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The Effects of Pre-Writing Strategy Training Guided by Computer-Based Procedural
Facilitation on ESL Students' Strategy Use, Writing Quantity, and Writing Quality

by

Darunee Dujsik

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
Department of Secondary Education
College of Education
and
Department of World Languages
College of Arts and Sciences
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knowledge-transforming, writing expertise, writing strategy, pre-task planning

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Dedication

In loving memory of my father
who would have been so proud of my accomplishments

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The Effects of Pre-writing Strategy Training Guided by Computer-based Procedural Facilitation on ESL Students' Strategy Use, Writing Quantity, and Writing Quality

Darunee Dujsik

ABSTRACT

Pre-writing strategies are conscious thoughts, actions, or behaviors used by writers when they plan before writing. Research in second language writing suggests that specific writing strategies related to writing purposes, audience, brainstorming, and organizing ideas are teachable and have a potential to improve the quantity and quality of writing produced by English as second language (ESL) learners. This study investigated the effects of computer-based pre-writing strategy training guided by procedural facilitation (Bereiter & Scardamalia, 1987) on intermediate ESL students' writing strategy use, writing quantity, and writing quality.

A sequential mixed methods design was utilized with an initial quasi-experimental phase followed by semi-structured interviews. Forty-one participants from four intact intermediate-writing classes in an intensive English program participated in the quasi-experimental phase of the study. The classes were randomly assigned into two control and two experimental groups. The instructional modules for the control groups included writing instruction related to paragraph writing, essay writing, and opinion essays whereas the training modules for the experimental groups consisted of pre-writing strategies related to writing purposes, audience, and idea generation and organization. In

addition, the experimental groups were trained to generate and organize ideas using Inspiration 6, an idea graphic organizer software program. The participants' writing performances and uses of pre-writing strategies prior to and after the training were analyzed. In addition, six semi-structured interviews conducted shortly after the post-test helped to illuminate the quantitative results.

Results demonstrate a significant training impact on ESL students' pre-writing strategy use but fail to detect significant effects on the students' writing quantity and writing quality; however, a trend of improvement regarding the writing quality variables was detected among the strategy-trained students. Furthermore, the qualitative analysis revealed some similarities and differences of less experienced and experienced writers' writing processes and strategies. Overall, the findings suggest the complex interplay among the factors influencing student writing development including writing strategy use, writing processes, writing tasks, task conditions, their past writing experience, and their language proficiency.

Chapter 1 -- Introduction

Introduction

Writing is recognized as a complex socio-cognitive task which requires conscious effort and practice through training or schooling. Writing in second language (SL) is viewed as equally complex, if not more, as it poses further challenges to learners, especially children and inexperienced writers, due to competing attention demands such as using the SL writing system, deciding on content knowledge relevant to a writing topic, selecting proper vocabulary and grammar to form sentences, organizing sentences into a paragraph and paragraphs into an essay with appropriate organizational patterns, considering the writing purpose and intended readers, etc. These demands create an “extra burden that overwhelms the limited capacity of short-term memory” (Flower & Hayes, 1981, p. 373) and causes the differences between expert and inexpert writers’ writing processes and written products. Addressing this problem, Bereiter and Scardamalia (1987) proposed procedural facilitation, or supportive procedures that “provide cues or routines for switching into and out of new regulatory mechanisms while keeping the executive procedure as a whole intact and... minimize the resource demands of the newly added self-regulatory mechanisms” (p. 254). This routinized procedure potentially eases the executive burden of writing for inexpert writers (also referred to as “knowledge tellers”) and helps them develop writing expertise (knowledge and skills possessed by competent writers), so that they can gradually become expert writers (i.e. knowledge transformers). Bereiter and Scardamalia (1987) as well as other researchers

(e.g. Graham & Harris, 1993; Kozma, 1991; Zimmerman & Bandura, 1994) have trained first language (L1) learners to use procedural facilitation to minimize their cognitive demands while developing writing expertise, and the training has shown positive effects on writing quality and strategic knowledge. However, little research utilizing procedural facilitation (Cumming, 1986; Cumming & So, 1996; Lo, 1998) has been conducted in the context of SL writing.

Furthermore, the advent and development of computer technologies have paved the way for computer-based instruction in second language classrooms. In the area of Computer-Assisted Writing (CAW), word processors (e.g. Microsoft Word) have been widely used as a writing tool to support the SL writing process which consists of prewriting, drafting, and revising/editing phases. Using word processing programs, during the pre-writing stage, writers can list or outline their ideas, write freely, or use graphic organizers to plan before drafting. Then, they can draft, save, use thesauri, check spelling, etc. Finally, the writers can cut, paste, delete, copy, etc. in the revising/editing phase of the writing process. Thanks to these features, word processors allow writers to conveniently draft and revise their writing. Moreover, the use of the computer as a writing tool in SL classrooms has been found to have positive impacts on students' attitudes toward writing, writing quantity, and writing quality (Lam & Pennington, 1995; Warschauer, 1996). Yet, the role of the computer as a training tool for developing writing strategies has not been systematically incorporated and examined. Considering these salient factors involved with second language academic writing, this study aims to investigate the effects of pre-writing strategy training guided by procedural facilitation on

English as Second Language (ESL) students' writing strategy use, writing quantity and quality.

Background to the Study

Academic writing is perceived by most, if not all, ESL students as a set of difficult skills to acquire. To be able to write well academically involves writer's knowledge of topic, expectations of audience, rhetorical knowledge, language proficiency, to name just a few. Various forms of academic writing required by instructors in U.S. universities usually include, but are not limited to, essays, reaction papers, research papers, research proposals, and theses/dissertations, most of which may require different genres depending on disciplines and levels of education pursued. Because courses are often based at least in part on writing assignments, ESL students' academic writing ability plays a significant role in their educational success. Consequently, it is a common practice for intensive English programs to offer academic writing courses to ESL students who are preparing to enter U.S. universities.

For more than two decades, ESL writing instructors have employed the writing process approach to teach their students. Proposed by Flower and Hayes (1977) as an alternative to a product-oriented approach, the cognitive model of writing process consists of three major elements: writing process, the task environment (e.g. the writing assignment, audience, etc.) and the writer's long-term memory. The writing process itself consists of three main sub-processes: planning, translating, and reviewing. During planning, students take information from the task environment and from long-term memory, produce language corresponding to information in the writer's memory (translate), and read/edit (review) to improve the quality of the text. The writing process

approach emphasizes a non-linear and dynamic process where “writers constantly shift among pre-writing, writing, and revising tasks,” (Grabe & Kaplan, 1996, p. 19) during which they engage in the discovery and expression of meaning, but are not preoccupied with form (Silva, 1990, p. 16). Although the writing process approach has been criticized for putting a heavy emphasis on the writer with little or no consideration for the audience or community and for not preparing SL students to meet real academic demands, Flower and Hayes’ writing process model revealed some important insights, namely that composing is a goal-driven behavior; its process is non-linear and interactive; and experienced writers write differently from beginner writers. Its criticism led to the development of the social and discourse community writing process models, thus, adding to the earlier model the social and context factors which influence writing (Grabe & Kaplan, 1996).

The writing process approach focuses not only on the steps of writing (planning, drafting, and revising /editing) but also on writing strategies such as selecting topics, generating ideas, and considering writing purpose and audience. Existing SL research on writing processes and strategies (e.g , Zamel, 1982; 1983; Raimes, 1985; 1987; Leki, 1995; Matsumoto, 1995; Riazi, 1997), most of which was influenced by L1 writing research, is descriptive and documents learners’ writing process and strategies, centering on specific composing behaviors, specific types of L2 writers, or features unique to L2 composing. Silva’s (1993) review of 72 empirical research reports comparing L1 and L2 writing found that general composing process patterns of L1 and L2 writers are similar, but L2 composing is more constrained, more effortful, and less effective. Adult L2 writers were found to do less planning (global and local) and had more difficulty with

setting goals and generating and organizing material. Their drafting was more laborious, less fluent, and less productive—perhaps reflecting a lack of lexical resources. They reviewed, reread, and reflected on their written text less, revised more—but with more difficulty, and were less able to revise intuitively. Such behaviors regarding planning and editing are similar to those of unskilled L1 writers (Weigle, 2005). Additionally, some writing strategies, such as having a sense of audience, setting goals, organizing ideas, planning, monitoring, and evaluating performances are believed to be teachable and are independent of language proficiency (Cumming, 1989; Roca de Larios, Murphy & Marin, 2002). As such, Weigle (2005) advocates that L2 writing classes (at least at an intermediate level) provide a balance between a focus on language and a focus on writing strategies.

A body of research on expertise in writing has shown clear differences between skilled and unskilled writers based on their coordination of knowledge (e.g. language, topic, and genre knowledge) and the strategy use variable. Language learning strategies are defined as “behaviors, techniques, or actions used by students to gain second or foreign language skills” (Oxford, Crookall, Cohen, Lavine, Nyikos, & Sutter, 1990). Much language learning strategy research has revealed that students often lack awareness of language learning strategies, and the most efficient way to heighten this awareness is to provide explicit strategy training as part of the curriculum (Cohen, 2003). Previous language learning strategy training research employed blind training, informed training, and completely informed training (O’ Malley, Chamot, Stewner-Manzanares, Kupper, & Russo, 1985) and was intended to “to raise the learner’s awareness about learning strategies and model strategies overtly along with the task; to encourage strategy use and

give a rationale for it; to offer a wide menu of relevant strategies for learners to choose from; to offer controlled practice in the use of some strategies; and to provide some sort of a post-task analysis which allows students to reflect on their strategy use” (Dörnyei, 2006, p. 60). The majority of SL research on strategy training includes listening, reading comprehension, and more recently speaking; however, relatively little research has been completed on training of writing strategies (Chamot & Kupper, 1989). Previous writing-strategy studies have examined the writing strategies that support the drafting and revision stages of the writing process (Cresswell, 2000; Cumming, 1995; Cumming & So, 1996; Ransdell, Lavelle and Levy, 2002; Sengupta, 2000). Specific writing strategies such as considering writing purpose and audience, and generating and organizing ideas, which are frequently utilized by skilled writers but which are seldom used by less skilled writers, have not been the focus of studies with ESL student-writers.

Statement of the Problem

A careful review of existing research on ESL writing processes and strategies training reveals several questionable issues. First, much of SL writing research is descriptive and focuses on composing processes and strategies; there are very few experimental studies that validate ESL writing processes and strategies informed by the findings of previous descriptive or qualitative research. Existing findings as far as which writing strategies are effective to ESL writers remain inconclusive at best, suggesting a need to conduct further investigations in this area. Second, the SL writing strategy training studies available to date investigate writing strategies related to self-monitoring (Cresswell, 2000) and revision (Sengupta, 2000; Cumming, 1995; Cumming & So, 1996; Ransdell, Lavelle & Levy, 2002; Zhu, 1994; 1995). Few L2 writing studies have

examined the pre-writing strategies that have shown to be effective to L1 writers. In addition, training modules such as blind training, informed training, and completely informed training intend to raise learners' awareness of their learning strategies and those available to them. Unlike these training modules, procedural facilitation used as a writing strategy training framework has been reported to minimize the learner's cognitive load in working memory. Last, no SL researchers have taken advantage of the computer technology, a potentially valuable supporting tool for language acquisition (Cohen, 2006), to deliver strategy instruction in SL writing research. More importantly, scant research has linked pre-writing strategies, procedural facilitation, and computer technology and investigated whether these factors help ESL learners to improve their pre-writing strategy use, writing quantity, and writing quality. Indeed, there is a clear need for a systematic investigation focusing on this issue.

Conceptual Framework

The present study is guided by Bereiter and Scardamalia's (1987) knowledge-telling and knowledge-transforming cognitive models of writing process by which texts are composed. Investigating the relations between first language writing instruction and young learners' development of writing expertise, the researchers discovered that knowledge-tellers or immature writers compose text content by using topic and genre identifiers as cues to search for appropriate content and discourse knowledge in their memory and retrieve this relevant information for generating text. The retrieval process takes place automatically without the writers' plan for coherence. In contrast to knowledge tellers, knowledge-transformers, or mature writers, make use of more complex problem-solving skills while processing the content and discourse knowledge

existing in the knowledge-telling process. Prior to developing texts, mature writers analyze the problem, plan, and set goals. These problem-solving skills or metacognitive strategies are generally lacking in immature writers.

Bereiter and Scardamalia (1987) further proposed that procedural facilitation, a way to ease the executive burden of writing, be implemented to develop writing expertise in knowledge tellers, so they can gradually become knowledge transformers. According to Bereiter and Scardamalia, procedural facilitation consists of four steps: 1) identify a self-regulation function that appears to work in expert performance; 2) describe the self-regulatory function in terms of mental operations as explicitly as possible; 3) create cues or routines that minimize demands on mental resources; and 4) provide external supports or teachable routines for reducing the information-processing burden of mental operations.

Purpose of the Study

Using Bereiter and Scardamalia's (1987) knowledge-telling and knowledge-transforming writing models as the theoretical framework and procedural facilitation as the framework for pre-writing strategies training, this research study examined the effects of computerized pre-writing strategy instruction on intermediate ESL students' strategy use, writing quantity, and writing quality. Assuming that the training would have an impact on these variables, the researcher utilized a sequential mixed method design or a "Quan/Qual sequence" (Tashakkori & Teddlie, 1998) with a quasi-experimental design in the initial stage followed by semi-structured interviews. This study addressed the following research questions:

Research Questions

1. Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the participants' use of writing strategies when writing opinion letters?
2. Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the quantity of writing produced by the participants?
3. Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the quality of writing produced by the participants?
4. How do the participants approach the task of writing an opinion letter?

Significance of the Study

The present study contributes to the field of second language writing as it relates to writing strategies both theoretically and practically. At a theoretical level, this study adds much needed information to the body of literature relative to training of ESL pre-writing strategies and procedural facilitation. At a practical level, the findings of this study may help administrators and ESL teachers to make informed decisions in selecting writing strategies that can facilitate ESL students' writing process and a theoretically-based training module to train their students. It may also help to inform ESL students of some successful pre-writing strategies that can enhance their writing quantity and quality.

Definition of Terms

Attributive adjective--An adjective which is used before a noun

Cognitive strategies--Mental activities for manipulating the language to accomplish a

task and which are intended to enhance comprehension, acquisition, or retention

ESL--An abbreviation of English as a Second Language which refers to the English language which is learned for the purpose of communication

Graphic organize--A visual representation of ideas useful for organizing thoughts

Idea unit--A clause that contains one verb phrase and noun and prepositional phrases, adverbs, and so forth that belong to it (Chafe, 1985)

Inspiration 6--A commercial graphical organizer software program

Quasi-experimental design--A research design which has a control and an experimental group but without random assignment of participants

Language learning strategy--Behaviors, techniques, or actions used by students to gain or improve second or foreign language skills

Metacognitive strategies--Mental activities for direct language learning, such as planning, monitoring, and evaluation

Nominalization-- The grammatical process of forming nouns from other parts of speech, usually verbs or adjectives

Procedural facilitation--A Supportive procedure that helps to minimize cognitive demands of inexperienced or less experienced writers while they perform cognitively demanding tasks (Bereiter & Scardamalia, 1987)

SL--An abbreviation of Second Language which refers to a language learned for the purpose of communication

Writing quality--Three writing traits including writing purpose and audience, development of main idea and support, and organization present in students' opinion letters

Writing quantity--Number of idea units appeared in students' opinion letters

Writing strategies --Conscious thoughts, actions, or behaviors used by writers to make their writing more effective. In this research, the focus is on considering the writing purpose, considering the audience, and generating and organizing ideas.

Organization of the Study

The current dissertation research is divided into five chapters. Chapter one introduces the research background, discusses the statement of problem, establishes the conceptual framework, explains the purpose of the study, and states the research questions. Chapter two reviews relevant literature related to second language writing, procedural facilitation, language learning strategies, strategy training, and computer-assisted writing. The conceptual background which guides this study is also presented. Chapter three discusses the research design, the study context, the treatment, the instruments, and data collection. Chapter four presents the results of both qualitative and quantitative analyses that answer the four research questions of this study. The final chapter discusses the research findings, pedagogical implications, and further research.

Chapter 2 -- Literature Review

This chapter reviews existing literature on second language writing, more specifically in the area of writing strategy training. It includes five sections. The first section provides a brief history of the writing process approaches and discusses two cognitive writing process models proposed by Flower and Hayes (1981) and Bereiter and Scardamalia (1987) that theoretically guides the current research. The second section examines research on second language writing. The third section introduces procedural facilitation, which frames the writing strategy training in this study, followed by research related to it. The fourth section explains second language writing and computer technology. The last section examines second language learning strategies, strategy training research, and strategy training frameworks. The connections among these salient threads relevant to the current study are established throughout the chapter.

Writing Process Approaches

The process approach to writing has been employed by many ESL teachers for over four decades after the dominance of two instructional approaches, namely, controlled composition and current-traditional rhetoric. The controlled composition orientation, grounded in theories of behavioral psychologists (e.g. Fries, 1945), regards writing as the reinforcement for oral habits; thus, it emphasizes the accuracy of forms over ideas. The subsequent current-traditional rhetoric approach was applied in ESL writing contexts to fill the gap of controlled composition by teaching students different rhetorical models, such as narration, illustration, exemplification, comparison, contrast,

classification, definition, etc. Nevertheless, its focus remains on forms, accuracy, and final written products, typical features of students' writing that are evaluated in the real world.

The history of the process approaches to writing can be divided into four stages; namely, the expressive stage, the cognitive stage, the social stage, and the discourse community stage (Grabe & Kaplan, 1996). In the expressive stage of the writing process, writers were encouraged to express their authentic voices freely. They were assumed to already possess knowledge and writing skills available for articulation on paper; therefore, it was suggested that this stage of the writing process fell short in considering some possible differences of cognitive processing in inexpert and expert writers. More importantly, it was criticized for not being guided by any theoretical foundation.

