough money will stop selling. Besides, selling food and all other items will be banned, maybe decrease commercial in community because a place to sell product decrease from past. Some seller maybe do not have place to sell. As a result, people in Bangkok is not comfortable because it maybe have seller a little. So commercial in Bangkok maybe decrease.



For these reasons, street vendors selling food and all other items will be banned is effected to people in community because we will buy anything is not comfortable. Moreover, vendors have a problem to find another place to sell and seller have a place to sell product decrease. So it make commercial in my community decrease from past and revenue in commercial in Bangkok will decrease too. Accordingly, I think that I disagree with this new restriction that street vendors selling food and all other items will be banned in my community and in Bangkok.

### G2INT51 Nina Posttest

3<sup>rd</sup> Draft (407 words)

For this new restriction that street vendors selling food and all other items will from now on be permanently banned from selling on public streets and footpaths of Bangkok, I disagree because I think that it maybe make people in my community is not comfortable. Sometimes we want to buy something such as food, we can buy them or other things in many places on public streets and footpaths because on public streets and footpaths have many things to sell that it is convenient for us. It make us do not need to buy something at supermarket or shopping mall that it is very far and waste a time. So It make us save time and save money in travelling.

Moreover, selling food and all other items of street vendors will be banned, it make vendors do not have place to sell. Vendors have to find another place to sell. It make them have many expense to find new place. They maybe do not have money to rent place to sell because rent for selling on public streets and footpaths is cheaper than rent for selling in another place such as supermarket or department store. In addition, it make their vendors do not have job. So they do not have revenue to use in daily life. Selling on public streets and footpaths make seller have many places is a choice.

However, street vendors selling food and all other items will be banned is effected to many people especially vendors. Because vendors need to find new place to sell. They maybe worry about this problem. So some vendors that do not have enough money will stop selling. Besides, selling food and all other items will be banned, maybe decrease commercial in community because a place to sell product decrease from past. Some seller maybe do not have place to sell. Moreover, people in Bangkok is not comfortable because it maybe have a little seller. As a result, commercial in Bangkok maybe decrease. It make revenue in commercial decrease too.

In conclusion, street vendors selling food and all other items will be banned is effected to many people in community because we will buy anything is not comfortable. Besides, vendors have a problem to find another place to sell and seller have a place to sell product decrease. So it make commercial in my community decrease from past and revenue in commercial in

Bangkok will decrease too. Accordingly, I think that I disagree with this new restriction that street vendors selling food and all other items will be banned from selling on public streets and footpaths of Bangkok.



## Average Score awarded

<b>Content</b>	<b>(8.6/20)</b>	<b>Organization</b>	<b>(9/20)</b>
Clarity & explicitness	(4.6/10)	Rhetorical organization	(4.6/10)
Topic development & Supportive examples	(4/10)	Coherence	(4/10)
<b>Language use</b>	<b>(25.6/50)</b>		
Sentence structure	(4.3/10)		
Cohesion	(5/10)		
Vocabulary	(5.3/10)		
Grammar	(4.3/10)		
Mechanics	(6.6/10)		
<b>Overall score</b>	<b>(43.3/90)</b>		
<b>Percentage</b>	<b>(48.11/100)</b>		

## G2LINT71 Kyle Posttest

1<sup>st</sup> Draft (342 words)

Thailand might be country which you can find something to eat or shop at anytime ,you want . if you are standing on footpaths . thailand footpath sometime look a like little market which sell everything .

However, vendor make a mess in footpath and city . Some vendor sell/ lay their goods on the small footpath that make the footpath smaller and harder to walk through.

As a result of prohibition by governor. Sincerely , I want my home town,Bangkok, to be a clean town.I don't like anything to dirt or make my home town mess. It doesn't mean all of vendors dirt the footpath but some of them do. I have three reasons to support my point.there are about pollution ,traffic and travelling industry.

First ,vendors on the street and footpath make a sight-pollution. This pollution make city mess and not beautiful .the neat city must have a clean street and footpath .For example Singapore is city that have no vendor on the footpath and his city is very clean.

Second ,vendors on the footpath make street smaller which cause the traffic problem to bkk. The is a reason why bkk governor want to remove vendors out from Bou-Bea market.

The last reason,third, this vendors is a draw back to improve travelling of city. The governor want to promote city to be city of life and clean.

So if the governor can remove the vendors from the footpath .It might help the travelling industry to be increasing.

I think vendors should sell their goods in the right place and right time,and ,exactly,the right place is not footpath.so my answer for this question is I'm agree to the restriction..but not at all the governor should give the fair compensation to the vendors and help them to find the place to sell their goods which not too expensive and too far.

Conclusion, The vendors are making city messy, traffic jam and draw back of travelling industry. So I agree to the governor to remove the vendors from the footpath with the right and smooth method

### G2LINT71 Kyle Posttest

3<sup>rd</sup> Draft (356 words)

Thailand might be a country which you can find something to eat or to shop at anytime. If you are standing on Thailand footpaths, Thailand footpaths sometimes look like little markets which sell everything on the street.

However, vendors make a mess in footpaths and city. Some vendors sell and lay their goods on the small street that make the footpath smaller and harder to walk through.

As a result of prohibition by the governor, sincerely, I want my home town, Bangkok, to be a clean town. I don't like anything that dirties or makes my home town messy. I am not mean all of the vendors dirt the footpath but some of them do. I have three reasons to support my point. They are about pollution, traffic and travelling industry.

First, vendors on the streets or footpaths make a sight-pollution. This pollution makes city messy and not beautiful. The neat city must have clean streets and footpaths, namely Singapore. Singapore is a city that has no vendors on the footpaths and their city is very clean.

Second, vendors on the footpath make the street smaller which causes the traffic problem in Bangkok. This is a reason why the Bangkok governor wants to remove vendors out from the market.

The last reason, third, these vendors are a drawback to improve travelling in the city. The governor wants to promote the city to be a city of life and clean.

So if the governor can remove the vendors from the footpath, it might help the travelling industry value increase.

By the way, I think vendors should sell their goods in the right place and right time, and, exactly, the right place is not the footpath. So my answer for this question is I agree to the restriction, but not at all. The governor should give the fair and reasonable compensation to the vendors and help them to find the right place to sell their goods which is not too expensive and too far from their home.

Conclusion, I agree to the governor to remove the vendors from the footpath with the right and smooth method because the vendors are making city messy, traffic jam and draw back of travelling industry.

Average Score awarded			
<b>Content</b>	<b>(7.6/20)</b>	<b>Organization</b>	<b>(9.6/20)</b>
Clarity & explicitness	(4.3/10)	Rhetorical organization	(4.6/10)
Topic development & Supportive examples	(3.3/10)	Coherence	(5/10)
<b>Language use</b>	<b>(20.6/50)</b>		
Sentence structure	(4.6/10)		
Cohesion	(4/10)		
Vocabulary	(4.6/10)		
Grammar	(4/10)		
Mechanics	(3.3/10)		
<b>Overall score</b>	<b>(38/90)</b>		
<b>Percentage</b>	<b>(42.2/100)</b>		

### Group 3

#### G3ADV77 Megan Pretest

(374 words)

Building a shopping center which includes place for shopping, movie theatres and a bowling alley is an interesting idea. Department store is a place where people usually have a good time with families and friends. I support this plan for my community because of many reasons.

Firstly, it is appropriate to most people nowadays, especially for teenagers who usually love spending time with their friends at weekend or after school. It will be better to have a department store near your community so that it is more comfortable and more safe for teenagers when they are on their way home. Although, it may be not a good idea to let teenagers do this activity, but their parents can't avoid this problem. Instead of being worried or serious, they had better accept this and try to find good solutions about safety of their children. Besides, it is an ordinary habit of most youngsters, every parent used to be teenagers, so they should understand how important to have a social life with friends.

Secondly, having an entertainment center is a symbol of developed community. As you can see, Siam center is a gathering place for most people. Owing to being a developed community, many attractions or utilities, such as hospital, department stores, BTS and subtrain, will be built near your house. You don't have to waste much time or money in order to travel to other places. When you need anything, you just take a bus, BTS, MRT train or walk to your destinations within half an hour.

Lastly, it is a good opportunity to have a good holiday with families at weekend, especially with some parents who don't have much time because of their work. Now they can enjoy their near perfect shopping center which has everything without spending much time to travel. This is one of the best way to keep a good relationships in families.

In conclusion, being a developed community, safety for teenagers when having a good time with friends at a night time and places for every families to go shopping are the advantages of building this large shopping center with movie

theatres and a bowling alley in your neighborhood. from all of the reasons above,I absolutely agree with this plan.

<b>Average Score awarded</b>			
<b>Content</b>	<b>(12.6/20)</b>	<b>Organization</b>	<b>(13.3/20)</b>
Clarity & explicitness	(6.3/10)	Rhetorical organization	(6.3/10)
Topic development & Supportive examples	(6.3/10)	Coherence	(7/10)
<b>Language use</b>	<b>(35.3/50)</b>		
Sentence structure	(7/10)		
Cohesion	(7.3/10)		
Vocabulary	(6.3/10)		
Grammar	(7.3/10)		
Mechanics	(7.3/10)		
<b>Overall score</b>	<b>(61.2/90)</b>		
<b>Percentage</b>	<b>(68/100)</b>		

### G3ADV77 Megan Posttest

(375 words)

I disagree with this new restriction, which is about banning the vendors who sell food and some other stuffs along the public street. In my opinion, it is not a good solution because it may be a big trouble for many people in the communities. This restriction does help the communities to be well organized and cleaner, but other people will get a lot of problem from this solution. All of These are the reasons why I disagree with this restriction.

Firstly, most vendors who sell food and all other items do not have other occupations. They do a living by selling things along the streets. Therefore, if the government confines them from selling on public streets, they will have no place to sell and no earnings. Besides, it is rather difficult for them to find other jobs because most of them are not well educated and have no opportunity to get a high knowledge like somebody else.

Secondly, the consequence of the people-have-no-earnings problem is the low-quality-of-life problem. Because they have no earnings so they cannot afford what they or their families want. The government should not disregard people's quality of life. It is essential to think of the people's living more than the eyesight of the community.

Lastly, according to all of the above problems, the most worried problem is criminal, which is the prior social problem that must be concerned about after the restriction is stated and used in the public. There are many people who will get trouble from this project, and if they cannot find out a way to solve their problem, they may try doing something else such as stealing things or breaking in others' house, which are the immoral and decadent behaviors.