The psychologically-based cognitive approach to the writing process began in the early 1970s. It hypothesized that composing is a goal-driven behavior; its processes are interactive, intermingling, and potentially simultaneous; and experienced writers write differently than beginner writers (Flower and Hayes, 1977). One of the most influential cognitive models of the writing process was proposed by Flower and Hayes (1981) and further elaborated by Bereiter and Scardamalia (1987). Their writing models are reviewed in detail in the next section. Despite valuable insights brought into the field of writing, this cognitive approach to the writing process is criticized for placing a heavy focus on the writer, disregarding the importance of language form, and dismissing the consideration of audience or community. Furthermore, it is viewed as having little meaning outside of the social context which defines the particular writing purpose, a notion as applicable in the classroom as it is in the real world (Grabe & Kaplan, 1996).

These shortcomings led some writing researchers, who viewed writing as a creation of a socially-constructed activity rather than that of an individual, to the development of a social-context approach to the writing process. Within this social view, there were a number of distinct perspectives, such as those from educational ethnography, sociolinguistics, discourse communities, and the sociology of science (Grabe & Kaplan, 1996), and some valuable insights were gained from these various perspectives. For example, ethnographic research in education related to writing takes into consideration the social contexts in which language occurs. As a result, it assumes that different language uses vary from context to context. Although providing rich data of how and why people write, ethnography fell short in generalizability.

The discourse community considers the interactions of readers, writers, texts, and social contexts (Rafoth, 1988), combining the views of social and cognitive perspectives to writing. Swales (1990) defined a discourse community as one that shares common public goals, is a forum of discussion, provides feedback and information to its members, creates discourse expectations and genres, uses a specific set of terminology and specialized vocabulary, and has enough members to discuss important matters to a wider group. The notion of discourse community plays an important role in the development of writing curricula for post-secondary levels and was later extended to writing instruction at a tertiary level. However, Grabe and Kaplan (1996) cautioned that if a discourse community became a community of elite members, their power could negatively influence a process of knowledge exchange among its members (Grabe & Kaplan, 1996).

The Flower and Hayes writing process model. Flower and Hayes' (1981) cognitive model of the writing process consisted of three major elements: task environment, writer's long-term memory, and writing processes. The task environment refers to the information related to the writing assignment (e.g. topic, audience, and motivating clues) and text that the writer has created so far that has an impact on the writing performance. The writer's long-term memory includes the information such as knowledge of topic, audience knowledge, and various writing plans which the writer retrieves and refers to during the writing process. The writing processes consist of planning, translating, and reviewing, all of which are controlled by a monitor that "functions as writing strategist which determines when the writer moves from one process to the next" (Flower & Hayes, p. 374). Planning comprises three sub-processes, namely, generating ideas, organizing information, and setting goals. While writing, writers take ideas from planning, information from the task environment and from long-term memory, and convert them into written forms corresponding to information in the writer's memory (translate), and read/edit (review) to improve the quality of the text. Though consisting of hierarchical sub-processes, writing is a non-linear and dynamic process where "writers constantly shift among pre-writing, writing, and revising tasks," (Grabe & Kaplan, 1996, p. 19) during which they engage in the discovery and expression of meaning, but are not preoccupied with form (Silva, 1990). Accordingly, the writing process practiced in writing classrooms typically involves planning, drafting, revision, and editing.

Knowledge-telling and knowledge-transforming writing models. Bereiter and Scardamalia (1987) proposed two distinct processing writing models that differentiate knowledge tellers (also referred to as immature, inexperienced, or unskilled writers in this study) from knowledge transformers (mature, experienced, or skilled writers). More specifically, they differ in the way they bring their knowledge into the writing process and how they process it. Investigating the relations between first language writing instruction and young learners' development of writing expertise, Bereiter and Scardamalia (1987) acknowledge that knowledge-tellers or immature writers compose text content by using topic and genre identifiers as cues to search for appropriate content and discourse knowledge in their memory and retrieving this relevant information for generating text. The retrieval process takes place automatically without the writers' plan for coherence. If the retrieved content and discourse knowledge appear appropriate to the topic, knowledge-tellers may draft or make notes and use it to search for more information to write. More appropriate retrieved information will be added to their writing. The processing demands are quite simple in this model. In other words, knowledge tellers simply tell what they know about the topic or task when composing texts. They, indeed, employ a writer-based approach (Flower, 1979) to get the job done. The knowledge-telling process is illustrated in Figure 1.

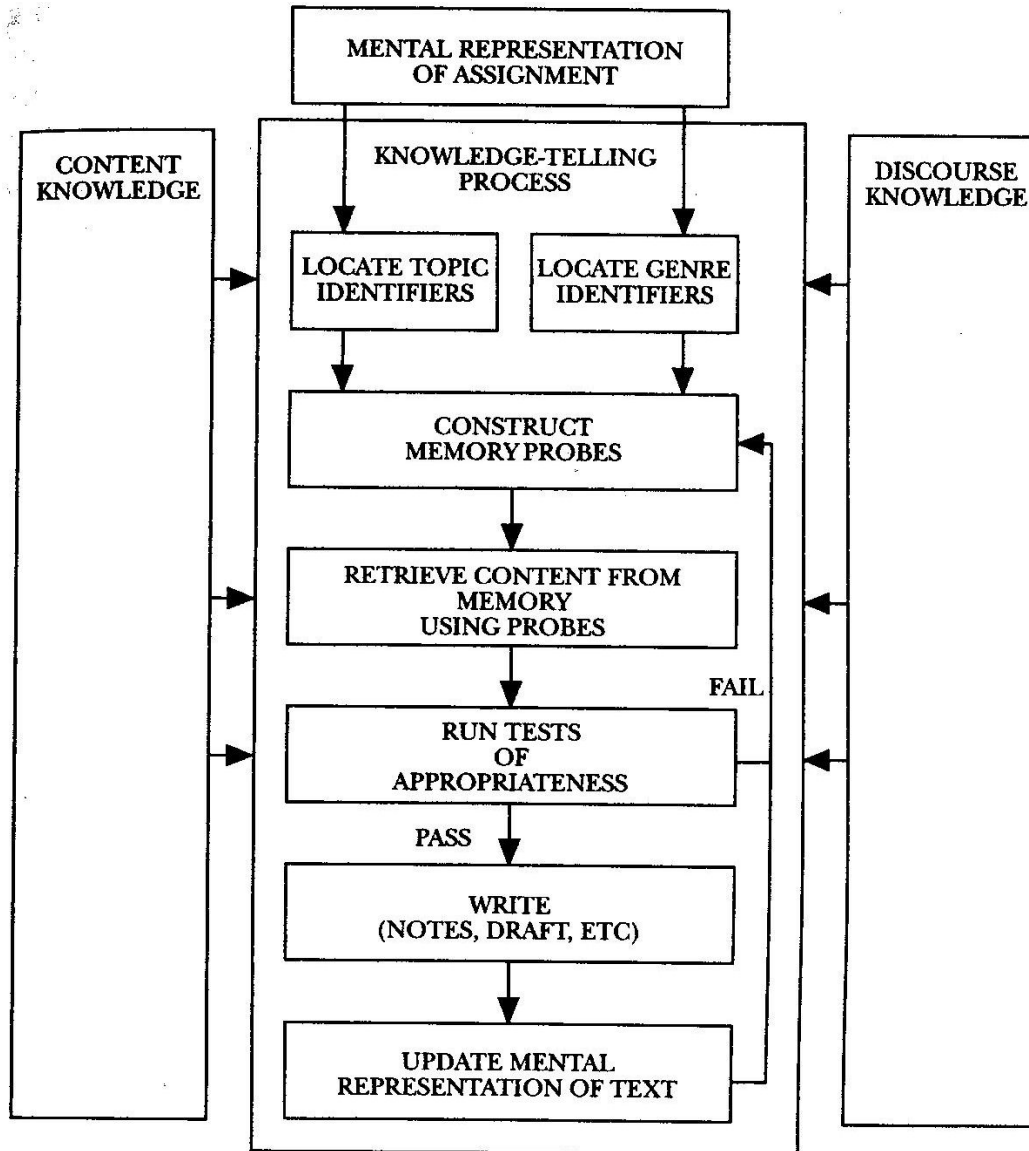


Figure 1 Structure of the knowledge-telling process

In contrast, knowledge-transformers or mature writers make use of more complex problem-solving skills while processing the content and discourse knowledge, existing in the knowledge-telling process. Prior to developing texts, mature writers analyze a problem, plan, and set goals, the problem solving skills or metacognitive strategies believed to be lacking in immature writers. In other words, knowledge-transformers are

goal-driven and employ a reader-based approach when they carry out a writing task. The illustration of the knowledge-transforming process is in Figure 2.

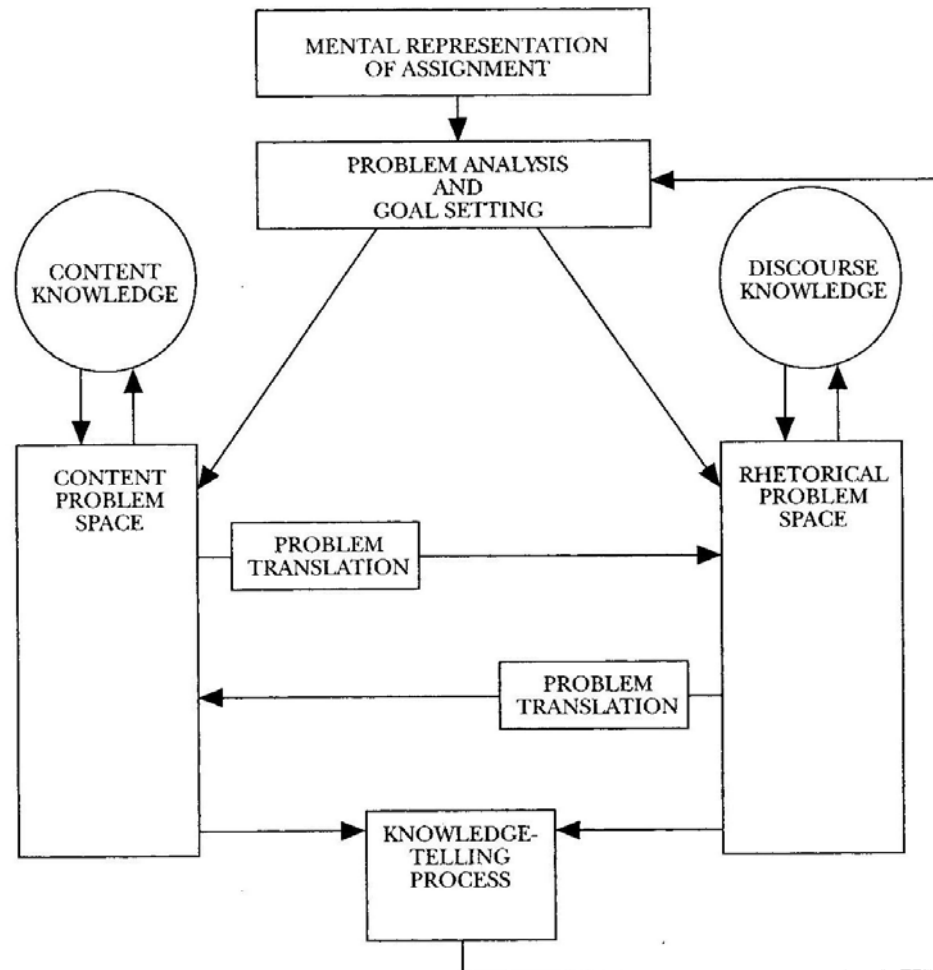


Figure 2 Structure of the knowledge-transforming process

The key difference between knowledge-telling and knowledge-transformation lies in the complexity of the content space, the rhetorical space, strategy use, and problem-solving skills. According to Bereiter and Scardarmalia (1987), knowledge transformation is “a dialectic process between the content space and the rhetorical space” (p. 303), the process in which writers actively rethink and restate their ideas. The interaction between

the content and rhetorical spaces was illustrated by Bereiter and Scardarmalia (1987, p. 11),

...a writer might be working in the rhetorical space on a problem of clarity and might arrive at the decision that she needs to define the concept of *responsibility* as she is building her argument around. This is a content problem, however, and so one might imagine a message going from the rhetorical problem space to the content problem space, saying “What do I really mean by *responsibility*?” Work on this problem within the content space might lead to determining that responsibility is not really the central issue after all but that the issue is, let us say, *competence to judge*. This decision, transcribed to the rhetorical space, might initiate work on problems of modifying the text already written so as to accommodate the change in central issue. This work might give rise to further content problems, which might lead to further changes in the writer’s beliefs, and so on until a text is finally created that successfully embodies the writer’s latest thinking on the subject.

Evidently, knowledge tellers need some strategies (e.g. cognitive and metacognitive) to assist in triggering more complex mental representations of and operations between the content/knowledge and the rhetorical space, leading to a goal-directed, effortful problem-solving approach in writing and fostering knowledge transformation (Lo, 1998). This view has been widely accepted by L1 and L2 writing researchers (e.g. Belcher, 1995; Bereiter & Scardamalia, 1987; Cumming, 1995; Lo, 1998; Weigle, 2005; Zellermyer et al., 1991) who see these as necessary skills for producing effective academic writing.

To summarize, the writing process comprises three major elements: planning, translating, and reviewing. The process is recursive and dynamic. Additionally, inexperienced and experienced writers make use of different writing processes.

Research on Second Language Writing

Existing SL research on writing processes and strategies, influenced by L1 research, is descriptive and documents unskilled and skilled writers’ writing process and

strategies, centering on specific composing behaviors, specific types of L2 writers, or features unique to L2 composing. Zamel (1982) explored the process of writing of eight ESL students using interviews. She found that these ESL writers used similar strategies to those used by skilled writers of English although her most proficient writer composed in her native language first and then translated into English.

Attempting to further examine the composing processes of ESL students, Zamel (1983) used a case study approach to examine the composing processes of six advanced ESL students. Her participants were found to experience writing as a process of discovering and creating meaning and the skilled ESL writers in her study explored and clarified ideas and revised at discourse level, exhibited recursiveness in their writing process, and saved editing until the end of the process. They understood that composing involves the constant interplay of thinking, writing, and rewriting. On the other hand, the unskilled L2 writers in her study revised less and spent less time writing than the skilled writers. They focused on small bits of the essay and edited from the beginning to end of the process. What was absent from the writing process of these two groups of writers was generating ideas in the form of writing (e.g. notes, outlines, etc.). Zamel speculated that skilled L2 writers may have the ability to create a mental blueprint that they retain and reconstruct throughout the process without jotting anything down during the planning stage.

Similar findings were reported by Raimes (1985) using think-aloud protocols with eight ESL students while composing in a first and second language. She found that most of her unskilled writers did little before writing and paid less attention to revising and

editing. In addition, their composing competence did not correspond with their linguistic competence.

Raimes (1987) set out to investigate the composing strategies of eight ESL students in remedial and nonremedial groups, using interviews, language proficiency scores, think-aloud protocols, and students' essays. She found some common composing strategies (e.g. rescanning, planning) to ESL writers across course placement and language proficiency levels and to L1 and L2 writers. However, the students in the nonremedial group planned more, rehearsed more, rescanned more, revised more, and edited more, despite individual variation. There was little correspondence between language proficiency, judgments of writing ability, and composing strategies. Raimes concluded that L2 writers employed similar writing process and strategies to those used by L1 writers.

Early second language writing process and strategies researchers centered their attention on unskilled and skilled writers in undergraduate programs; however, more recent research has broadened the scope to investigate professional L2 writers and those studying in the U.S. graduate programs. Leki (1995), for instance, reported on the academic literacy experiences of five ESL students and the strategies they used to cope with the academic written assignments required by a U.S. university. Her qualitative study employed several sources of data including participants' interviews, interviews with their professors, class observations, and course written documents, such as class notes, exams, written drafts, final drafts with professors' comments and evaluations. She discovered that her participants brought with them a variety of useful strategies that enabled them to cope with the demand of the written assignments. More specifically,

they used clarifying strategies to confirm the assignment requirements, focusing strategies to give attention to the writing task both widely and deeply, relying on past writing experiences to achieve their current writing tasks, taking advantage of first language or culture to compensate for the lack of linguistic and educational experiences, using current experience or feedback to guide later assignments, looking for models and determining the appropriateness for their works, applying current or past ESL writing training with their assignments, accommodating teachers' demands, resisting teachers' demands, and managing competing demands in terms of time, work loads, cognitive load, and personal responsibilities. Besides reporting these ten strategies, the research also shows that these ESL students already possess some writing strategies from past learning experiences.

Aiming to describe the processes and strategies of EFL professionals, Matsumoto (1995) conducted a qualitative research study interviewing four Japanese EFL writers who produced research papers. These writers were Japanese university professors (aged mid-30s to mid-40s) teaching in Japan. Each holds a Ph.D. degree from an American university and has been prolific in publishing articles both in English and Japanese in the field of Humanities. All of them studied English since junior high school, or from age 13. They received their undergraduate and graduate degrees in Japan, and spent an average of 3.5 years in the U.S. pursuing their Ph.D.s.

The participants were interviewed in Japanese focusing on the research questions. They were allowed to provide any information related to their habits and behaviors regarding their academic writing. These interviews lasted an hour per participant, were audio-recorded, and then the researcher listened and took detailed notes. Matsumoto

discovered that during planning, the participants had selected journals they wished to send their papers to, and had begun to write with specific audience in mind. All of them used word processing for planning: generating and organizing ideas, creating a tentative title, making a rough outline (setting the introduction, discussion, and conclusion), and choosing references to be cited in each section. While brainstorming and generating ideas, they might have used their L1. They continued to use word processing to compose the first draft. They reported that they never used the translation strategies from L1 to L2. If they could not find an appropriate word or phrase, they would mark that section to come back to later to revise. For revision, they focused on content and used multiple-revision strategies both on computer and printouts which needed a delay between drafts. They tended to use delete-rather-than-add strategies during this stage.

With respect to the L1 and L2 writing processes, the participants followed the same process and used the same strategies. In other words, they transferred strategies they acquired in Japanese research paper writing to English research paper writing. All of them viewed the writing process as non-linear and dynamic and agreed that practice trained them to become effective writers. In terms of editing, they use self-edit strategy.

Riazi (1997) investigated how four (one female and three male) Iranian doctoral students of Education who were in their second year of residency acquired domain-specific literacy required by their academic discipline in a major university in Canada. The data were collected over a period of five months, using questionnaires, interviews (structured, unstructured, and text-based), written documents (participants' papers, their professors' feedback on them, and course outlines), and reading and writing logs. For data analysis, The Ethnograph was used to number text lines, assign codes to selected

lines, and search for specific coded segments. After that, the researcher de-contextualized the coded segments related to each category and research question from the coded data. The purpose of the analysis and interpretation of the data was to discover patterns of thought, ideas, explanations, strategies, and understandings of the participants in the process of preparing for and producing their academic writing tasks.

Riazi found that the participants primarily reconstructed the assignment tasks: interpreting the tasks, forming general goals towards them, and using macro-strategies to carry out their academic tasks. Their composing strategies were put into four categories: cognitive, meta-cognitive, social, and search strategies. Employing cognitive strategies, the Iranian students interacted with the reading materials to be used in writing by manipulating them mentally and physically. These cognitive strategies included note-making, elaboration, use of mother tongue knowledge and skill transfer from L1, inferencing, drafting, revising, and editing. Furthermore, the students used meta-cognitive strategies or self-regulatory strategies to determine goals, plan, rationalize appropriate formats, monitor, and evaluate their writing products. Moreover, the participants employed social strategies to interact with their professors and peers to clarify a task, seek advice for a problem related to a task, or to discuss feedback they had received from the professors. In addition, the participants used search strategies to search for materials to be used in their writing from a variety of sources, such as libraries, computerized resources, unpublished materials on microfiche, etc.

Interestingly, the participants reported that while composing their academic paper, they acquired writer's knowledge such as knowledge of discourse community, knowledge of subject matter and L2, and knowledge of form and genre. They thought

that writing on specific topics helped them to consolidate domain-specific concepts as well as topics; therefore, writing, for them, was more effective than reading to acquire domain-specific knowledge.

Thus far, research findings related to ESL students' writing processes and strategies suggest that skilled ESL writers spend more time planning, revising, and editing their work than novice writers. The skilled writers consider their readers' expectations, revise at discourse level rather than making surface changes to the text, etc. Moreover, skillful writers perceive the composing process as the constant interplay of thinking, writing, and rewriting. They go back and forth between planning, drafting, rereading, and revising, while less skillful writers tend to view writing as a more linear process, going from planning to writing to revising without going back to previous steps (Weigle, 2005).

Another line of research (Cumming, 1989; Roca de Larios, Murphy & Marin, 2002) suggests that some strategies can be teachable and are independent of language proficiency. These strategies include, but are not limited to, having a sense of audience, setting goals, organizing ideas, planning, monitoring, and evaluating performances. Some researchers (e.g. Weigle, 2005) recommend that writing classes (at least at an intermediate level) provide a balance between a focus on language and a focus on writing strategies.

Procedural Facilitation

Prior to introducing Bereiter and Scardamalia's (1987) procedural facilitation, a brief overview of Information Processing Theory warrants attention. Information is believed to enter the human sensory system and activate the mental processes that result

in physical or mental actions. This information is stored either in short- or long-term memory. Short term memory is the active working memory that holds the information, typically declarative knowledge, for a brief period while long-term memory stores declarative knowledge and processes procedural knowledge. Declarative refers to factual knowledge (e.g. knowledge of words or grammar rules in the English language system, knowledge of tasks) whereas procedural pertains to skills knowledge or knowledge of how we do things (e.g. how to form a question using the knowledge of words and grammar rules). When students receive new input or encounter an unfamiliar task, they resort to controlled processing which takes up much working memory space due to heavy demands on their attention. Declarative (controlled) knowledge of a complex skill, such as L2 language production, can be transformed into procedural (automatic) knowledge through proceduralization, the process which helps to liberate working memory space.

Paralleling this line of thought, procedural facilitation was proposed by Bereiter and Scardamalia (1987) as supportive procedures that can help knowledge tellers, while writing academically, to minimize the cognitive demands of their attention and allow them to focus on other relevant demands. Assuming that children might have appropriate self-regulatory mechanisms available but fail to use them, Bereiter and Scardamalia trained some elementary students to use procedural facilitation when they composed and revised short opinion essays. Procedural facilitation which engages modeling cognitive, metacognitive, and self-regulatory processes, consists of four steps: 1) identify a self-regulation function that appears to work in expert performance; 2) describe the self-regulatory function in terms of mental operations as explicitly as possible; 3) create cues or routines that minimize demands on mental resources; and 4) provide external

supports or teachable routines for reducing the information-processing burden of mental operations. Accordingly, revision was identified as a common strategy used among expert writers but was seldom employed by children. In terms of mental operations, revision was described as comparing, diagnosing, choosing a revision tactic, and generating change to texts. Cued statements such as “people might not believe this; people may not understand what I mean here; and I think this could be said more clearly” (Bereiter & Scardamalia, 1987, p. 270) on slips of paper were created to support compare operations. Likewise, directive phrases such as “I think I’ll leave it this way; I’d better give an example, or I’d better say more” (Bereiter & Scardamalia, 1987, p. 271) written on slips of paper were created to facilitate tactical choice. The children were found to be able to perform the self-regulatory function with little additional burden on their processing capacities, that is, they were able to apply their procedural knowledge to monitor their writing and pay closer attention to what needs to get the writing done. Bereiter and Scardamalia also conducted another study which trained elementary children and college graduate students to utilize procedural facilitation while composing.

Research on procedural facilitation. Bereiter and Scardamalia’s (1987) procedural facilitation has been used as an instructional approach in many empirical studies in the L1 writing contexts. Such studies were conducted with English-native-speaking students ranging from elementary children to college students. It is important to note that immature, inexpert, and knowledge-telling writers are the terms that Bereiter and Scardamalia use to refer to unskilled writers. These writers include not only children but also adult writers. The participants were trained to use either computerized organizational tools (e.g. Kozma, 1991; Zeller-mayer et al., 1991), or cue

words/statements on cue cards (Englert et al., 1991; Graham et al., 1991; 1993; Lo, 1998) for a range of a few hours and up to five months. These studies focused on learners' use of metacognitive strategies, particularly self-monitoring and self-regulation strategies to enhance their learning processes and/or outcome. The results from the majority of these studies showed that procedural facilitation had positive associations with students' written work and their metacognitive knowledge.

Two aforementioned L1 studies offer insights related to computerized training for the proposed study. Kozma (1991) examined the impact of two computer-based organizational tools, which are an outline and a graphic idea organizer, and embedded topical and rhetorical prompts on 41 college writers' (21 novice and 20 advanced writers) cognitive skills. They used three software programs in this study: Macwrite (a word processor) to compose, Acta to outline ideas, and Learning Tools to generate and organize ideas. Kozma found that these tools and prompts increased planning of novice and advanced writers, but there was no correlation between the amount of planning and the quality of compositions in both types of writers. Novice writers composed best when they used the outline with prompts whereas advanced writers planned more and wrote better compositions using graphic idea organizers. The researcher concluded that planning is necessary but insufficient for writing a good composition, and not all planning is productive planning.

Zellermayer et al. (1991) investigated the effect of procedural facilitation by means of a computerized "Writing Partner" on 60 high-school students' writing. The students were equally divided into three groups: one group wrote five essays while being guided by unsolicited metacognitive-like guides (USG group); a second group received

the same help but only upon the writer's voluntary solicitation (SG group); and the third group received no guidance and wrote with only a word processor (control group). The metacognitive-like guides that supported the planning phase of writing were prewriting, planning questions related to rhetorical purpose, discourse schemata, and audience such as: "Do you want your composition to persuade or to describe?" and "What kind of audience are you addressing?" Another group of metacognitive-like guides supported the writers during composing their first draft. Thirty questions were divided into four categories: elaboration (e.g. "What else do I know about this?"), organization (e.g. "Wouldn't it be better to move this information to the front?"), explicitness (e.g. "Don't I have to explain some concepts?"), and purpose (e.g. "Am I proceeding in the right direction?"). The last group of metacognitive-like revision guides prompted the writer to reread the first draft and check for supporting ideas or examples. The example guiding questions included "Does your composition make the necessary transitions from one idea to the other?" and "Is your argument supported by data that is sufficient to convince a novice?" All of the participants wrote a pre-test composition that expressed their opinions by pen two months prior to the training. The training consisted of five two-hour sessions of writing with the Writing Partner was conducted with the USG and SG groups. In each of the training sessions, students chose one of two assigned writing topics. After finishing each composition, the students completed a brief questionnaire. The students took the writing post-test two weeks after the fifth training was completed. The USG group was found to use more mental effort during writing the training essays, show better recall of metacognitive guides, engage in more planning during post-test, and show significant improvements in writing quality on the training essays and unaided essay writing post-

test. The opposite was found in all categories with the SG group because they were less mindful of the imposed guidance during essay planning and the voluntarily solicited guidance during writing.

In L2 writing context, however, only a few research studies examined ESL writers using procedural facilitation. For example, Cumming and So (1996) investigated four one-to-one tutoring sessions providing either error correction or procedural facilitation in the form of five thinking prompts (word, rules, fit, goals, and L1/L2) to assist ESL students in revising their written texts. Procedural facilitation prompts were found to have an impact on students' global revisions. In another study, Lo (1998) trained nine Chinese ESL engineering students to use the same five thinking prompts mentioned in the previous study. The researcher analyzed the impact of procedural facilitation of strategic knowledge on the students' academic writing development and knowledge-transforming behaviors. Lo discovered that the participants improved the quality of their written texts in the technical description task significantly, specifically in the areas of global quality, content, language accuracy and language appropriacy. They also showed significant improvement in their strategic thinking while composing, devoting more attention to two aspects of writing that were highlighted in two of the thinking prompts, using more complex representations of composing tasks, and displaying more knowledge-transforming behaviors while composing. Lo found that the use of procedural facilitation helped inexpert ESL adult writers to make some strategic changes in their writing processes.

Two important implications can be drawn from the reviewed studies related to procedural facilitation. One is that procedural facilitation can be used as supportive

procedures to decrease competing writing demands in inexperienced adult ESL learners when engaging in the writing process. The other is that procedural facilitation provides a systematic framework for training inexperienced ESL writers to use some successful writing strategies employed by knowledge-transformers in order to trigger more complex processing and develop some problem-solving skills when approaching demanding academic writing tasks. Another research strand pertinent to this proposed study is ESL writing and computer use which is reviewed in the next section.

ESL Writing and Computers

With the development of computer technology, more and more ESL learners use the computer as a writing tool instead of paper and pen/pencil for personal (e.g. e-mail) and academic writing. A word processing software program such as Microsoft Word installed on a computer allows learners to conveniently draft, revise, add, delete, spell-check, grammar-check, and etc. Such features are practical for writing because “they facilitate the mechanical process of putting words on paper; revising text by substitutions, deletions, additions, and block moves; and producing attractive and readable finished copy” (Pennington, 2003, p. 288). Furthermore, a blinking cursor on the computer screen can prompt a writer to start and to keep on writing (Pennington, 1993). The word processor used as a writing medium has indeed transformed the writer’s process and product.

Early SL research on writing and computer technology often investigated how students felt and performed with word processing on a computer. Regarding student attitudes, it was found that most students exhibited positive attitudes towards the computer and felt that it could help them in their work. For example, Neu and Scarcella

(1991) and Phinney (1991) reported that SL writers exhibited improved attitudes toward writing when composing on a word-processor than using pen and paper. In addition, it was found in Phinney's study that ESL students who computer-wrote felt less anxious and were able to handle complex material while writing. Odenthal (1992) also found a positive change in attitude of Turkish students using computers over those using pen and paper. A similar finding was reported by Akyel and Kamisli (1999) conducting a similar study with Turkish university students of English. Their participants' attitudes towards computer use were positive, and they became more confident in their writing. Nevertheless, not all learners embraced the use of computer, especially older learners who perhaps felt uncomfortable with technology and/or typing on keyboards. However, many researchers agreed that with more time and practice working on computers, these students would feel more comfortable with these tools.

With regard to how students performed using a word-processor, Lam and Pennington (1995) investigated the differences in the quality of 301 essays on a variety of topics written by two groups of Cantonese learners of English who used computer or pen and paper. Each student wrote a total of 18 essays. The ESL Composition profile (consisting of content, organization, vocabulary, language use, and mechanics) was used to rate students' writing. The researchers discovered that the students in the computer group outperformed those in the pen and paper group in all of the five categories. They believed that the word processor could be a valuable tool in teaching second language writing.

Goldberg, Russell and Cook (2003) reviewed 65 studies conducted between 1992 to 2002 to find the effect of computers on the quantity and quality of student writing as

well as comparing writing via computer to that using paper and pen/pencil. The findings showed positive effects of computers on students' writing quantity and quality. Writers were also found to revise more when writing with a computer than when using traditional means. Furthermore, the results showed that students who used computers when learning to write were more engaged and motivated than those using paper and pen.

Although these findings were usually in favor of the computer-assisted writing over paper and pen in relation to students' attitudes, motivation, drafting and revision behaviors, writing quantity and quality (Goldberg, Russell & Cook, 2003; Lam & Pennington, 1995; Matsumoto, 1995; Pennington, 1999), word-processors, alone, have been viewed as providing little support to planning for writing. Computer writers have a tendency to start composing immediately after a topic is chosen and do little mental planning or create a "mental blueprint" (Zamel, 1982). Haas (1989) studied ten professional and ten student writers when writing on computers, using a think-aloud protocol. She found that word processors eased production and revision of texts but both types of writers significantly dropped planning before writing when they used word processors instead of pen and paper. Computer writers also did less conceptual planning (e.g. generating ideas, establishing goals, organizing texts) but more sequential planning. With computers, writers moved much faster toward text production, which Haas explains by pointing out that the spatial and tactile relationship between them and the writing process has been altered. These findings suggest that computer-assisted writing instruction could be more effective if planning strategies were incorporated in the writing process. This suggestion is supported by other writing researchers who found that expert

writers planned more than inexperienced writers, and more planning led to better writing quality.

However, Pennington (2003, p. 292) cautions teachers against applying word processing in a language writing classroom. She recommends that students be informed and shown how to exploit the benefits of this writing tool, so they can gradually experience the following three effects:

- 1) Manner Effects. A sense of the ease of writing and revising in a fluid writing process involving continuous and recursive write-revise cycles;
- 2) Quantity Effects. Writing for extended periods of time, producing long texts with much content and many revisions;
- 3) Quality Effects. Writing to a high standard in terms of topic development, formal characteristics, and writing goal.

Pennington (2003) contended that with more time, practice, and skills, students who have experienced the above effects will eventually produce high quality written products via computers.

Graphic Organizers

A graphic organizer is a visual tool that illustrates the relationships between ideas, facts, and/or terms within a learning task. Information depicted using this tool is easier to understand and learn (Dye, 2000). Graphic organizers are sometimes referred to as concept maps, semantic webs, concept diagrams, or advance diagrams. Hyerle (1996) divided visual tools into three categories that correspond to the three purposes of the tools: brainstorming webs, task-specific organizers, and thinking process maps. Brainstorming webs include mind mapping, webbing, and clustering. Task-specific

organizers include life cycles (used in science), text structures (used in reading), and decision trees (used in mathematics). Thinking process maps include concept maps, diagrams for systems thinking, and thinking maps. The proposed study utilized the Inspiration 6 graphic organizing tools in the form of semantic webs for generating and organizing ideas during the plan phase before writing. After planning, student writers can use a visual display of their ideas and connections between them while they draft their texts. As such, graphic organizers can help reduce the cognitive load and enable the working memory to process and retain new learning materials (IARE, 2003).

Graphic organizers such as concept maps, idea maps, and semantic webs have been used for improving L1 student learning and performance across grade levels in relation to vocabulary development (Brookbank et al., 1999), reading comprehension (Brookbank et al, 1999; Troyer, 1994; Bowman, 1998), development of thinking and learning skills (Doyle, 1999; Griffin et al., 1995), and writing (Brennan, 2006; Meyer, 1995; Gallick-Jackson, 1997; Hopkins, 2002).

In the context of writing, Meyer (1995) examined the effects of graphic organizers in third-grade students in a 13-week quasi-experimental study in which students who used graphic organizers incorporated as a part of the creative writing process were compared to students who followed the writing process without the use of organizers. Comparison of pre-and post-tests indicated that the idea organizing tools helped the students in the experimental group keep to the topic and organize their ideas logically.

Gallick-Jackson (1997) conducted classroom-based research with second-grade students to improve their narrative writing skills, composition skills, and related attitudes

toward writing. Word processing, graphic organizers, and art were integrated into the students' writing process for 12 weeks. Post-tests revealed improvement on students' narrative writing skills and their attitude toward writing. Seventy-five percent of the students increased their writing skills by one proficiency level and 25% increased by two levels. Graphic organizers were reported as facilitating students in brainstorming and organizing ideas. However, no control group was included in this study to compare with the group which used graphic organizers to measure change.