In summary, poverty of people in the community, low quality of life and criminal are the most implicated problem that will follow by this restriction. There are many solutions to improve the vision of the community and solve the untidy problem along the street. The government had better find another method, which



does not affect the people's living. But if the government keeps using this plan, several problems will definitely take place. Someday it may be a big problem for everyone, not only for the government.

**Average Score awarded**

<b>Content</b>	<b>(13.3/20)</b>	<b>Organization</b>	<b>(13.6/20)</b>
Clarity & explicitness	(6.6/10)	Rhetorical organization	(7/10)
Topic development & Supportive examples	(6.6/10)	Coherence	(6.6/10)
<b>Language use</b>	<b>(34.6/50)</b>		
Sentence structure	(7/10)		
Cohesion	(6/10)		
Vocabulary	(7.3/10)		
Grammar	(7/10)		
Mechanics	(7.3/10)		
<b>Overall score</b>	<b>(61.6/90)</b>		
<b>Percentage</b>	<b>(68.4/100)</b>		

**G3INT92 Wanda Pretest**

**(391 words)**

On present day, have many companies that try to make the perfect profit. Including the business of the mall. And they want to have a relation with everybody in everywhere so their aim are building their mall in anywhere that possible. When people who stay around some place that have the announcement about building a large mall or shopping center will have the different opinions. And I will give a few of my opinion.

The first, the most important thing that I think is when shopping center is established, people will have the jobs. That mean less people who can't get the revenue. The government don't have to prepare fund to help workless humans. Moreover the government can bring this fund to develop other things in country or to solve the problems that more important then this problem such as shortage of food, difficiency of water or prevent the contry from war. When have the large shopping center with movie theatres and a bowling alley right in country, It will improve human's life. And it can distroy the thinking that live in the country out of date.

The second opinion that when has the large mall established, people will have the news technology that he or she has never known before such as the large theatre, the bowling alley right. That maybe the basic thing is built. There will have the other inovations or technologies come in next time. Inaddition, the new technology can give the modern of learning. That mean the people may have a better of study, and the good study will give the good life to each people, and the good life will give the happiness to the people. When everybody has happiness, the country will be the paradise that any people in anywhere want to stay.

The last opinion is tourism. From the second reason, if the country become the paradise that wonderful, people in anywhere will want to visit. And the visitors must use money or use the service in our country that give the advantages to country such as the world will know about our country, country can get a lot of money to make some good things for people. That is very nice, I think.



Following the third reason or opinion that I give show my thought. I support this plan for my community.

**Average Score awarded**

<b>Content</b>	<b>(10/20)</b>	<b>Organization</b>	<b>(10/20)</b>
Clarity & explicitness	(5.3/10)	Rhetorical organization	(5.3/10)
Topic development & Supportive examples	(4.6/10)	Coherence	(4.6/10)
<b>Language use</b>	<b>(25/50)</b>		
Sentence structure	(4.6/10)		
Cohesion	(4.3/10)		
Vocabulary	(6/10)		
Grammar	(5/10)		
Mechanics	(5/10)		
<b>Overall score</b>	<b>(45/90)</b>		
<b>Percentage</b>	<b>(50/100)</b>		

**G3INT92 Wanda Posttest**

**(366 words)**

If we have traveled in somewhere that famous place such as Phuket, We would have seen many vendors. Their activities are attraction of place because some countries don't have people who live by selling food or items on street. In the same time they can make a bad vision for example the rubbish on the street. If have announcement to bane it, I will have three opinion to analysis.

The first opinion, most of people selling food and all other items on street is poor. They have a few ways to choose their work. To be a vendor is look the best way their can choose. Because it don't spend a lot of money to invest. It's the first reason to choose. If the government bane this job, they can waste the good life.

The second opinion, the jobless people can become the robber because they cannot choose. The government has to spend more budgets to prevent the population. More crime will happen in country. The police officer will work more hard. This can make the bad looking for our custom or our country. People in other where will come to travel at less.

The last opinion, many of vendors can be unique in some countries. It is attracting traveler well. If do not have vendors, our country might lose the money that from foreigner. In addition, I think we can lose some custom that value for us such as Thai lifestyle because in the past we sold by selling food and other items on street. Now a day the governments will bane it. Thai people may use the Europe or American tradition to sell thing. Tradition of the other country can make Thai people different e.g., Thai people can become people who do not friendly, because they want to get more money every time.

I think I do not agree with the announcement because the three opinion above. If the governments want to organize the country, they can avoid this way. They can announce other policies such as have the limit or fix area to sell. I think have many way to solve this problem and do not make a lot of affect with people.

## Average Score awarded

Content	(9.6/20)	Organization	(10/20)
Clarity & explicitness	(5/10)	Rhetorical organization	(5.6/10)
Topic development & Supportive examples	(4.6/10)	Coherence	(4.3/10)
Language use	(23.6/50)		
Sentence structure	(4.6/10)		
Cohesion	(4.6/10)		
Vocabulary	(4.3/10)		
Grammar	(5/10)		
Mechanics	(5/10)		
Overall score	(43.3/90)		
Percentage	(48.1/100)		

## G3LINT108 Patrick Pretest

(342 words)

The shopping center with movie theaters and a bowling that is good way to relax and it will be make activity for community but all so when we can build its we should to make sure the Shopping center it will be make pollution in community if the shopping center build up this times the pollution increase we must to stop it. So I will oppose it. Its have a lot of problem .