Further, graphic organizers such as clustering, Venn diagrams, and comparison charts were implemented to assist the development of 15 low-achieving tenth grade student's essay writing skills (Hopkins, 2002). The overall goal of the study was to enable the students to successfully write and comprehend the elements of the five-paragraph essay in English. When writing, the participants were guided through pre-writing, drafting, revision, proofing, and publishing stages. Pre and post-tests were compared, and the results showed all students successfully wrote and understood with 70% accuracy in the area of writing process.

Two more recent studies examined the relationship between Inspiration and students' writing performances. Lorber (2004) investigated the use of Inspiration, a digital graphic organizer on students' ability to produce expository writing. Data were gathered through pre and post writing scores, surveys, student interviews and meeting field notes with teachers. Students in the intervention group increased significantly when compared to the nonintervention group in their writing grades and ability to organize their ideas. The intervention group reported an increased ability to write and an increased

confidence in their ability to write after receiving instruction and practice using Inspiration software.

Another study investigating the use of Inspiration software coupled with Elluminate (a synchronous software program used in distance education environment or virtual classrooms) was conducted by Brenenan (2006) with five students in grades two and three to improve their writing in a virtual classroom. The students completed two surveys and two writing samples, one prior to the Inspiration training and one after the training. The results revealed an improvement in writing based on the Performance Standard Quick Scale which comprised four scales—not yet within expectations, meets expectations, fully meets expectations, and exceeds expectations. All of the five participants progressed from the meets-expectations scale on their pre-test writing to the fully-meets-expectations scale on their post-test writing. The students produced longer writing with a variety of sentences which could be linked to the ideas generated in their pre-writing activity using Inspiration. The use of graphic organizers showed an influence on students' positive attitude toward writing, but the researcher cautioned that this improvement might be attributed to the rich interactions and instruction in the classroom.

Findings from these studies with L1 learners consistently showed the positive effects of graphic organizing tools or Inspiration software on students' attitude towards writing, their writing process, and the quantity and quality of their writing. Although graphic organizers have been widely used in ESL reading and writing classrooms, there is only one empirical study (Ojima, 2006) examining the effect of graphic organizers on ESL students' writing performances in the area of complexity, accuracy, and fluency. To

date, no studies have been conducted using Inspiration software to support the writing processes of ESL students.

In Ojima's (2006) study, three Japanese ESL learners were taught to use concept mapping during planning. Four writing assignments, two without the use of concept maps and two completed after pre-task planning using concept maps, were analyzed. In addition to text analysis, a questionnaire, retrospective interviews, and logs were conducted. Ojima found that the use of concept maps positively affected the complexity and fluency of the students' in-class writing, though accuracy was not linked to the use of the organizer. The findings demonstrate factors such as individual experience, motivation, and task conditions, had influenced how the three participants used concept mapping to improve their writing.

The reviewed studies in the L1 and L2 learning contexts consistently reveal the positive impacts of graphic organizers (paper or digital) on students' attitude toward writing and their writing performances both quantitatively and qualitatively. Despite these encouraging findings, there is a clear need to further investigate the use of graphic organizers in the ESL writing context.

Second Language Learning Strategies

There is a great deal of literature on learning strategies in second language acquisition (SLA), beginning in 1975 when Rubin observed and interviewed learners of mixed ages in classroom settings. She discovered that good language learners employed different strategies than poor language learners. Rubin suggested that these learning strategies could be shared with other less successful learners to make their learning more effective. Rubin's seminal work has led numerous learning strategy research studies in

defining and classifying learning strategies, describing learners' strategy application on language learning tasks, and validating the effectiveness of learning strategy training (O'Malley & Chamot, 1990).

Language learning strategies (LLSs) have been defined by several researchers. The definitions of language learning strategies include "optional means for exploiting available information to improve competence in a second language" (Bialystok, 1978, p. 71); "techniques or devices contributing to the development of the language system which the learner constructs and affects learning directly" (Rubin, 1987, p. 43); "behaviors, techniques, or actions used by students to gain second or foreign language skills" (Oxford, et. al, 1990, p. 197); "the special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information" (O' Malley & Chamot, 1990, p. 1); and "conscious thoughts and behaviors used by learners with the explicit goal of improving their knowledge and understanding of a target language" (Cohen, 2003, p. 2). Overall, these definitions suggest that learning strategies are "means", "techniques", "devices", "behaviors", "actions", and/or "thoughts" that facilitate learning. In line with Cohen's definition, writing strategies in this study are defined as conscious thoughts, actions, and/or behaviors used by writers to make their writing more efficient.

Not only have LLSs been defined, but they have also been categorized. Rubin (1981) developed two primary strategy categories including strategies that have direct impact on learning (clarification/verification, monitoring, memorization, guessing/inductive inferencing, deductive reasoning, and practice), and process contributing indirectly to learning (creates opportunities for practice and production tricks). Building on Rubins' terms, Oxford (1985) proposed primary strategies and

support strategies; however, her primary strategies include nine categories, such as interencing, mnemonics, summarizing, and practice whereas support strategies include eight subcategories such as attention enhancers, self-management, affective strategies, planning, and cooperation. Each of these subcategories includes every strategy that had previously been cited in the literature on learning strategies (O' Malley and Chamot, 1990). Oxford's extensive list of learning strategies also served as a foundation for developing the Strategy Inventory for Language Learning (SILL), one of the most utilized tools in assessing learner strategies. Another important classification of LLSs was put forward by O' Malley et al. (1985) who divided them into three categories: cognitive, metacognitive, and social mediation strategies. Cognitive strategies refer to mental activities for manipulating the language to accomplish a task; metacognitive strategies are mental activities for direct language learning, such as planning, monitoring and evaluation; and social mediation strategies are activities involving interaction or cooperation for language learning. Later, O' Malley and Chamot (1990) added self-talk to the third category and used the term social/affective in preference to social mediation. In general, language learning strategies have been reported to "often significantly help learners attain greater proficiency by making the learning process easier, more efficient, and more self-directed" (Oxford, et. al, 1990, p. 197). This belief was confirmed by the findings of major LLS studies (e.g. Chamot, 2001; Cohen, 1998; Oxford, 1996) in that learning strategies played an important role in L2 attainment. More specifically, metacognitive strategies are believed to play a significant role in assisting learners to regulate their use of language learning strategies and improve their language learning (Anderson, 2002;

O' Malley & Chamot, 1990; Pintrich, 2002). Research findings indicate that language learning strategies are teachable, and thus, they should be taught to students to make their learning more efficient and/or effective.

Strategy training research. Although there have been great strides in learner strategy research, much less work has been carried out in the area of language learning strategy training. This line of research is interested in training less successful language learners to use LLSs for better performance. Research shows that students often lack awareness of LLSs, and the most efficient way to heighten this awareness is to provide explicit strategy training as part of the curriculum (Cohen, 2003). Previous learning strategy training research employed blind training, informed training, and completely informed training (O' Malley, Chamot, Stewner-Manzanares, Kupper & Russo, 1985).

These training studies intended to:

raise the learner's awareness about learning strategies and model strategies overtly along with the task; to encourage strategy use and give a rationale for it; to offer a wide menu of relevant strategies for learners to choose from; to offer controlled practice in the use of some strategies; and to provide some sort of a post-task analysis which allows students to reflect on their strategy use (Dörnyei, 2006, p. 60).

A considerable amount of SL research on strategy training includes raising awareness (e.g. Feyten, Flaitz & La Rocca, 1999; Flaitz & Feyten, 1996; Meskill, 1991), listening (e.g. McGruddy, 1995; Ozeki, 2000; Paulauskas, 1994), vocabulary (Burgos-Kohler, 1991; Cohen and Apeh, 1980; 1981, Fraser, 1999; Lawson & Hogben, 1998), reading comprehension (Carrell, Pharis & Liberto, 1989; Kern, 1989; Singhal, 1998) and more recently on speaking skills (e.g. Cohen, Weaver & Li, 1998; Dadour & Robbins, 1996; Holunga, 1994; Lam & Wong, 2000). Unfortunately, relatively little research has been conducted on training of writing strategies with second language learners. The few

existing studies have focused on writing strategies that support the drafting and revision stages of the writing process (Cresswell, 2000; Cumming, 1995; Cumming & So, 1996; Ransdell, Lavelle & Levy, 2002; Sengupta, 2000; Zhu, 1994; 1995).

Among the few, for example, Cresswell (2000) trained eight adult Italians to use a three-step procedure intended to develop their self-monitoring skills during their text revisions. This procedure involved 1) raising awareness of the composition process and product; 2) writing marginal annotations; and 3) evaluating annotations. During a period of four weeks, the participants wrote four self-monitored compositions of about 350 words each. The participants were trained to write annotations on the margins of the first two compositions whereas the written annotations appeared on the margins of the last two compositions were analyzed for their attention paid on content and organization. The written tasks consisted of opinion articles and letters to the newspaper editor. Cresswell found that the training effectively developed self-monitoring in students and resulted in an increase of students' attention on content, organization and translation (e.g. word choice) in addition to linguistic concerns such as grammar and spelling. Cresswell concluded that self-monitoring technique could increase learner autonomy and teacher responsiveness to individual needs when they learn how to write.

Another study related to writing strategy training was conducted by Sengupta (2000), using a comparative study design. Investigating how explicit revision-strategy instruction influenced English language learners, the researcher divided 118 female secondary-school students enrolled in Hong Kong into four groups: two experimental and two control groups (one control group was excluded before the training). The participants in the experimental groups were trained to revise their first drafts, with the more reader-

friendly approach and the concept of good composition in mind while those in the control group received no training but wrote pre and post-writing. The compositions were rated holistically, and the composition scores of experimental groups were found to be greater than those of the control group. Students' perceptions were also examined through the use of questionnaire and eight participants were interviewed. The data from these data sources showed students' positive views towards the revision training. They also thought that knowing the writing purpose and their readers was useful in revising their texts. Sengupta concluded that revising drafts was an effective strategy and suggested that teachers considered incorporating explicit instruction of multiple drafting in their classrooms as it may contribute towards developing an awareness of discourse-related features in second language writing.

Strategy training frameworks. In *Strategy Training for Second Language Learners*, Cohen (2003) pointed out that, to date, there has been no empirical evidence to determine a single best method for conducting strategy training. The author listed three strategy training frameworks proposed by Pearson and Dole (1987), Oxford, Crookall, Cohen, Lavine, Nyikos and Sutter (1990), and Chamot and O' Malley (1994). Pearson and Dole (1987) outlined the strategy training framework they tried out with L1 elementary children in a reading class. The framework consists of 1) teacher explicitly explains strategy use and importance; 2) teacher guides students to use strategies; 3) teacher helps students to identify strategies and select which to be used; 4) students practice using strategies independently; and 5) students apply strategies to new tasks.

A more elaborated strategy training framework was outlined by Oxford et al. (1990). Their training framework is as follow: 1) set the scene and explore attitudes,

expectations, and current strategies; 2) choose strategies; 3) consider strategy training integration; 4) focus directly on affective issues (motivation, self-esteem, etc.); 5) prepare materials and activities; 6) conduct completely informed strategy training; 7) evaluate strategy training; and 8) revise strategy used (learners).

The third training framework, which was developed by Chamot and O' Malley (1990), consists of a four-stage problem-solving process: 1) planning (students plan ways to approach a learning task; 2) monitoring (students self-monitor their performance by paying attention to their strategy use and checking comprehension); 3) problem solving (students find solutions to problems they encounter; and 4) evaluation (students assess the effectiveness of strategy use applied to a learning task).

In addition to these frameworks, Cohen (2003) urged strategy trainers to take into consideration students' needs, available resources (e.g. time, money, materials, availability of teacher trainers, and feasibility of providing training into consideration). In the present study, certain suggestions such as providing explicit strategy training, incorporating strategy training into writing instruction, and applying the trained strategies to new tasks were added to the chief training framework guided by Bereiter and Scardamalia's (1987) procedural facilitation which includes 1) identifying a self-regulation function that appears to work in expert performance; 2) describing the self-regulatory function in terms of mental operations as explicitly as possible; 3) creating cues or routines that minimize demands on mental resources; and 4) providing external supports or teachable routines for reducing the information-processing burden of mental operations. In effect, the design of the writing-strategy training for the current study consists of the following:

- 1) identify and select successful writing strategies employed by expert writers (considering writing purpose, audience, generating ideas via brainstorming, and organizing ideas);
- 2) describe planning, in terms of mental operations, as it creates and maintains interactions between rhetorical and content spaces;
- 3) create guiding questions concerning the purpose for writing (e.g. why am I writing? How should I present my ideas?) and consideration of audience (e.g. what is my reader? What does the reader know about my topic? What might the reader want to know about my topic) to scaffold students during planning;
- 4) train students to use idea graphic organizers in Inspiration 6, which are provided as external support for minimizing information-processing load of students' mental operations.

The strategy training in this study complemented the writing instruction in the targeted writing course and was delivered explicitly to students. The students had an opportunity to apply the writing strategies to writing tasks. Additionally, this strategy training used a computer as the primary training tool in delivering this strategy instruction as the computer has been found to be an effective learning tool and has had positive impacts on second language learners' attitudes and their work (Akyel & Kamisli, 1999; Neu & Scarcella, 1991; Odenthal, 1992; Pennington, 1995). Moreover, the content of strategy instruction delivered via computer was standardized and used by all of the classes that participated in this research. The training modules and instructional modules were uploaded for students' access outside class time.

To conclude, this study aimed to train ESL student writers to use specific writing strategies: identifying writing purpose and audience and generating and organizing ideas, during the planning stage, guided by procedural facilitation. Such strategies have been reported as having a potential to have positive effects on students' writing quantity and quality in L1 studies but have not yet been the focus of L2 writing research. As a result, there is a clear need to investigate this issue quantitatively and qualitatively through the use of a mixed methods design.

Chapter 3 -- Method

The previous chapter reviewed related literature on second language writing, procedural facilitation, second language learning strategies, and writing strategy training. This chapter describes the design of the current study, participants, setting, quantitative and qualitative research procedures, treatment, instruments, data collection, and data analysis.

The present study aimed to investigate the effects of pre-writing strategy training guided by computer-based procedural facilitation on the writing strategy use, and the quantity and quality of the writing produced by ESL students enrolled in intermediate writing classes in an intensive English program (IEP) in a large metropolitan research university in the southeastern United States. This research sought the answers to the following research questions:

1. Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the participants' use of writing strategies when writing opinion letters?
2. Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the quantity of writing produced by the participants?

3. Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the quality of writing produced by the participants?
4. How do the participants approach the task of writing an opinion letter?

Research Design

This research study utilized a sequential mixed methods design or a “Quan/Qual sequence” (Tashakkori & Teddlie, 1998), with the initial quantitative phase of study followed by a qualitative phase. In the first phase, a quasi-experimental design, “a type of experiment in which research participants are not randomly assigned to the experimental and control groups” (Gall, Gall & Borg, 2003, p. 634) was utilized. Then, a follow-up qualitative study utilizing student interviews was conducted. The study made use of a convenience sample composed of ESL students enrolled in intermediate writing classes in an intensive English program (IEP), focusing on English-for-academic purposes, located in a southeastern research university in the U.S. The decision to recruit participants at this educational setting was based on three reasons: easy access to data collection, a well-structured program, and diverse student population. First, as a graduate of the M.A. program in the Applied Linguistics linked with this IEP and an experienced teacher there, the researcher was familiar with the institute regarding its mission, goals, history, administration, curriculum, and students. The mission of this IEP is to serve as a research and teaching laboratory for graduate students in the M.A. program in Applied Linguistics and those in the Ph.D. program in Second Language Acquisition and Instructional Technology; therefore, the researcher could easily seek approval for data collection. In addition, this IEP was established in 1978 and has been accredited by the

Commission on English Language Program Accreditation (CEA) since 2002. The CEA, a specialized accrediting agency conducting reviews in the U.S. and internationally, provides “a means for improving the quality of English language teaching and administration through accepted standards.” This institute’s accreditation ensured its systematic operation regarding its administrative staff, teaching faculty, curriculum, students’ level placements, students’ assessments, etc. It could also be inferred that its operation and standards were in line with those of other CEA accredited intensive English programs in the U.S. Last, the IEP student population is generally diverse, with students representing 30-35 countries. The majority of the students come from Middle-eastern countries, Southeast Asia, and South America, reflecting the general ESL student populations in a similar educational setting in the U.S.

There were 181 students enrolled in Spring 2008 in the IEP, representing 32 different countries. The majority of them were from Korea (35), Saudi Arabia (28), Vietnam (16), Colombia (13), China (9), Venezuela (9), Japan (8), Angola (7), Taiwan (7), Turkey (6), Kuwait (4), and Morocco (4). Of the 181 students, 95 of them were females and 86 were males with the age range of 18-45 years old. The highest population in the current semester was in level three, consisting of four different sections (two groups studying in the morning and two groups in the afternoon) with a class size of approximately ten students. The schedule for students studying during morning hours was from 8:00 a.m. to 12:15 p.m. on Mondays through Fridays. In contrast, the students studying in the afternoon began their first classes at 12:30 p.m. and ended the last classes at 4:45 p.m. from Mondays through Thursdays. On Fridays, classes started at 8:00 a.m. and finished at noon.

Due to schedule constraints, intact classes were used and randomly assigned either as a control or an experimental group by flipping a coin. The control group received some writing instruction regarding paragraph writing, essay writing, and opinion essays whereas the experimental group were trained to use pre-writing strategies related to the purpose and audience for writing, generating ideas via brainstorming, and organizing ideas during the planning stage of writing. In addition, the experimental groups were also trained to use Inspiration 6 as an idea generating and organizing tool. The instructional or training modules for both groups were delivered through PowerPoint presentations by their Academic Preparation 3 (discussed in the Setting section) teachers. Online pre-writing strategy questionnaires and opinion letters were used as measures collected at pre-test and post-test. The data collection and training period lasted six weeks. The independent variable was the computerized pre-writing strategy instruction, and the dependent variables included participants' strategy use, writing quantity, and writing quality.

Participants for Quantitative Study

Participants of this study were 41 intermediate-level ESL students in four intact classes of Academic Preparation 3, a reading and writing course offered by the IEP. Prior to being assigned to one of five levels ranging from one to five, representing beginner, low-intermediate, intermediate, high-intermediate, and advanced respectively, IEP students were required to take written placement tests consisting of the Listening and Structure sections of the Comprehensive English Language Test (CELT), the Vocabulary and Reading Sections of Michigan Test of English Language Proficiency (MTELP), and

a 20-minute timed writing test. The Listening, Structure, Reading, and Vocabulary sections of the placement tests were scored based on the following bands:

Levels	CELT (Listening & Grammar)	MTELP	
		Vocabulary	Reading
I	0-29	0-5	0-2
II	30-49	6-12	3-4
III	50-69	13-20	5-7
IV	70-84	21-30	8-12
V	85-100	31-40	13-20

Unlike the multiple-choice written placement tests, writing samples were not scored but were considered when adjustments to level assignments needed to be made. Students whose scores fall between 50 to 69 on the Listening and Grammar sections of CELT, and 13 to 20 on the Vocabulary and 5 to 7 on the Reading sections of MTELP would be placed in level 3.

In general, students who are placed in level three are able to understand a variety of language used by teachers in class fairly well. They understand the general idea of much of what they hear outside class and are able to communicate about general topics with some degree of success. They are able to perform their routines and handle most situations in English quite well. They begin to think more in English and begin to speak more fluently. In relation to writing, they begin to write meaningful paragraphs with topic

sentences and show attention to simple paraphrasing and sequencing. Appendix 1 shows ELI Proficiency Scale for the spring semester of 2008.

After the students' language proficiency level was identified, they were assigned to classes, balancing the class diversity in terms of first language and gender. Generally, there was more than one section for students at the same level, and level-three students had an option to study either during morning hours (8:00 a.m. – 12:15 p.m.) or afternoon hours (12:30-4:45 p.m.). In the spring 2008 semester, there were two morning classes and two afternoon classes taught by four different instructors who participated in this study. One of the two morning groups was randomly assigned to be a control group and the other was an experimental group. The same procedure was applied to the afternoon classes. This meant there was one control group in the morning and one control group in the afternoon. Likewise, there was one experimental group in the morning and one in the afternoon.

The control group consisted of 22 students initially, but three Korean students who were part-time students and participated in the pre-test left the program to return home after six weeks. Consequently, there were 19 students who remained in the control group. Among them, there were 9 female and 10 male students whose age range was between 19-45 years old. Their first language background comprised Arabic (8), Chinese (1), Japanese (2), Korean (4), Spanish (3), and Thai (1). Six of them obtained high school diploma, ten received a bachelor's degree, and three completed a master's degree. They reported having studied English for 3 to 15 years and having used computers for 5 to 15 years.

The experimental group consisted of 24 students at the beginning of the study, but two Korean students who were part-time students and participated in the pre-test left the program to return home after six weeks. At the end, there were 22 students in the experimental group with 11 male and 11 female students whose age range was between 19-45 years old. Their first language background consisted of Arabic (5), Chinese (3), Marati (1), Japanese (1), Korean (2), Spanish, (6) Umbundu—an official language of Angola (1), Vietnamese (2), and Tajik—an official language of Tajkistan (1). Eight participants reported having a high school diploma, ten having a bachelor's degree, and four having completed a master's degree. They had studied English between 3 to 15 years and had used computers between 5 to 15 years.

Participants for Qualitative Study

Participants for semi-structured interviews were six students (three from control and three from experimental groups) who participated in the quasi-experimental study. The initial selection criteria of the interviewees were based on their writing quantity and quality scores shown on their pre-tests. During the training periods, the researcher sat in all of the classes, especially when the instructors delivered the treatment modules to their students. Due to a schedule constraint (two groups studying at the same time), the researcher took turns in observing the classes, and arranged for the class that she was not able to observe to be video-taped. The researcher made note of the students' attendance records and their participation in the writing instruction or the pre-writing strategy training. Regular discussions occurred between the researcher and the instructors regarding the instructional or training modules and the students' participation and motivation. Based on these criteria (i.e. writing quantity scores, writing quality scores,

and student attendance) twelve students (six from each group) were identified as potential candidates for interview participants. The final selection criteria consisted of the levels of gain scores, gender, home country, native language, experience of computer use, oral English language proficiency, and their availability for the interviews. Based on the gain scores, the researcher created a list of pairs for each level (high, mid, low) for both groups and asked for suggestions from the instructors. Finally, three students from the control group--Som, Reema, and Sandy (pseudonyms), and three students from the experimental group --Isabel, Humberto, and Vivian (pseudonyms), were invited to an individual face-to-face interview with the researcher. The interviews were scheduled based on the participants' availability and within two days after the post-treatment sessions. The participants' background information in relation to home country, native language, highest level of education, age, years of English study, years of computer use, and work experience were elicited through a short survey prior to the face-to-face interviews.

In the control group, two females (Reema and Sandy) and one male (Som), represented three countries, Kuwait, Taiwan, and Thailand. Their native languages included Arabic, Chinese, and Thai. Their ages ranged from 19 to 26 years old. Reema received a high school diploma whereas Sandy and Som obtained a bachelor's degree. They had studied English, on an average, for 11.6 years and had used the computer for 10 years. Of the three participants, Sandy had some work experience in an English language training company in Taiwan. Her job provided opportunities for her to communicate in English, but her dominant skills were speaking, listening, and reading. At her job, Sandy was required to write in English only at the paragraph level and no longer than a page.

Similarly, the experimental group consisted of two females—Isabel and Vivian, and one male, Humberto. They came from Venezuela, China, and Dominican Republic, respectively. Their native languages included Spanish and Chinese. Isabel and Vivian earned an undergraduate degree, and Humberto obtained a high school diploma. These participants had studied English for an average of 3.3 years. Regarding computer use, the participants reported having used computers for at least 7.3 years. Isabel was an elementary teacher while Vivian was a documentary film editor. Humberto did not have any work experience. Table 3-1 summarizes the background information of the participants in the control and experimental groups.

Table 3-1 Background Information of Six Interviewees

Pseudonym	Participants					
	Control			Experimental		
	Reema	Sandy	Som	Isabel	Humberto	Vivian
Country	Kuwait	Taiwan	Thailand	Venezuela	DR	China
1 st language	Arabic	Chinese	Thai	Spanish	Spanish	Chinese
Gender	F	F	M	F	M	F
Age	19	26	23	36	19	26
Education	HS	BA	BS	BA	HS	BA
Years of Eng	13	10	12	4	2	7
Years of com	10	10	10	12	3	7
Work ex	N	Y	N	Y	N	Y

Key: DR = Dominican Republic

F = Female, M = Male

BA = Bachelor of Arts, BS = Bachelor of Science degree, HS = High School

Years of Eng = Years of English studies

Years of com = Years of computer use

Work ex = Work experience

Setting

The IEP offers an intensive English-for-Academic-Purposes program to international students, most of whom intend to pursue academic studies in U.S. universities. The institute offers classes during three 15-week semesters (fall, spring and summer) and a one-month mini-institute during summer annually. The overview of the IEP curriculum can be found in Appendix 2. On average, the IEP has approximately 200 students during fall and spring semesters and about 150 students during summer. There are five levels ranging from beginning (Level One) to advanced (Level Five) in the program. The class size is usually capped at 15 students. Those in the mid-level (Level Three) are usually the largest population in the institute. By and large, there is more than one section of the same level, and these different groups are usually taught by different instructors who follow the same syllabus and use the same textbooks. A regular level-meeting led by a level coordinator is a place where instructors teaching the same level can discuss lesson plans, prepare assessments, and share concerns and learning progress of their students. Instructors are encouraged to share instructional ideas and materials and brainstorm solutions for problems that occur in the classroom. There is also a monthly general IEP faculty meeting where in-service workshops are conducted to professionally develop the faculty. The IEP Assistant Director also conducts a new faculty and intern orientation one week before the new semester begins, informing the faculty of the IEP's

mission, goals, policy, curriculum, as well as distributing course objectives and textbooks to them.

In Spring 2008, Level-Three students studied three core courses which were Grammar, Academic Preparation, and Academic Interaction, and could choose to study two elective courses including Preparation for TOEFL, SAT, Pronunciation & Drama, and Novel. The details of the courses provided below were based on the course outlines and informal interviews with the IEP Curriculum Coordinator and some course instructors during Spring 2008.

In Grammar 3, using *Understanding and Using English Grammar A* (3rd ed.) by Azar, students learned and practiced using complex grammatical forms including the perfect tenses and the passive voice through speaking and writing tasks. By the end of the semester, they were expected to respond appropriately in a complex conversational interaction with a partner; write two to three paragraphs on a given topic using the target grammar correctly; correct target grammatical errors on a piece of writing; and present a clear 5-6 minute oral presentation on a familiar topic using target grammar appropriately.

In Academic Preparation 3, students improve their academic reading and writing skills through a group research project, extended essays, other academic writing assignments, class readings, etc. More specifically, students read and responded to academic material, critically applied research from different sources to answer questions or solve problems, and improved academic vocabulary and writing skills through projects and other written assignments, such as writing a summary of selected reading, writing short reaction papers responding to a writing prompt or a video clip, synthesizing several readings to answer given questions, etc. During the portfolio writing project, students

carefully planned, wrote, and revised under the teacher's guidance. The process approach to writing, consisting of planning, drafting, revising, and editing, is employed by most of the IEP writing instructors. Regarding the writing project, students could select their own theme or choose one offered by the teacher. Throughout the semester, students also wrote a reflection journal with multiple entries with a total of about 1,000 words per semester. The entries included their thoughts and feelings on the readings, class dynamics, assignments, life in the U.S. or a combination of any of these topics. These entries were produced on a weekly basis, and gradually increased in size (number of words per entry) and were read and responded to by their peers and teachers.

In Academic Interaction 3, students developed academic listening and speaking skills through lectures, discussions, writing, and presentations on contemporary political and social topics. To meet course goals, students learned to take extended and complete notes from class lectures, facilitate group discussions, produce a newspaper article for a class newspaper, and present a 10-minute presentation using PowerPoint or Movie Maker software programs.

All of the elective courses offered to Level-Three students shared the same strand goals, which were learning detailed information about specific content and using English for a real-world purpose. In TOEFL iBT, these intermediate students familiarized themselves with the format of the TOEFL iBT, learned test-taking strategies specific to this TOEFL format, and practiced taking the test. Classroom activities include reading authentic source material (e.g. newspaper articles, book reviews, book excerpts, encyclopedia entries), speaking and writing about the reading, listening to authentic examples of formal and informal spoken English, conducting oral interviews of peers,

faculty, or family and following up with a written summary of the information, writing short essays based on a question prompt. Similarly, the students familiarized themselves with the format of SAT, learned test-taking strategies specific to SAT, and practiced taking the critical reading section of the SAT exam in the Preparation for SAT course.

Although sharing the same strand goals as the two previously-mentioned elective courses, Drama focused on improving pronunciation and comprehension of vocabulary and idioms through the use of dramatization, improvisation, and body language. Students acted out idioms and phrasal verbs, improvised scenes, wrote, performed and videotaped a mini- soap opera, and critiqued peers' performances.

In Novel, students developed vocabulary, reading, and writing through the use of authentic novels. More specifically, students created and maintained a detailed vocabulary log, summarized chapters and analyzed characters, wrote an analysis paper on some aspect of the novel, and wrote a book report or letter to the author.

In Academic Preparation 3 where the current study was conducted, students met three times a week, each for one hour and 50 minutes. Currently, there were four sections of approximately ten students each, taught by four different teachers. Of these four teachers, three were three full-time IEP faculty members and one instructor who was a doctoral student in the Second Language Acquisition and Instructional Technology program. All of these teachers had earned an M.A. degree in teaching English as a second language or a foreign language and have had some previous teaching experience in ESL and/or EFL contexts. Their technological skills were diverse, but all of them received in-service training related to technology integration in the classroom on a regular basis (e.g. monthly). Typically, the classes were conducted in either regular classroom equipped

with whiteboards, overhead projectors, TVs, and video recorders, or smart classrooms where networked computers and video projectors, in addition to previously-mentioned technology, were available. These instructors had an option to use the IEP networked-computer lab when it was needed. The computer lab was equipped with 38 computers with portable head-phones for instructor and student use. A projector was also available for instructor use.

The Textbook

Currently, *Quest 2: Reading and Writing*, authored by Pamela Hartmann (2007) was used as a textbook for the Academic Preparation 3 course. The authors integrated reading and writing skills within four themes, namely, Business, Art, Psychology, and Health. Each chapter consists of reading skills including reading strategies and writing skills including the mechanics of writing, writing strategies, critical thinking strategies, and test-taking strategies. In the portion of writing assignments, a series of writing process (e.g. choosing a topic, gathering information, organizing material, writing the paragraph, editing, and rewriting) is presented to guide students through when writing.

The Researcher's Roles

The researcher of this study is a native speaker of Thai who has lived in Thailand for most of her life, with the exception of the time when she pursued her graduate degrees in the U.S. She grew up in a Chinese-Thai family and community and started learning Chinese as a foreign language in a formal educational setting when she was in the first grade and continued learning this foreign language for four years. At the age of 11, she began studying English as a foreign language and has continued to study and/or acquire it through formal and informal learning environments. The researcher received a Bachelor's

degree in English Education from Ramkhamhaeng University in Bangkok, Thailand and a Master's degree in Teaching English as a Second Language from the University of South Florida (USF) in Tampa. While pursuing her M.A., she worked as an office assistant and later a teaching assistant in the English Language Institute (ELI). After graduation, she returned to Thailand and taught English as a foreign language at the tertiary level for 8 years. She was responsible for coordinating and teaching academic writing courses to Thai students, most of whom perceived English academic writing skills as difficult to acquire. Her interest in helping her students acquire these writing skills more efficiently and in computer-assisted language learning led her to pursue a doctoral degree in Second Language Acquisition and Instructional Technology (SLA/IT) at USF. During the first three years of her doctoral studies, she worked as a graduate teaching assistant at the ELI, teaching reading and writing courses to international students. She also collaborated with other instructors in several research project related to academic writing and technology.

In this study, the researcher played several roles, for example, as an instructional/training modules developer, a teacher trainer, and a non-participant observer. Prior to developing the modules, the researcher had observed multiple Academic Writing courses over a period of one semester, reviewed textbooks for Academic Writing courses, and discussed ideas related to the content of the modules with Academic writing instructors and the ELI curriculum coordinator. After the modules were developed, the course instructors and one expert in SLA writing reviewed them. They provided feedback for a revision of the modules which were used in this research study.

During the data collection of this study, the researcher introduced this research and explained its purpose to the instructors, the course coordinator, and the ELI curriculum coordinator. To ensure that the instructional/training modules were consistent with the course goals, she discussed the writing modules and tasks and brainstormed for writing topics with the course instructors. She revised the modules according to the instructors' feedback. She also trained them in using the modules answering their questions both face-to-face and via electronic mail. She also trained the experimental-group to use Inspiration 6 and assisted them while they trained their students to use this idea organization tool.

Prior to the training sessions, she coordinated with all four instructors the scheduling of computer lab time and setting up the instructional/training modules. During classes, she played the role of a non-participant observer, offered assistance to the instructors when needed, and ensured the consistency of the instructional/training tasks by offering suggestions to and answering questions from the instructors.

Research Procedures

This current study utilized a sequential mixed method design beginning with a quasi-experimental design in the quantitative phase followed by student interviews to collect qualitative data. The quantitative stage was conducted during a period of six weeks of the spring semester in 2008, and the qualitative stage occurred shortly after the post-treatment session.

Quantitative stage procedures. Step 1: One week prior to the first week of Spring 2008 and after IRB approvals, the researcher asked for permission to recruit participants for this research with the IEP curriculum coordinator. Next, she met with all of the IEP

instructors teaching Academic Preparation 3 and a Coordinator for Academic Preparations courses to introduce this research study and asked for their participation. During the meeting, the research timeline and PowerPoint instructional/training modules were proposed and reviewed. Lesson plans were also drafted. The intact classes were randomly assigned by flipping a coin. All of the experimental-group instructors were trained to use the pre-writing strategy training modules and Inspiration 6 software program whereas those who taught the control groups were trained to deliver the PPT instructional modules on general academic writing. Further details can be found in the Treatment and Training Sessions sections.

Step 2: On Thursday of week 2, the pre-treatment sessions were conducted. All of the participants in the morning and afternoon classes were asked to write an opinion letter followed by completion of the online writing strategy questionnaire. They completed both tasks in one hour and fifteen minutes.

Step 3: On Thursday of week 3, the treatment began. The teachers who taught the experimental groups presented the PowerPoint presentation on considering purpose and audience (more detail can be found in the Experimental Group Treatment section). Following the training, the students were asked to think about the purpose for writing and an intended audience for the following writing prompt: “Describe your favorite imported products. Why do you like them?” The students had an opportunity to discuss their thoughts with their peers and teacher through group work and whole class formats. Afterwards, they wrote a descriptive paragraph based on the mentioned writing prompt which was consistent with the writing task in the textbook chapter.

On the same day, the instructors of the control groups presented the PPT presentation on “Paragraphs” (more detail can be found in the Control Group Treatment section). After finishing the PPT presentation, students were asked to write a descriptive paragraph responding to the same writing prompt used by the experimental groups.