The firstly if, I have the shopping center it will be make pollution for community by noise, air pollution. The pollution of noise is machine working all day. It have to work 3-4 years or Air pollution when the machine working and release carbon dioxide. Carbon dioxide its make a cancer so You can see that impact from pollution. anyway you will be found trouble about water when they build it they have jung in work may be they drop in to the water. The community take it to use in town .

The secondly, this town have a good view if we have the shopping center . it will be cover the view ,when tourists come to they we can see anything .They can see the concrete forest anywhere in water have jung in the air have pollution in town it have loud noise is to bad that is we don't want to happen

The thirdly, if we have a big shopping center people will going to there and shopping in there so we can see the local shop will be close because they can't fight for big shop. Employees will be loss the job so the crime will be increasing because they need the money too pay to life.

In conclusion we will see a lot of problem from shopping center so we should oppose it to build the shopping center and anything to destroy community or neighborhood. the impact of shopping center it have trouble more than good thing for community. We will know about it if you want the civilization you must to trade with a lot of trouble

## Average Score awarded

<b>Content</b>	<b>(6.3/20)</b>	<b>Organization</b>	<b>(9.3/20)</b>
Clarity & explicitness	(3.3/10)	Rhetorical organization	(5/10)
Topic development & Supportive examples	(3/10)	Coherence	(4.3/10)
<b>Language use</b>	<b>(11.3/50)</b>		
Sentence structure	(3/10)		
Cohesion	(2.3/10)		
Vocabulary	(2/10)		
Grammar	(2/10)		
Mechanics	(2/10)		
<b>Overall score</b>	<b>(27/90)</b>		
<b>Percentage</b>	<b>(30/100)</b>		

## G3LINT108 Patrick Posttest

(316 words)

In nowadays, vendors on street have over shop until people cannot walk on footpaths. Sometime people have to walk on streets it to danger for them and drivers. i agree with restriction because I found this case everyday when I go home , sukumvit 4 I found tourist walking on street it make me boring because I must to careful of them it depend on vendors on footpaths another it make traffic jam in streets

Firstly, if vendors selling on public streets and footpaths it will be concern people walk on footpaths if they have not place for walk they will walk in streets it dangerous another concern with drivers it easy to contain accident .

Secondly, when visitor come to Bangkok they found rubbish everywhere on streets or footpaths .It most come from vendors. When they close the shop it have rubbish as of food and then they will drop it to streets or footpaths it so dirty that concern with image of Bangkok so it disturb tourism they will see Bangkok is dirty city and they don't want come again .it impact with economic of Thailand .

Thirdly, in secondly you will see a dirty of rubbish then you will found a bad smell and rat run away on footpath it so disgusting when those sees.

The tourist must to walk away and found rat. it's to bad if that it happen.

In conclusion, tourist come to Thailand it good to make money by tourism so we must to make a nice place for take they to come so we should make image city of clean and safety. Then we should clear streets vendors nobody want to walk on streets or found the rat run away or see rubbish on footpath and bad smell all of them we can change it for attractive tourist come to Thailand again and see a beautiful place .

## Average Score awarded

<b>Content</b>	<b>(7/20)</b>	<b>Organization</b>	<b>(10.3/20)</b>
Clarity & explicitness	(4/10)	Rhetorical organization	(5/10)
Topic development & Supportive examples	(3/10)	Coherence	(5.6/10)
<b>Language use</b>	<b>(21.6/50)</b>		
Sentence structure	(3.3/10)		
Cohesion	(4/10)		
Vocabulary	(4/10)		
Grammar	(4/10)		
Mechanics	(5/10)		
<b>Overall score</b>	<b>(38.9/90)</b>		
<b>Percentage</b>	<b>(43.2/100)</b>		

## Group 4

## G4ADV116 Pearl Pretest

(320 words)

There are many advantages and disadvantages of living near shopping center. Some people prefer to live near shopping center but the others not. In my point of view, I don't want to live near shopping center because of traffic congestion, pollution, and busy life.

People who live near shopping center will meet traffic congestion problem because many people come to shopping in this shopping center. Traffic congestion can cause many problem incurring. Initially, they have to use more time to drive a car. For example, when they go to work, they must go to work early in order to arrive the office on time. It means they spend time in the car more than usual so they lose the time to do something else. In addition, they have to use more fuel because of traffic congestion. Therefore, they have more expenditure. Finally, traffic congestion make them tense when they drive a car for a long time. Stress is bad for their healthy.

Moreover, pollution has become an unavoidable result for shopping center. This produces some harmful effects, especially to people who live near shopping center. Regardless of water pollution, shopping center release refuse water. The refuse water has foul smell. Furthermore, air pollution from traffic congestion and air conditioner can disturb them too. These pollution that I mention reduce quality of their life.(harmful their healthy)

Finally, their life are full of bustle because of the crowds. Both children and adults are induced to go to shopping center more than usual because they can go there easily. So they spend a lot of time and money for shopping. In spite of the fact that time and maney are nesscessary for their life, they use it furtilely.