Step 4: On Thursday of week 4, the instructors of the experimental groups delivered the training module on “Generating and Organizing Ideas” to students. Following the PPT presentation, the students were trained to do some planning via Inspiration 6 based on the writing prompt about their recent dreams. The teacher conducted the training following the same procedure described in the Training Sessions section. After the Inspiration 6 training, the students were asked to generate and organize ideas based on the given writing prompt and to write an essay using the idea map as a guide.

At the same time, the control-group instructors conducted the PPT presentation on “Essay Writing.” After the presentation, the students were asked to write an essay responding to the same writing prompt assigned to the students in the experimental group.

Step 5: On Thursday of week 5, the experimental-group instructors conducted the PPT presentation on “Organizing Your Argument” adapted from the one developed by Purdue University Writing Lab. After the presentation, the students were asked to write an opinion essay on the following topic: “Some people say that the Internet is one of the greatest technological developments in human history. Do you agree or disagree?” Prior to writing, the students generated and organized their writing ideas via Inspiration 6.

Similarly, the control-group instructors delivered the PPT presentation on “Opinion Essays” and assigned their students to write an opinion essay on the same topic assigned to the experimental groups. However, they did not have access to the Inspiration 6 training.

Step 6: On Thursday of week 6, the post-treatment sessions were conducted. All of the participants were asked to write a post-treatment opinion letter and followed by completing the online writing strategy questionnaire. They had one hour and fifteen minutes to complete both tasks.

Qualitative stage procedures. During week 6 and after the post-treatment sessions, six students, three from the control group and three from the experimental group, were invited to a semi-structured interview intended to discover how they approached the task of writing an opinion letter. Details about the sample selection for the interviews can be found in the Student Interviews section. An interview guide (Appendix 5), consisting of 19 interview questions, were used. The first six questions were conducted through a short survey to ensure time efficiency. The interviewees were asked to fill out this survey on paper prior to face-to-face interviews guided by the remaining 13 interview questions. The researcher took notes during the interview in addition to audio-recording it. Table 3-2 summarizes the research procedures of the current study.

Table 3-2 Summary of Research Procedures

Week	Control Group	Experimental Group
1	<ul style="list-style-type: none"> • Instructor orientation • Recruitment of participants • IRB documentation • Group assignment 	
2	<ul style="list-style-type: none"> • PPT: Paragraphs 	<ul style="list-style-type: none"> • PPT: Writing Purpose & Audience
3	<ul style="list-style-type: none"> • PPT: Paragraphs 	<ul style="list-style-type: none"> • PPT: Writing Purpose & Audience
4	<ul style="list-style-type: none"> • PPT: Essay Writing 	<ul style="list-style-type: none"> • PPT: Brainstorming & Organizing ideas • Idea Graphic Organizer (Inspiration 6)
5	<ul style="list-style-type: none"> • PPT: Opinion Essays 	<ul style="list-style-type: none"> • PPT: Organizing Your Argument • Inspiration 6 continued
6	<ul style="list-style-type: none"> • Post- treatment: Opinion letter writing # 2 & Writing questionnaire • Student interviews (3 participants) 	<ul style="list-style-type: none"> • Post-tests: Opinion letter writing # 2 & Writing questionnaire • Student interviews (3 participants)

The Experimental-Group Treatment

Informed by previous research literature in the fields of L1 and L2 writing, the researcher focused on pre-writing strategies related to 1) the purpose for writing, consideration of audience, 2) generating ideas via brainstorming, and 3) organizing ideas because these strategies have been shown to make a difference in terms of students' writing quality. Although most ESL writing textbooks include these strategies as support during the planning stage of the writing process, many writing instructors often place more emphasis on strategies used for drafting (e.g. writing on computers) and revising texts (e.g. peer and teacher feedback). When pre-writing strategies are addressed in class, their applications are not explicitly required by the instructors. This means students have some freedom to plan or not to plan before writing, and some of them may choose not to and proceed directly to producing text, particularly those who compose via computers. Research has shown that computer writers do less planning and move more quickly toward text production than pen-and-paper writers (Hass, 1989).

To examine the effects of the pre-writing strategies in relation to consideration of the writing purpose and audience and generating and organizing ideas, the participants of this study were trained through three training modules to use these pre-writing strategies explicitly. The researcher compiled the content of the training modules from several intermediate level writing textbooks that have been used in writing courses at this program. These included *Effective Academic Writing 2* by Savage and Mayer (2005), *Introduction to Academic Writing* by Oshima and Hogue (2007), *New Directions: Reading, Writing, and Critical Thinking* by Gardner (2005), *the Process of Composition*

by Reid (2000), *Quest 3: Reading and Writing* by Hartmann and Blass (2007), and ESL writing resources from Purdue Online Writing Lab (<http://owl.english.purdue.edu/>).

The pre-writing strategy training modules (namely, considering writing purpose and audience, generating and organizing ideas, and organizing your arguments) were used as treatment given to the participants in the experimental group. The first two instructional modules were developed using PowerPoint (PPT) presentations by the researcher whereas the last module was adapted from the presentation created by Purdue Online Writing Lab (<http://owl.english.purdue.edu/>). PowerPoint, a software program included in the Microsoft Office package, is a powerful presentation tool that includes text, sound, and images. Such features provide multi-sensory stimulation to students by addressing different learning modalities such as visual, auditory, kinesthetic, etc. (Kroll & Reid, 1994). It is also user-friendly and facilitates greater student control over learning, allowing students to learn at their own pace. Since PPT software is readily available in the IEP computer lab and other labs on campus, no extra cost and time of the software installation was needed. The three training modules used with the experimental groups are described as below.

The “Consideration of Writing Purpose and Audience” training module described three basic principles for successful academic writing which include 1) identifying a purpose for writing; 2) always writing for an audience; and 3) writing about what you know. It listed various reasons for writing, for example, to inform, to entertain, to persuade, to call to action, and etc. The module further explained the rationale for considering the writing purpose such as to write a clear thesis, to select relevant details to support the thesis, to organize writing, and to select the writing form and style. The

training module also provided three examples of the writing prompts and writing purposes. For instance, one writing prompt stated “Films can tell us a lot about the country in which they were made. What have you learned about a country from watching its movies?” The writing purpose here was to inform what you have learned from watching a particular movie. After practicing identifying the writing purpose of two additional writing prompts, the students were taught to consider their audience based on education, age, interests, knowledge towards the writing topic, and etc. The reasons why the students should consider their audience were also discussed. These reasons included to approach a writing task more effectively, to select relevant main ideas and important details, to organize the writing, and to select an appropriate writing style. Three examples were provided and followed by three practice exercises for the students to discuss the audience with their peers. At the end, the teachers debriefed the concept of consideration of writing purpose and audience, and the students had an opportunity to think about their writing purpose and audience based on the following writing prompt: “Describe your favorite imported products. Why do you like them?” After their consideration of writing purpose and audience, they wrote a descriptive paragraph in class.

The “Brainstorming and Organizing Ideas” training module described how brainstorming ideas was done on paper, which was thinking and writing down any words or ideas that come to mind. Afterwards, the ideas were organized into categories. After the students practiced brainstorming and organizing their ideas on paper, they were introduced to Inspiration 6, a graphic organizer software program that supports the students in generating and organizing their writing ideas into a concept map or web, allowing them to see their visualized ideas and their relationships on the computer screen.

The RapidFire feature in the program is designed to allow users to quickly brainstorm ideas and organize them with ease. Other features such as Word Guide and Spelling Check are to help to facilitate the students' use of appropriate words and correct spelling. While brainstorming ideas, students were prompted to think about the writing purpose and audience using the following guiding questions: "Why am I writing?" "How should I present my ideas?" Likewise, the following guiding questions: "Who is my reader? Age? Education? Interests? What does the reader already know about my topic? What might the reader want to know about my topic?" These thinking prompts were prompted by their instructors to stimulate students' self-questioning during planning before writing (Bereiter & Scardamalia, 1987). After idea generation and organization, the students had an option to print out their visualized ideas or to transfer them to Microsoft Word and use it to guide them while writing. The writing assignment after this training session was to describe one's recent dream, a writing topic in line with the current chapter in the textbook on States of Consciousness. Figure 3 shows an example of student's idea map created via Inspiration 6.

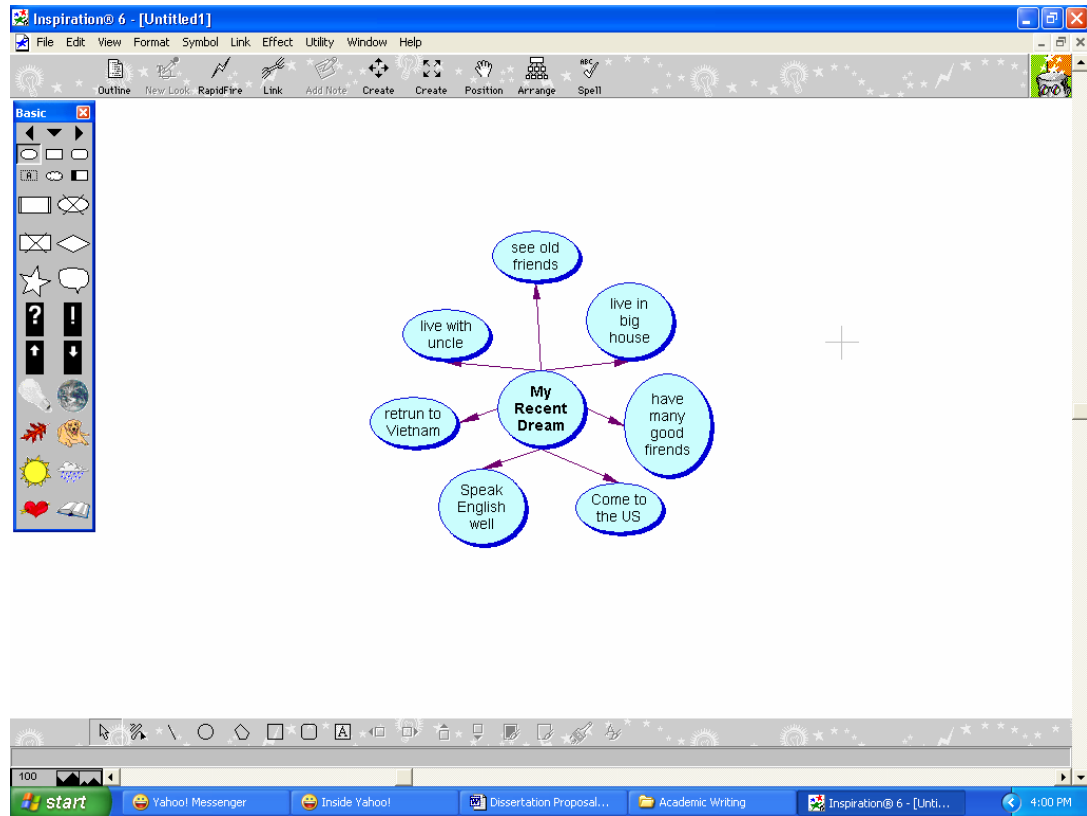


Figure 3: Student’s Idea Map Created Using Inspiration 6

The last training module for the experimental groups was “Organizing Your Argument” adapted from the Purdue University Writing Lab (<http://owl.english.purdue.edu/>). The module explained what an argument was and gave the reasons why organization was important in building an argument. It also presented the organization of an argument: an introduction (including a thesis statement), body paragraphs that contained topic sentences and main points as well as the opposition, and a conclusion. The module further described how to construct and organize the introduction, the body paragraphs, and the conclusion. The presentation ended with the visual of the essay outline. After the presentation, the experimental groups were also trained to use the outline tool available on Inspiration 6, which they could begin by brainstorming their writing ideas in the form of a concept map and converting it into an outline by simply

clicking on the outline icon. After practicing using the outline tool, the students were given a choice to use either the concept map or the outline to brainstorm and organize their ideas while planning to write an essay on the following prompt: “The Internet is one of the greatest technological developments in human history.” Do you agree or disagree?

The three pre-writing strategy training modules described above were reviewed by one SLA-writing expert whose feedback received was used for module revision. The revised modules were further reviewed by the four course instructors, and the writing tasks were added to them. The researcher also piloted the modules with four intermediate-level ESL students who did not participate in this study in a computer lab. They reported having no difficulty understanding the modules and the writing tasks. Similarly, an expert in the Inspiration software program was consulted for the development of Inspiration 6 worksheets. This expert, who has trained faculty and students to use the Inspiration software for several years, referred the researcher to the information available in the Help section provided by Inspiration software, Inc. The researcher adjusted the readability level of the information and the procedure in generating and organizing ideas to suit the participants in this study. The worksheets were reviewed by the course instructors and pilot-tested with the four students who participated in the pilot-testing of the training modules. The students were able to follow the worksheets in brainstorming and organizing their writing ideas with ease.

The Control-Group Treatment

At the same time, the control groups received general writing instruction on paragraphs, essay writing, and opinion essays respectively. The content and sequence of these presentations had been determined as relevant and appropriate to the students in this

writing course by all of Academic Preparation III instructors and one expert in SLA writing. The first two presentations were developed by the researcher, but the last one was adapted from that created by Purdue Online Writing Lab (<http://owl.english.purdue.edu/>). With the exception of content, all of these presentations were identical to those designed for the experimental group in terms of writing assignments, slide design, and colors. These presentations were designed and sequenced to educate students with general academic writing, starting from paragraphs, moving on to essay writing, and ending with opinion essays. More specifically, the Paragraphs presentation provided or reviewed some basic instruction and advice regarding the creation of well-structured and coherent paragraphs. It began by explaining what a paragraph was, discussed a topic sentence, and provided an example of the topic sentence. Supporting sentences and an example paragraph were presented next followed by a concluding sentence with an example. Types of paragraphs were also presented. For instance, a narrative paragraph told a story; a descriptive paragraph described someone or something; and a persuasive paragraph convinced the audience. The presentation also discussed unity and coherence, and it ended with a summary of the presentation. Afterwards, the students were asked to write a descriptive paragraph describing their favorite imported product and a reason why they liked it. This writing prompt was the one assigned to the experimental groups.

The “Essay Writing” presentation provided general information about an essay. The presentation explained what an essay was and addressed its main components which included an introduction, body paragraphs, and a conclusion with examples. The presentation ended with an essay outline summarizing the important points and the

writing assignment on one's recent dream, which was also assigned to the experimental group.

The "Opinion Essays" presentation focused on what an opinion essay was, the organization of an opinion essay (an introduction, body paragraphs, and a conclusion), and how to offer a counterargument. This presentation was quite similar to the "Organizing Your Argument" presentation prepared for the experimental groups, except that the two teachers of the control groups were requested not to emphasize on how to organize the essays particularly where to present their counterargument. After the presentation, the students wrote an essay voicing their opinion whether they agreed or disagreed that the technology was one of the greatest technological developments in human history. All of the three writing instructional modules were reviewed and pilot-tested in the same manner as those prepared for the experimental-group participants described in the previous section.

Training Sessions

The teacher training procedure regarding all of the PPT presentations included the following: 1) the researcher explained the aim of each training module; 2) teachers reviewed each PowerPoint presentation; 3) the researcher answered questions that the teachers had; 4) the teachers did practice exercises; and 5) the researcher debriefed the training and discussed each writing assignment with the teachers. Teachers' feedback was taken into consideration in revising the writing assignments.

In addition to the PPT training, the teachers of the experimental groups were trained to use Inspiration 6 software program to generate and organize ideas. They learned how to brainstorm multiple ideas using some key features such as Diagram,

RapidFire, Link, Symbols, and etc. to create a visual of their ideas about a topic. To create a concept map, they opened Inspiration 6 and clicked on the diagram tool. Then, they typed their topic or main idea in a main idea bubble. To add each new idea, they could click on the RapidFire feature and type their ideas and hit the enter key. The new idea would automatically be created and linked to the topic. They could continue typing and hitting the enter key until they finished brainstorming idea. They were asked to print this visual map of their ideas and also learned how to transfer it to Microsoft Word. Handouts describing steps in brainstorming ideas via Inspiration 6 were created by the researcher to support the training of instructors and students. These handouts were also shared with the teachers in the control groups.

Instruments

Data for the current study were collected from three major sources: opinion letters, on-line writing strategy questionnaires, and student interviews. The first two data sources were collected during pre-test and post-test sessions, and the interviews were conducted shortly after the post-test writing session.

Writing prompts. Participants were asked to write one pre- and one post-treatment opinion letter voicing their opinions on particular issues. The researcher developed two writing prompts based on Kroll and Reid's (1994) six guidelines for designing appropriate writing prompts for non-native speakers of English, which include contextual, content, linguistics, task, rhetorical, and evaluation variables. For contextual variables, Kroll and Reid recommend that a prompt designer clarify the writing context to student-writers or test-takers. Additionally, the writing prompt designer needs to consider some contextual variables such as how the test fits into the class' objectives or

program/school's goals, the function of the writing prompt (e.g. placement test, in-class writing prompts, or exit exams), and the evaluation criteria used to assess the writing. For content variables, the researchers note that prompt designers need to develop writing prompts that are fair to all writers, in terms of topic and content knowledge. Cultural bias is one potential factor that can hinder writers from performing well when they are asked to write about unfamiliar content. Regarding linguistic variables, directions for writing tasks must be precise and clear. Words or concepts must not be ambiguous. Kroll and Reid (1994) gave an excellent example of the writing prompt that asked students to write about a blind date which posed some confusion among several ESL writers who ended up writing about a date who is blind. This writing prompt showed how linguistic and content variables affected the writers and their written products. Also, specific instructions such as time limit, tools for writing (paper, pen/pencil, computer, etc.), editing, and revision should be included to inform writers of task requirements. With regard to task variables, the researchers caution a prompt designer to keep in mind the appropriate number of tasks and time for writers to perform in a writing task. Rhetorical variables in Kroll and Reid's (1994) view involve the way the writers approach the writing task regarding the writing purpose, audience, and rhetorical organization (compare and contrast, opinion, etc.). Finally, to address evaluation variables, the researchers suggest that the writing assessment be standardized by providing readers or raters of the students' writing with training and the assessment criteria relevant to the writing task. These six critical components were considered throughout the development of the writing prompts for this study. As a result, during the process of prompt development, the researcher clarified the writing context, selected writing topics familiar and relevant to all participants, gave clear

and precise directions for writing tasks, selected tasks that participants could finish during the allotted time, asked participants to voice their opinions to a particular audience, and considered a writing rubric to assess students' written products. The two writing prompts used in this study are as follow:

1. Due to inflation (an increase in the prices of products and services), the ELI director is thinking about raising the tuition fee from \$3,585 to \$3,700 in fall 2008. She has asked ELI students to share their opinions on this issue with her.

Write a letter to the ELI director voicing your opinion about the issue. Clearly state your position and support your opinion using facts and logical arguments. You have 45 minutes to write the letter of about 250 words.

2. The ELI Assistant Director has received several complaints about the type and amount of homework that students are getting this semester. She decided to find out what the students think about this issue. She plans to make some adjustments if necessary, so the students can get appropriate type and amount of homework to help them learn better.

Write a letter to the ELI curriculum coordinator telling her your opinion about the type and amount of homework you get from your classes. Clearly state your position and support your opinion using facts and logical arguments. You have 45 minutes to write the letter of at least 250 words.

Initially, a different (from the two above) writing prompt which asked students to write an opinion paragraph about their views on computer technology was developed and piloted with the same group of participants who completed the questionnaire; however, it was later discarded because the researcher was concerned that this writing

prompt might not clarify the purpose and audience of the writing task clearly. As a result, it might not reveal the anticipated effect of the pre-writing strategy training given prior to the post-tests. Another concern was that a paragraph might be too short to infer students' ability to organize their writing. Consequently, the researcher considered the task of writing an opinion letter which seemed fair to all of the participants in relation to topic and content knowledge. This task type also required the participants to apply their knowledge of writing an argumentative essay and consider the writing purpose and audience. As a result, the researcher developed the two previously mentioned writing prompts which were reviewed by two experienced ESL writing teachers and one expert in SLA writing. These two prompts were piloted with a small group of Level-Four students in a Business English elective class to ensure that the instructions on the prompts were clear and elicited the type of data needed for this study. This pilot test involved two main steps. First, the researcher went over each of the writing prompts and asked for feedback from students in terms of clarity. All of the students informed her that they were clear; however, during writing two students asked her to clarify the length of the letter. So, the required number of words was added to the prompts. After discussing and clarifying the writing prompts, three students wrote an opinion letter on writing prompt #1, and the other three responded to prompt # 2. The whole process took approximately 45 minutes. The writing samples indicated that the writing prompts were able to elicit the type of data needed for the current study.

Scoring rubrics. The scoring rubric (Appendix 3) used to assess the quality of students' opinion letters in the current study is a multiple-trait rubric consisting of three traits which are writing purpose and audience, development of main idea and support,

and organization. Unlike holistic and analytic scoring, which usually contains the generic criteria: content, organization, vocabulary, language use, and mechanics, a multiple-trait rubric scoring technique allows readers to focus and evaluate salient traits present in a specific writing context, such as writing task, genre, topic, and audience (Ferris & Hedgecock, 1998). Since the goal of this research is to examine the impact of training the participants in the experimental group to use pre-writing strategies during planning or the first step of the writing process, the scoring guide focuses on the three main traits related to those strategies. To develop this scoring guide (Appendix 3), the researcher reviewed holistic (e.g. TWE scoring guide) and ESL composition profile (Jacobs, Zingraf, Wormuth, Hratfiel & Hughey, 1981) and selected relevant input to be used in the scoring guide for opinion letters.

TWE is the essay component of Test of English as a Foreign Language (TOEFL), the standardized test which evaluates the English proficiency of students whose native language is not English. It is used to evaluate a 30-minute timed writing essay in response to an assigned task and topic. TWE essays are holistically scored using the TWE scoring guide, a criterion-referenced scale of one to six, to evaluate test takers' academic writing proficiency in the areas of content, organization, relevant support, and the language use of standard written English. TWE test results generally assist institutions in evaluating international applicants' academic writing proficiency. The TWE scoring guide was developed, validated, and used to score the first TWE essays in 1986 (Kroll & Reid, 1994). It was later revised to reduce threats to reliability. The TWE scoring guide consists of six scores, ranging from one to six. According to Kroll and Reid (1994, p. 241), "Higher scores represent higher competency in a variety of areas, whereas lower scores

reflect reduced proficiency in one or more critical areas of text development.” This concept was applied to the development of the multiple-trait scoring guide in the present study because it has been used to score essay writing of international students on a large scale; the guide also focuses on the content, organization, and relevant support appeared in their essays. However, the TWE guide does not include the area of writing purpose and audience; therefore, the researcher added the trait of writing purpose and audience to the scoring guide.

The researcher prepared a drafted rubric and asked two experienced ESL writing teachers and one expert in the field of SLA writing for feedback, then revised accordingly, and used the rubric to assess the letters written by six IEP students. Feedback received and insights gained from grading these letters were used to revise the final version of this scoring guide for opinion writing. When it was used to grade the mentioned writing samples, the initial inter-rater reliability was 75%, and eventually it reached a consensus of 100% in agreement. These two trained co-raters were invited to grade the opinion letters collected in Spring 2008.

Idea units. In addition to assessing the quality of participants’ writing, the quantity of their writing was measured by counting the number of idea units present in their opinion letters. Idea units were defined by Chafe (1985) as linguistic expressions of focal consciousness (short-term memory). Simply put, an idea unit is the information that a speaker or writer can handle comfortably in a single focus. Initially, an intonation/idea unit was proposed to analyze spoken language, taking its intonation contour, pause, and clause into consideration. In spoken language, idea units are typically strung together in a chain, with a relatively small amount of subordination. For example:

And my room was small.
It was like...nine by twelve or something.
It seemed spacious at the time.
I came home,
I was really exhausted,
I was eating a popsicle,
I was sitting there in my chair,...

The example of spoken language above shows a total of seven idea units. Chafe (1985) later expanded the properties of the idea units for written language analysis, with the understanding that spoken and written language differ mainly in time and audience constraints. These constraints, in turn, cause speakers to produce the spoken language with less varied words and phrases and less complex clauses. In other words, in written language, an increased amount of time, and an absence of audience allow writers to produce complex language output. The following writing sample shows four idea units that approximate those of spoken language:

There are exceptions to this general rule,
and they are related to festivals of the winter solstice and death.
Christmas ritual focuses upon the Virgin Mary,
who is synonymous with the moon in their belief.

Consequently, an idea unit used to analyze writing was defined as a clause that contains one verb phrase with expansion devices, such as nominalizations, attributive adjectives, present participles, past participles, prepositional phrases, constituents conjoined in pairs, constituents conjoined in series, complement clauses, restrictive

relative clauses, adverbial phrases, indirect questions, and indirect quotations. In addition, dependent clauses (see example #15), appositives, and participial clauses, which were expressed independently from a main clause, were separate idea units. Chafe (1985, pp. 108-112) listed 14 of the most commonly found devices for idea unit expansions and provided examples as follows:

1. Nominalizations, by which verbs like *tend*, *prefer*, *speak*, *refer*, and *use* or adjectives like *abstract* become noun phrases that can then be the arguments of other verbs or the objects of prepositions:
 - One *tendency* of interest in our narratives is the *preference* of both English and Japanese *speakers* for *referring* to entities by *using* words of an intermediate degree of *abstractness*,
2. Attributive (preposed) adjectives, by which predications are turned into modifications:
 - These *communicative* tasks must be discovered by *detailed ethnographic* observation.
3. Preposed present participles, by which verbs become attributive adjectives:
 - It is possible that this microcosm functions as an *organizing* framework for further conceptual material.
4. Postposed present participles, which allow such deverbal modifiers to be followed by direct objects and more:
 - The infant's knowledge of the world is based initially on innate reflex mechanisms *relating* particular sensory inputs to particular motor actions.

5. Preposed past participles:

- The sight of an object brings about *directed* looking.

6. Postposed past participles:

- I was able to understand more intuitively the nature of the linguistic devices *used* by these three speakers.

7. Prepositional phrases:

- *By* this we mean that the goal *of* our ethnographic inquiry is the discovery *of* certain strategic encounters that mirror the progress of individuals *through* certain social institutions.

8. Constituents conjoined in pairs:

- Their *explanations and comments* often were revelations to me.

9. Constituents conjoined in series:

- Much of syntactic structure as acquired by children is a consequence of *pragmatic and discourse functions, stages of sensori-motor and cognitive development of processing capacities, social development, and various aspects of meaning.*

10. Complement clauses:

- Certain interesting aspects of the situation indicate *that we are not witnessing obligatory synchronic rules at all in the younger speakers.*

11. Restrictive relative clauses:

- The rules developed here have environmental constraints *that are important to some speakers but non-applicable for others.*

12. Adverbial phrases:

- These groups are, of course, labeled *quite profusely* outside of this particular environment.

13. Indirect questions:

- It is important to ask *whether a given theory deals only with the kinds of cognitive skills that children acquire normally.*

14. Indirect quotations:

- Some speakers say *they heard someone say once that this referred to reeds in the lake there.*

Chafe (1985) further elaborated that writers often integrate more idea units into sentences. These included dependent clauses, appositives expressed in separate idea units, and participial clauses, three of which were considered as separate idea units from a main clause. The examples are as follow:

15. Dependent adverbial clauses (introduced by a variety of subordinating conjunctions, such as after, although, as, as if, as soon as, because, before, if, in order to, once, since, so that, unless, until, when, whereas, while):

- *Once a child was called on*, he or she went to the front of the room. (2 idea units)
- I shall talk about two styles...*as if they were discrete entities.* (2 idea units)

16. Appositives expressed in separate idea units:

- The dinner took place in the home of Kurt, *a native New Yorker living in Oakland, California.* (2 idea units)

- This suggestion finds some support in studies of children's "egocentric" speech as well as adults' "inner speech," *cases in which the speaker is not concerned with the needs of a listener.* (2 idea units)

17. Participial clauses:

- Realism, *granting the difference between representative and the thing represented,* is concerned with the nature and quality of representation. (2 idea units)
- *Described in this way,* the use of nominal vs. pronominal references seems to be an appropriate area for psycholinguistics investigation.

In addition, the researcher treated a non-restrictive relative clause as one idea unit considering that this type of clause always appeared independently from a main clause and required some kind of punctuation marks (e.g. commas, dashes, parentheses, etc.) to show its independence, a similar occurrence to an appositive. Although Chafe (1985) did not include a non-restrictive clause in his list above, his example of the idea units for written language made clear that he counted a non-restrictive relative clause as a separate idea unit.

There are exceptions to this general rule,

and they are related to festivals of the winter solstice and death.

Christmas ritual focuses upon the Virgin Mary,

who is synonymous with the moon in their belief. (a non-restrictive relative clause)

In brief, Chafe's concept of idea units for written language can be used to determine the quantity of information that the learners can compose in a single focus. Consequently, this dissertation research applied such concept to measure the amount of information that the participants could produce in their opinion letters. The operational definition of an idea unit in this study was a single clause which contained one verb phrase along with expansion devices, such as nominalizations, attributive adjectives, present participles, past participles, prepositional phrases, constituents conjoined in pairs, constituents conjoined in series, complement clauses, restrictive relative clauses, adverbial phrases, indirect questions, and indirect quotations. Also, each dependent clause, appositive, participial clause, and non-restrictive clause were counted as a separate idea unit from a main clause. In addition, a salutation (e.g. Dear X,) and a complimentary close (e.g. Sincerely,) when they appeared in a opinion letter was counted as one idea unit each.

The working definition of an idea unit was piloted to measure students' letters during summer 2007. Before grading the students' writing, the researcher trained two co-raters, who were doctoral students in the Second Language Acquisition and Instructional Technology (SLA/IT) Ph.D. program. One co-rater was teaching three graduate courses in Applied Linguistics, and the other was a Coordinator for Computer-Assisted Language Learning and was teaching one of the writing courses in the IEP. During the training, the researcher explained the purpose of her study, showed the writing prompts, and gave the working definition of an idea unit to her co-raters. She also answered any questions that they had about the task. Next, examples of students' writing with number of idea units were given to ensure their understanding of this measure. Then, the researcher and her

co-raters practiced coding two letters using idea units. Any discrepancy of the number of idea units was resolved through discussion. The researcher and co-raters, then, worked on the idea units of the four letters independently. One week later, the researcher and the co-raters met to compare the results and discuss any disagreement related to the number of idea units for each piece of writing. The inter-rater reliability of agreement for measuring students' idea units present in their opinion letters started from 85% and eventually reached 100% after discussion.

The data analysis procedure for idea units present in the participants' pre and post-treatment letters collected in Spring 2008 followed the same procedure described above. Initially, the researcher conducted a training session pertain to idea units coding to her four co-raters in the same manner that she did with her co-raters in summer 2007. These co-raters were doctoral students in the SLA/IT Ph.D. program who were experienced ESL/EFL teachers in the IEP. After the training, the researcher and her co-raters independently coded 50 % of the letters manually. Later, they met to compare the coding results and discuss disagreement. The inter-rater rates of agreement were 95%, 97%, 98%, and 99% at the outset. Additional discussions achieved consensus, and thus the agreement rate reached 100%. The researcher and two out of the four raters proceeded to code another 25% of the data, and the results of the inter-rater agreement were similar to those presented above; therefore, the researcher continued to code the remaining letters.

Writing strategy questionnaire. The writing questionnaire (Appendix 4) consisted of three parts. The first seven items of the questionnaire gathered participants' demographic information including gender, age range, educational background, first

language background, years of English study, and years of computer use. The main part included ten statements eliciting pre-writing strategy use, such as “I planned by brainstorming ideas before writing my opinion letter; I thought about the purpose for writing this opinion letter”; “I thought about the audience of this opinion letter”, and etc. Each item was followed by two scales -- yes and no. The last section was an open-ended question collecting participants’ own strategy use excluded from those in the previous section. All of the participants were assigned codes to differentiate each group and received the URL address to access the on-line questionnaire. The on-line questionnaire was password-protected, and only the researcher had an access to these data.

The questionnaire was developed using Flashlight Online hosted by the CTLSilhouette system, Center for Teaching, Learning and Technology, Washington State University and pilot-tested with a group of eight IEP students during summer 2007. In the IEP networked computer lab, the researcher explained how to access the online questionnaire, provided its URL address on an instructional sheet as well as posting it on a whiteboard, explained each item on the questionnaire to ensure that it was understandable, and emphasized that they needed to complete the questionnaire immediately after they finish their writing task and to submit it one time only. The students were able to complete and submit the questionnaire on-line without any difficulty. The same procedure was followed when collecting the data for the current study.

Student interviews. An interview guide (Appendix 5), developed by the researcher who was provided guidance by an expert in the field of SLA, was used during the semi-structured interviews. It contained 19 interview questions: the first six questions

elicited interviewees' demographic information such as native language, education background, work experience, years of English studies, years of computer use, etc. The remaining questions drew out information regarding their frequency and kinds of English writing (e.g. "How often do you write in English?" "What kind of writing do you do?"), their enjoyment of writing in English (e.g. "Do you enjoy writing in English?" "Which aspect do you enjoy most?" "Which aspect do you enjoy least?"), their approach to writing the post-treatment opinion letter (e.g. "How did you write the opinion letter this morning?" "Can you describe it to me step by step?" "What did you do first? Second?"), and their pre-writing strategies (e.g. "Did you think about the purpose of your letter writing?" "If so, what was the writing purpose?" "Did you think about your readers?" "If yes, how did knowing your audience affects how you wrote your letter?"). The interview guide was piloted with one student who participated in the pilot test of the writing prompts. The purpose of this pilot test was to find out whether the interview questions were clear and able to generate the type of data needed for this study. After this student completed writing his opinion letter, the researcher invited him to a 25-minute interview in her private office. During the interview, the researcher took notes of his responses and followed the flow of the interview without interrupting him. As a result, some questions were asked in a different sequence than what had been planned. Of all the interview questions, the interviewee stumbled on the question "How did consideration of your audience help you write this letter?" He asked for some clarification and checked his understanding of the question before he could answer it. As a result, this question was revised to make it understandable to future interviewees. This piloted interview indicated

that the interview questions were mostly clear and were able to draw out the type of data that can be used to assist the interpretation of the quasi-experimental results of this study.

Six semi-structured interviews were conducted for the current study. During each interview, the interview guide (Appendix 5), consisted of 19 questions, was used. The first six questions which elicited interviewee's demographic information such as country of origin, native language, highest educational background, work experience, years of English studies, and years of computer use, were conducted through a short survey prior to the interviews. Each interview, which was conducted in an informal manner, took place in the researcher's private office and was approximately 20 minutes. Throughout the interviews, the researcher followed the flow of the conversation and did not interrupt when the interviewees responded to the researchers' questions. They understood all of the questions, and all of the interviews went smoothly. The researcher audio-taped the conversations and took notes during the interviews.

Data Collection Procedures

Data for the quantitative aspect of this study were collected from two main sources: a writing strategy questionnaire and students' opinion letters. The qualitative data were collected through semi-structured student interviews. The data collection procedures are described as follows:

Session 1 (Thursday of Week 2, after IRB approval)

During the pre-treatment sessions (one conducted with the morning groups, and the other with the afternoon groups), the researcher and two instructors provided instructions to all participants to write an opinion letter, responding to the writing prompt #1 (Appendix 6) and complete the on-line writing strategy questionnaire (Appendix 4) in

the IEP computer lab. The instructional handout included the URL address where the participants could access the questionnaire. The researcher emphasized the sequence of the tasks and cautioned students to submit the questionnaire only one time. The letters and questionnaires were used as base-line measures. The participants had one hour to complete both tasks, and the entire session lasted 75 minutes.