In conclusion, although shopping center make their life easily, it has many negative aspects that I mention above. I believe that we can live in happiness without shopping center. Anyway, it depends on your decision.

## Average Score awarded

<b>Content</b>	<b>(11/20)</b>	<b>Organization</b>	<b>(12/20)</b>
Clarity & explicitness	(6/10)	Rhetorical organization	(6.3/10)
Topic development & Supportive examples	(5/10)	Coherence	(6/10)
<b>Language use</b>	<b>(33/50)</b>		
Sentence structure	(7/10)		
Cohesion	(7/10)		
Vocabulary	(7/10)		
Grammar	(6/10)		
Mechanics	(6/10)		
<b>Overall score</b>	<b>(56/90)</b>		
<b>Percentage</b>	<b>(62.2/100)</b>		

## G4ADV116 Pearl Posttest

(366 words)

Selling food and all other items on public streets and footpaths of Bangkok is not a new problem for the city. It has been discussed for many years by the government. Finally, they have recently found a solution. Making money this way will be permanently banned. In my opinion, I completely agree with this new restriction for three reasons: less pollution, less traffic jams and more organization.

No one wants to have a complicated community. The more the street vendors are, the more pollution they make. There will be no more peace in your community. People will chat, make a quarrel and do other things that bring all kinds of pollution to you. The street vendors will also make a great deal of garbage because the footpaths are not their assets. It may not be their business to keep the streets clean. Persuading them to realize the trouble may be more difficult than banning them.

Secondly, the footpath should be a smooth and wide path for people to walk on easily. If there are many interesting items along the foothpaths, people will stop walking to take a look on them. Although there is only one person stop, others cannot continue walking. Moreover, if the street is narrow, selling on the foothpath will not allow some vehicles like motor cycles to go through. This will lead to a confusing traffic jam.

Where could I buy some good items? If a foreigner ask you this question, what would you tell them? The answer should not be "let's go to the footpaths". The streets or footpaths are not a market. If people want to sell or buy stuffs, they will go to a market. The restriction will organize the right things to the right places. It is worth selling in the market even though selling vendors may have to pay for the space in a market. Selling on the streets is risky because they do not know when the police will arrest them.

In conclusion, I strongly agree with the new restriction. The government should use it as soon as they could. So, I will have a better place to live in and a nicer scenery to look at.



## Average Score awarded

<b>Content</b>	<b>(10.6/20)</b>	<b>Organization</b>	<b>(11.3/20)</b>
Clarity & explicitness	(5.6/10)	Rhetorical organization	(5.6/10)
Topic development & Supportive examples	(5/10)	Coherence	(5.6/10)
<b>Language use</b>	<b>(31/50)</b>		
Sentence structure	(6.3/10)		
Cohesion	(6.3/10)		
Vocabulary	(6.6/10)		
Grammar	(5.6/10)		
Mechanics	(6/10)		
<b>Overall score</b>	<b>(52.9/90)</b>		
<b>Percentage</b>	<b>(58.7/100)</b>		

## G4INT123 Sophie Pretest

(389 words)

I agree with the company's plan that it wants to construct a shopping center with movie theatres and bowling alley in my neighborhood because I think that it will make us more convenient to purchase something which we need in our daily lives than a market. In my opinion, the shopping center must be designed to divide the same kind of merchandises in the same sections, thus you can find them easily. For example, the toys will be one section and clothes will be another section, or maybe clothes can separate into women's clothes section, men's clothes section, and kids' clothes section. On the other hand, at the market, you need to know where the specialized shop is, but if you don't, it will be very complicated to find the thing that you want. Next, you can buy something that you need every time you want especially when you need it in a hurry because the shopping center will open everyday and everynight for 24 hours. It isn't closed even the special day like the shops which usually are up to the owners. In addition, the shopping center has a lot of various goods in many kind and brands. You can choose the one you like most. For example, the soap is produced by many companies such as LUX, Be Nice, Protex, Clinic, Pond, etc. In the shop like seven-eleven, you will realise that it doesn't have all brands of this product, however, you can find them all in the shopping center. Another reason is entertainment. You can go to see the movies or play the bowling with your friends and your family in order to have fun and feel relaxed, but you don't have to go too far such as Siam Square, MBK, etc. You won't have to pay money for traveling to other places. You can walk or ride a bicycle to the center. Finally, because of this center, many people around this area will come, so your neighborhood will become popular and the risk of criminals like thieves will be declined because there are a lot of people in this area and there is the light from the shopping center, so the footpath won't be dark. Maybe you can walk home alone without any dangers, and your property such as houses, and cars, etc. will safe. According to all the reasons I give, that's why I accord with this company's scheme.

## Average Score awarded

<b>Content</b>	<b>(11.6/20)</b>	<b>Organization</b>	<b>(8.6/20)</b>
Clarity & explicitness	(6/10)	Rhetorical organization	(4/10)
Topic development & Supportive examples	(5.6/10)	Coherence	(4.6/10)
<b>Language use</b>	<b>(29.6/50)</b>		
Sentence structure	(6/10)		
Cohesion	(6/10)		
Vocabulary	(6/10)		
Grammar	(6.6/10)		
Mechanics	(5/10)		
<b>Overall score</b>	<b>(50/90)</b>		
<b>Percentage</b>	<b>(55.5/100)</b>		

## G4INT123 Sophie Posttest

(425 words)

I agree with this restriction, even though the street vendors must have a problem with this regulation but I think that the government should solve this problem by allocating some areas for these merchants to sell their products in order to substitute footpaths. First, I think that if the street vendors still sell things on footpaths, people who walk along the footpaths will be difficult to walk past them. For example, the sellers who vend products such as clothes, bags, and necklaces, etc. will try to show their products by items in order to attract the walkers and sometimes they use the cloth that are expanded to place their goods on, so the walkers will have a little space to walk. And some street vendors who cook food like noodles have to use some equipments to cook, so they will need lots of space but if we have this regulation, this problem will absolutely disappear. Next, when the street vendors sell their products especially ones who sell food, they usually make the footpaths dirty because they throw their wastes, or release their used water on the footpaths, and maybe their food fall down on the footpaths accidentally. Moreover, they usually don't clean them up because they think that cleaning should be the duties of other people whom the metropolitan employs in order to make the city clean. These mean that the footpaths are very dirty and maybe have an awful smell, so people who walk on footpaths have to face this problem. They may get sick or have a headache because of this smell. And they can't walk easily because of wastes. Finally, Street vending doesn't make the city look beautiful. When the foreigners come to Thailand, their plane must board at the airport that is near Bangkok, Suwannaphoom at first. They usually go to our important places in Bangkok such as temples, and shopping centers and many foreigners prefer walking along the footpaths or taking some cars along the street. And if they see the merchants sell their things and the footpaths that have a lot of wastes on, they will think that Thailand is dirty and don't have a strict restriction in law, so they may not impress in Thailand and they won't come back again. Then, Thailand will lost some money which should receive from the foreigners traveling in Thailand. Also for people who live in Bangkok, many of them expect for the beautiful scenery in the city and the convenience in order to make them feel good when they walk along the footpaths.

## Average Score awarded

<b>Content</b>	<b>(15.3/20)</b>	<b>Organization</b>	<b>(10.3/20)</b>
Clarity & explicitness	(7.3/10)	Rhetorical organization	(4/10)
Topic development & Supportive examples	(8/10)	Coherence	(6.3/10)
<b>Language use</b>	<b>(37.6/50)</b>		
Sentence structure	(7.6/10)		
Cohesion	(7.3/10)		
Vocabulary	(8/10)		
Grammar	(7/10)		
Mechanics	(7.6/10)		
<b>Overall score</b>	<b>(63.3/90)</b>		
<b>Percentage</b>	<b>(70.3/100)</b>		

G4LINT138 Sean Pretest

(235 words)

I will support this plan with this following reason.

The first reason that I will support is I think it make relaxing to people in my neighborhood. Sometime, you feel bored with your jobs. Your boss always complain you maybe it isn't your wrong. You so serious in life, hence I think entertainment is the good alternative for your relaxing. Certainly, you won't go to theatres everyday or every week. On the other hand, you just go there a time per month. This way can build your power to face with your jobs happily.

Second reason is movie and a bowling make good relation in families. Your family go shopping and watch movie for weekend together. It make you funny and happily. Moreover, you will talk your children and learn in their thinking and attitude by movie. You will know their attitude which you won't believe that it has inside them.

Then, the third reason, a shopping center can attract many people from other country to go to my community so we have an occupation for more revenue. Such as we are become an employee in this company, we can build a restaurant for other people.

The attracting from a large shopping center make growth and development into community so many chances for your revenue will come to you too. If you can change these chances become income, you will get benefit from benefit.

## Average Score awarded

<b>Content</b>	<b>(8.6/20)</b>	<b>Organization</b>	<b>(9/20)</b>
Clarity & explicitness	(4.6/10)	Rhetorical organization	(5/10)
Topic development & Supportive examples	(4/10)	Coherence	(4/10)
<b>Language use</b>	<b>(21.3/50)</b>		
Sentence structure	(4.6/10)		
Cohesion	(4.3/10)		
Vocabulary	(4/10)		
Grammar	(4/10)		
Mechanics	(4.3/10)		
<b>Overall score</b>	<b>(39/90)</b>		
<b>Percentage</b>	<b>(43.3/100)</b>		

## G4LINT138 Sean Posttest

(180 words)

I disagree with this restriction.

First reason, selling on public streets is the way to have income for street vendors who have low graduate. They earn opportunity in a job for other income to support their family. On the contrary, if this restriction launch in community, vendors would be less on revenue. Someone will not have enough income for their family. Then social problem will be occur follow up in community.

Second, new socials were occur such as night market and they attract foreigner come to shopping and take money from international to Bangkok. It effect much more travelling in bangkok. Furthermore, new market make more negotiate for seller in products.

Third, selling on footpath take easy for customer to buy the product look like basic delivery service. If it has not these vendors on streets when you hungry, you will always walk in restaurant that have only high price menu. Moreover, you will spend more money for the same product that differentiate available on department store and on street. Products will cheaper when they are on the vendors hand.

## Average Score awarded

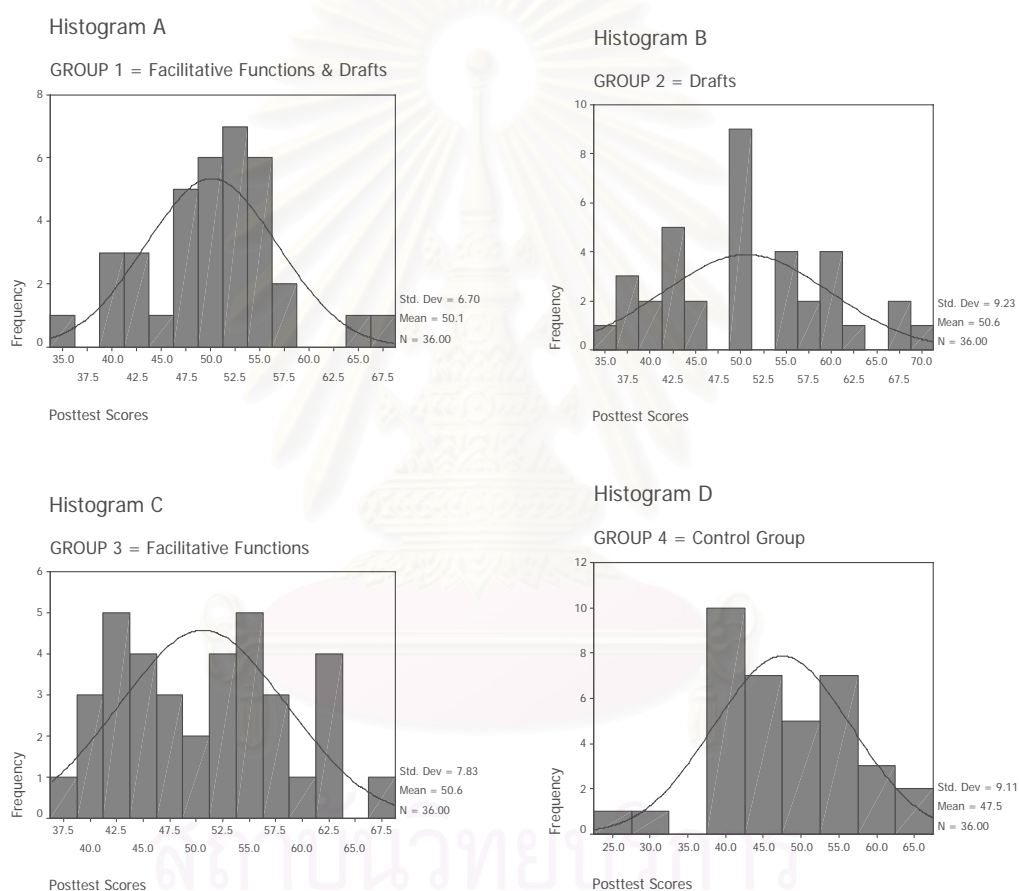
<b>Content</b>	<b>(7/20)</b>	<b>Organization</b>	<b>(8.6/20)</b>
Clarity & explicitness	(3.6/10)	Rhetorical organization	(4/10)
Topic development & Supportive examples	(3.3/10)	Coherence	(4.6/10)
<b>Language use</b>	<b>(22/50)</b>		
Sentence structure	(4/10)		
Cohesion	(5/10)		
Vocabulary	(4/10)		
Grammar	(4/10)		
Mechanics	(5/10)		
<b>Overall score</b>	<b>(37.6/90)</b>		
<b>Percentage</b>	<b>(41.7/100)</b>		

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## Appendix Z: Details of assumption tests prior to the two-way ANOVA

The assumption that the values in each cell of the design are normally distributed was tested first by visually inspecting histograms, normal probability plots and stem-and-leaf plots then by applying the Shapiro-Wilks test to confirm normal distribution. From visual inspection of the four groups in Figure 1, the histograms show that the groups are heterogeneous due to a high standard deviation for all groups and that the ranges of some groups are not symmetrical.

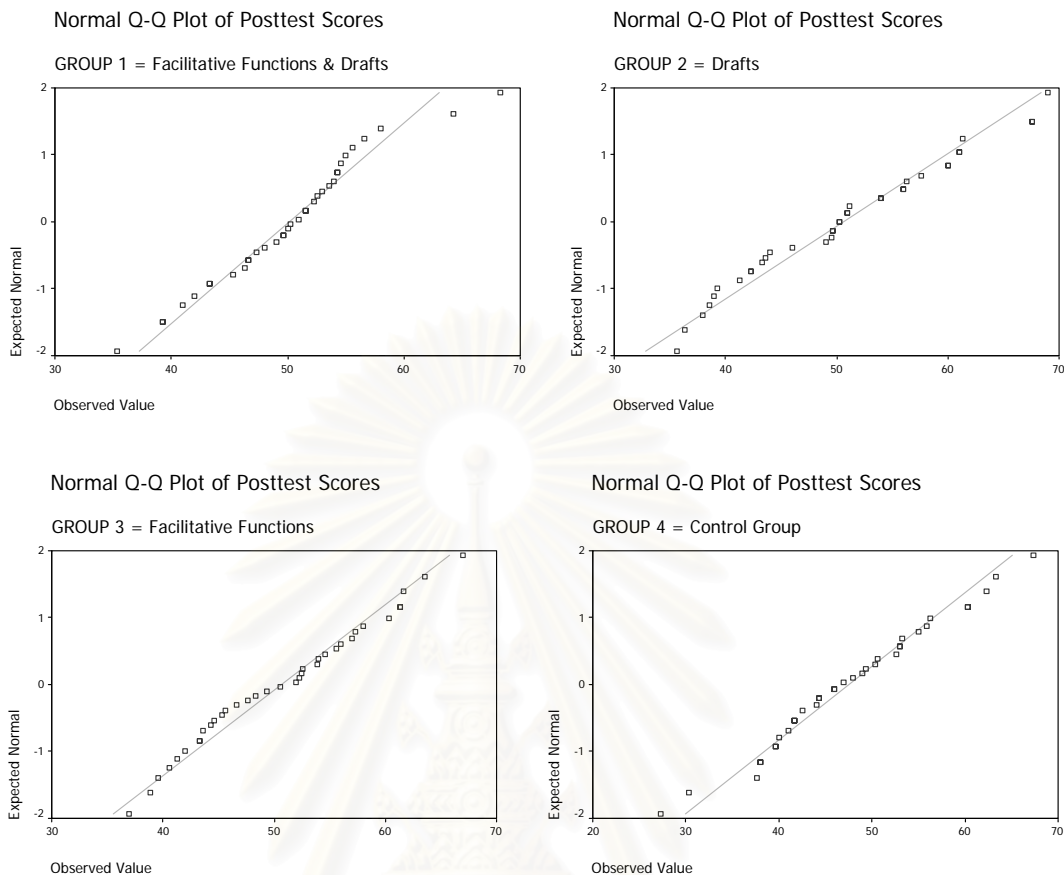
**Figure 1 Histograms for all Posttest Groups**



However, from the normal probability plots in Figure 2, most of the data points fall near the diagonal normal line. The pattern of dots which lie close to the diagonal line of expected values indicates a normally distributed data (เพ็ญแข ศิริวรรณ ๒๕๔๖/Penkhae Siriwan, 2003). Two data points, probable outliers in Group1 (the Facilitative Functions and Drafts test group), fall far to the upper right of the diagonal normal line. Those two examinees are scored dramatically higher on the task than the others. The data for these two examinees are double-checked by having a look at the stem-and-leaf plots.



**Figure 2 Normal Probability Plots for All Posttest Groups**



The stem and leaf plot (Figure 3) for the “with facilitative functions and drafts” group gives some additional insight, reporting no extreme cases in the facilitative functions and drafts test condition.

**Figure 3 Stem-and-Leaf Plot for Posttest Group 1 Facilitative Function and Drafts**

Posttest Scores Stem-and-Leaf Plot for GROUP 1 = Facilitative Functions & Drafts

Frequency	Stem & Leaf
3.00	3 . 599
4.00	4 . 1233
9.00	4 . 566678999
14.00	5 . 00111122334444
4.00	5 . 5568
1.00	6 . 4
1.00	6 . 5

Stem width: 10.0  
 Each leaf: 1 case(s)

To confirm normality of groups statistically, the Kolmogorov-Smirnov (K-S) test illustrated in Table 1 shows no departure from normality for the “with Facilitative Functions and Drafts” Test Group,  $K-S(36) = 0.85, p = .200$ . If the significance level is

greater than .05, then normality is assumed (Coakes & Steed, 2001). The other test conditions are also normally distributed according to the K-S test, the “with Drafts” condition  $K-S(25) = .097, p = .200$ , “with Facilitative Functions”  $K-S(25) = .101, p = .200$  and control group  $K-S(25) = .083, p = .200$ . The Shapiro-Wilks statistics, which is the appropriate test for normality for groups with less than 50 subjects, are consistent for all the test conditions. Both tests of normality, with significance values of more than .05, indicate that the scores of the four groups are normally distributed.

**Table 1 Normality of Posttest Groups**

GROUP		Tests of Normality					
		Kolmogorov-Smirnov(a)			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Posttest Scores	Facilitative Functions & Drafts	.085	36	.200(*)	.977	36	.647
	Drafts	.097	36	.200(*)	.964	36	.280
	Facilitative Functions	.101	36	.200(*)	.972	36	.484
	Control Group	.083	36	.200(*)	.984	36	.859

\* This is a lower bound of the true significance.

a Lilliefors Significance Correction

The other assumption to be met is the homogeneity assumption that assumes the variances in each of the cells are not different from each other. This was tested with the Levene statistical Test of Homogeneity presented in Table 2.

**Table 2 Homogeneity of Variance Test on Posttest Groups**  
Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Posttest Scores	Based on Mean	2.202	3	140	.091
	Based on Median	2.121	3	140	.100
	Based on Median & with adjusted df	2.121	3	131.055	.101
	Based on trimmed mean	2.180	3	140	.093

The null hypothesis for the Levene test is that the variances are homogeneous. Thus, if the statistic is not significant at the .05 level then the variances are homogeneous. However, if the statistic is significant at  $p < .05$ , then the variances are not homogeneous. In this case the variances (based on the mean) are homogeneous,  $Levene(3, 140) = 2.202, p = .091$ . Consequently, the two-way analysis of variance was performed since neither assumption had been violated.

**VITAE**

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