Session 2 (Thursday of Week 6)

During the post-treatment sessions (one conducted with the morning groups, and the other with the afternoon groups), all of the participants wrote another opinion letter, responding to the writing prompt # 2 (Appendix 7) and completed the writing strategy questionnaire. The participants followed the same procedure used during the pre-treatment session. This session took place during the period of 75 minutes.

Session 3 (Shortly after Monday of Week 4)

Six participants from the control and experimental groups (three from each group) were invited to an individual interview with the researcher shortly after the post-treatment sessions. Details about the interviews were provided in the Student Interviews section.

Data Analysis

Three major sources of data including opinion letters, writing strategy questionnaires, and student interviews were analyzed to answer the four research questions. Data from the writing strategy questionnaire consisting of participants' demographic information, English writing skills, and technology experience of the control and experimental groups were analyzed separately using descriptive statistics.

Research Question #1: Does pre-writing strategy instruction guided by computer-

based procedural facilitation have an effect on the participants' use of writing strategies when writing opinion letters? The null hypothesis was that there was no difference in the mean pre-writing strategy gain scores between the control and experimental groups obtained at post-test after adjusting for the pre-test scores. The effect on the participants' use of writing strategies was operationalized as the number of writing strategies reported on the writing questionnaire. There were two variables involved: group association as an independent variable and the number of strategies as dependent variable.

To answer this question, a "yes" response related to each writing strategy was converted to 1, and a "no" response was converted to 0. A One-Way Analysis of Variance (ANOVA) was used to determine the statistically significant difference between the mean gain scores of the pre-writing strategies of the control and experimental groups. The alpha level was set at .05.

Research question #2: Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the quantity of writing produced by the participants? The null hypothesis was that there would be no difference between the writing quantity scores of the control and experimental groups. Writing quantity in this study was operationalized as the number of idea units present in the participants' opinion letters. There were two variables involved in this research question. The independent variable was group association, and the dependent variable was the number of idea units.

To answer this research question, the number of idea units in the participants' pre and post-treatment letters were coded using the operational definition of idea unit described earlier in the Idea Units section. First, the researcher and her trained raters coded 50 % of the letters using idea units manually and independently. Then, the

researcher and the co-raters met to compare their results and any disagreement were discussed to achieve consensus. Once, satisfactory agreement of 90% or higher was achieved, the researcher proceeded to code the remaining letters. A One-Way ANOVA was used to determine the statistically significant difference between the mean scores of the idea units of the control and experimental groups. The alpha level was set at .05.

Research question #3: Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the quality of writing produced by the participants? The null hypothesis was set as there would be no differences regarding the writing quality scores between the control and experimental groups. The working definition of writing quality in this study was the scores received on their opinion letters measured by the scoring guide for opinion letters (Appendix 3) on each individual trait. There were four variables involved in this research question. The independent variable was group association, and the dependent variables were the gain scores (post-test minus pre-test writing scores) on writing purpose and audience, development of main idea and support, and organization.

To answer research question #3, the participants' letters were assessed using the multiple-trait scoring guide for opinion letters for their writing quality. The researcher and her two trained co-raters rated all of the letters independently. Afterwards, the raters met to discuss the results and resolve any disagreement concerning the writing scores. Multivariate Analysis of Variance (MANOVA) was performed to determine if the differences in the writing quality of the control and experimental groups were significant. The alpha level was set at .05. Additionally, if significant differences were found from MANOVA analysis, an ANOVA would be performed to determine a significant

difference on each individual variable. The alpha level set for the ANOVA analysis was .01.

Research question #4: How do the participants approach the task of writing an opinion letter?

Interview data were transcribed verbatim by the researcher and triangulated with her written notes. The interview transcripts were spot-checked by the researcher's co-rater. Member checks were performed with all of the interview transcripts. The transcribed data were analyzed and coded manually by the researcher and a second rater who was a doctoral student in College of Education and had experience coding data using constant comparative analysis (Glaser & Strauss, 1967; Lincoln & Guba, 1985) for emerging themes. Each independent rater employed a four-step analysis. First, they read all of the raw data in order to obtain an overall picture. Next, they unitized the data or sorted them looking for units of meaning. Then, the raters coded the data units. Finally, they categorized similar units of meaning together and constantly compared among categories. Different groups were separated and formed a new group. This double coding (Miles & Huberman, 1994) procedure was used for theme and sub-theme verification. The researcher and her co-rater met and compared the coding results. They achieved the inter-rater agreement of coding at 100%. As a result, two major themes and several sub-themes emerged. The summary of research questions, data collection, and data analysis is presented in Table 3-3.

Table 3-3 Summary of Research Questions, Data Collection, and Data Analysis

Research Questions	Data Collection	Data Analysis
1. Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the participants' use of writing strategies when writing opinion letters?	Writing strategy questionnaire (administered in Sessions 1 and 2)	One Way ANOVA (measured by the pre-writing strategy score gains in the questionnaire)
2. Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the quantity of writing produced by the participants?	Pre- and post- treatment opinion letters (Sessions 1 and 2)	One Way ANOVA (measured by the gains in the number of idea units between pre-and post-treatment letters)
3. Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the quality of writing produced by the participants?	Pre- and post-treatment opinion letters (Sessions 1 and 2)	MANOVA (measured by the writing score gains in writing purpose and audience, development of main idea and support, and organization traits)
4. How do the participants approach the task of writing an opinion letter?	Six student interviews (conducted within two days after Post-test)	Constant Comparative Methods

End of Chapter Summary

This chapter discussed the mixed methods research design employed to examine the effects of computerized pre-writing strategy training on ESL students' strategy use, writing quantity, and writing quality in the current study. The participants, setting, and the textbook sections described the study context followed by the sections in relation to research procedures, the treatment for both control and experimental groups, and instruments including writing prompts, scoring rubrics, idea units, writing strategy questionnaire, and student interviews. Data collection and data analysis sections concluded this chapter. The next chapter reports the results for the four research questions.

Chapter 4 -- Results

This study examined the training effects of specific pre-writing strategies on the strategy use and quantity and quality of writing produced by participants on opinion letters. A mixed methods research design was employed and the study was guided by three quantitative research questions and one qualitative research question. Data collected from participants' writing strategy questionnaires were analyzed using one-way analysis of variance (ANOVA) to answer research question one which is related to participants' writing strategy use. Data collected from pre- and post-test letters were analyzed using one-way ANOVA to answer research question two regarding writing quantity produced by the participants. The same data were also analyzed for writing quality using Multivariate Analysis of Variance (MANOVA) to answer research question three. These analyses involved four variables. The independent variable was the pre-writing strategy training, which was measured on a nominal scale and assumed two values: control and experimental groups. The dependent variables were participants' strategy use (measured by number of reported strategies), writing quantity (measured by number of idea units), and writing quality (writing scores measured by the multiple traits writing rubric). The strategy use variable was dichotomous whereas the writing quantity and quality variables were continuous. The alpha level was set at .05 for all of the analyses. Additionally, interview data were collected to aid the interpretation of the quantitative data and were analyzed using constant comparative analysis (Glaser & Strauss, 1967; Lincoln & Guba,

1985). The results, organized by research questions, are presented in the following sections.

Research Questions

Research question #1: Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the participants' use of writing strategies when writing opinion letters?

Demographic information was collected from 41 participants using a writing questionnaire (see Appendix 4). Details about these participants are presented in the Participants section in Chapter 3. The one-way ANOVA with one between groups factor was employed to analyze the dependent variable or the number of writing strategies reported via online questionnaires by the participants immediately after they finished writing their pre-test and post-test opinion letters. The independent variable was group association (control vs. experimental). The null hypothesis was set as there was no difference in the mean strategy scores between the control and experimental groups obtained at post-test after adjusting for the pre-test scores.

To answer this question, first, a “yes” response related to each writing strategy was converted to one and a “no” response was converted to zero. Then, all of the seven trained pre-writing strategies including writing down ideas, listing ideas, organizing ideas, considering writing purpose and audience, writing down notes, and preparing an outline were aggregated and became a pre-writing strategy score for each participant.

Initially, the distribution of each group on participants' pre-writing strategy scores collected at pre-test was examined. SAS 9.1 for Windows was used for all of the

statistical analysis procedures. The control group mean ($M = 3.42$) and standard deviation ($SD = 1.77$) were slightly higher than those of the experimental group ($M = 3.05$, $SD = 1.58$). The stem-and-leaf display of the control group showed slightly positive skewness (0.28) and kurtosis of -0.05, with two outliers. The distribution of the experimental group, on the other hand, was slightly negatively skewed (-0.16), and its kurtosis (0.05) was slightly peaked with two outliers. Table 4-1 presents descriptive statistics on aggregated pre-writing strategies by groups at pre-test.

At post-test, the experimental group showed an increase ($M = 4.32$) in using pre-writing strategies, particularly the strategy addressing writing purpose and audience consideration while the control group mean ($M = 3.42$) remained the same as that reported at pre-test. Further, the control group had standard deviation of 1.64, skewness of 0.16, and kurtosis of 0.69 whereas the experimental group showed a standard deviation of 1.78, skewness of -0.20, and kurtosis of 0.33. Table 4-2 depicts descriptive statistics for the control and experimental groups on the number of pre-writing strategies reported at post-test.

A gain score of each participant was computed using the difference of pre- and post strategy scores. The analysis of descriptive statistics showed the mean and standard deviation of the control group as 0.00 and 1.49 respectively, and those of the experimental group were 1.27 and 2.03 respectively. The control group also showed lower skewness (0.34) and kurtosis (0.64) values than those of the experimental group ($S=0.99$, $K=1.06$). Means, standard deviations, skewness, and kurtosis on the pre-writing strategy score gains can be found in Table 4-3.

ANOVA assumptions of independence, normality, and homogeneity were reviewed for the pre-writing strategy variable. Since each participant was a member of one group (control or experimental) only, and all of the participants individually completed the pre-writing questionnaire without being influenced by one another, it was concluded that the independence assumption was not violated. As for normal distribution, the Shapiro-Wilk statistic of .950766 and a corresponding p value of .07--which was greater than .05-- indicated that the sample did not depart from normality. Consequently, the assumption of normality was met. To test the assumption of homogeneity of variance, the Levene's test was used and the analysis result ($p=.27$) showed that the variances were homogenous, indicating that this assumption was satisfied.

When the strategy score gains of the two groups were analyzed using one-way ANOVA with one between group factor, the outcome revealed a statistically significant difference at $p = .03$ and the magnitude of the treatment effect (R^2) at 0.12, suggesting a mild relationship between the pre-writing strategy training and the number of pre-writing strategy use. The ANOVA results of gain strategy scores are presented in Table 4-4.

Table 4-1

Descriptive Statistics on Aggregated Pre-writing Strategies by Groups at Pre-test

Variables	N	Mean	Standard Deviation	Skewness	Kurtosis
Control	19	3.42	1.77	0.28	-0.05
Experimental	22	3.05	1.58	-0.16	0.05

Table 4-2

Descriptive Statistics on Aggregated Pre-writing Strategies by Groups at Post-test

Variables	N	Mean	Standard Deviation	Skewness	Kurtosis
Control	19	3.42	1.64	0.16	0.69
Experimental	22	4.32	1.78	-0.20	0.33

Table 4-3

Descriptive Statistics on Pre-writing Strategy Score Gains by Groups

Variables	N	Mean	Standard Deviation	Skewness	Kurtosis
Control	19	0.00	1.49	0.34	0.64
Experimental	22	1.27	2.03	0.99	1.06

Table 4-4

ANOVA Results of Pre-writing Strategy Score Gains

Source	df	SS	MS	F	P	R ²
Group	1	16.51	16.51	5.10	0.03*	0.12
Error	39	126.36	3.24			
Total	40	142.88				

* p< .05

Research question #2: Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the quantity of writing produced by the participants?

The null hypothesis was that there was no difference in the mean writing quantity scores of the control and experimental groups obtained at pre- and post-tests. Writing quantity in this study was operationalized as the number of idea units present in the participants' opinion letters. The idea-units coding procedure is presented in Chapter 3. There were two variables involved in this research question. The independent variable was the pre-writing strategy training, and the dependent variable was the number of idea units. The one-way ANOVA with one between-group factor was used to analyze the participants' written data.

Descriptive statistics on writing quantity for the control and experimental groups collected at pre-test were computed. The mean and standard deviation of the control group were 20.58 and 6.76 respectively with one outlier identified while the mean of the experimental group was 22.73 with the standard deviation of 6.35. The distribution of the control group suggested positive skewness (1.40) and positive kurtosis (2.74) while that of the experimental group was slightly positively skewed (0.98) and slightly leptokurtic ($K = 0.95$). Descriptive statistics on writing quantity between the two groups collected at pre-test are presented in Table-4-5.

Similarly, descriptive statistics on writing quantity collected from the control and experimental groups at post-test were reviewed. The control group, had the lower mean (24.47) and standard deviation (5.35) than the experimental group ($M=27$, $SD=7.32$). The control-group distribution was slightly positively skewed (0.36) and mildly flat

($K=-0.41$) whereas that of the experimental group was slightly negatively skewed (-0.51) and slightly flat (-0.48). Table 4-6 depicts descriptive statistics for both groups on writing quantity collected at post-test.

Since the aim of the study was to examine the training effects of the pre-writing strategies, the focus was on the improvement of the sample's writing quantity scores. The gains were computed by subtracting the pre-test score from the post-test score for each individual from both groups. The mean of the control group gains was 3.89 with standard deviation of 6.52, skewness of 0.19, and kurtosis of 0.20 while the average score of the experimental group gains was 4.27, with standard deviation of 7.55, skewness of -0.59 , and kurtosis of -0.21 . Examinations of skewness, kurtosis, and Shapiro-Wilk on writing quantity gains for both groups revealed approximately normal distributions. Due to the reason discussed in the Research Question #1 section, the independence assumption was met. The Levene's test for homogeneity of this variance ($p = 0.49$) indicated that the assumption was not violated. Table 4-7 presents the means, standard deviations, skewness, and kurtosis on writing quantity gains (post-test scores minus pre-test scores) for the control and experimental groups.

The score gains produced by the control and experimental groups were analyzed using one-way ANOVA, between groups design. This analysis failed to reveal a significant effect of the pre-writing strategy training on writing quantity between the two groups, $F(1, 39) = .03$; $p = 0.87$, and thus it failed to reject the null hypothesis. The ANOVA results on writing quantity gains between the control and experimental groups are shown in Table 4-8.

Table 4-5

Descriptive Statistics on Writing Quantity at Pre-test

Variables	N	Mean	Standard Deviation	Skewness	Kurtosis
Control	19	20.58	6.76	1.40	2.74
Experimental	22	22.73	6.35	0.98	0.95

Table 4-6

Descriptive Statistics on Writing Quantity at Post-test

Variables	N	Mean	Standard Deviation	Skewness	Kurtosis
Control	19	24.47	5.35	0.36	-0.41
Experimental	22	27.00	7.32	-0.51	-0.48

Table 4-7

Descriptive Statistics on Writing Quantity Gains by Groups

Variables	N	Mean	Standard Deviation	Skewness	Kurtosis
Control	19	3.89	6.52	0.19	0.20
Experimental	22	4.27	7.55	-0.59	-0.21

Table 4-8

Results of One-way ANOVA on Writing Quantity Gains by Groups

Source	df	SS	MS	F	P
Group	1	1.46	1.46	0.03	0.87
Error	39	1962.15	50.31		
Total	40	1963.61			

Note: N = 41

Research question #3: Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the quality of writing produced by participants?

Writing quality in this study was operationalized as the writing scores received on the participants' pre- and post opinion letters measured by the multiple-trait scoring guide for opinion letters (see Appendix 3). There were four variables involved in this research question. The independent variable was group association, and the dependent variables were the score gains (the difference between pre- and post-tests) on three writing traits, which are writing purpose and audience, development of main idea and support, and organization. The null hypothesis for this research question is that there is no difference between the control and experimental groups when they are compared simultaneously on their gained scores on the three mentioned traits.

For the writing purpose and audience trait measured at pre-test, the control group mean was 4.11 with standard deviation of 0.94 whereas the experimental group mean was 4.18 with standard deviation of 0.85. The control group distribution showed slightly negative skewness (-0.68) and positive kurtosis (1.95). Negative skewness (-0.88) was

also found in the distribution of the experimental group which was slightly peaked (0.42). At post-test on the same writing trait, the average score of the control group was 4.26 with standard deviation of 0.65 and that of experimental group was 4.45 with standard deviation of 0.74. Consequently, the difference in the gains (post-test minus pre-test scores) between the control group ($M = .16$) and the experimental group ($M = 0.27$), with a difference of .11, was detected. The descriptive statistics on the writing purpose and audience trait between groups at pre- and post-tests can be found in Table 4-9.

With respect to the participants' scores on development of main idea and support collected at pre-test, the mean of the control group was 3.79 with standard deviation of 0.79, skewness of -0.35, and kurtosis of 0.20 while the experimental group mean was 4.00 with standard deviation of 0.76, skewness of -0.73, and kurtosis of 1.18. At post-test, the control group mean was 4.16 and the experimental mean was 4.50, with a difference of .34. A review of skewness and kurtosis for both groups was satisfactory. Regarding gains on the writing trait of the development of main idea and support, the control group mean was .37 and the experimental group mean was 0.50, with a difference of .13 between the two groups. Table 4-10 illustrates the descriptive statistics on development of main idea and support between groups at pre-test and post-test.

Regarding the organization writing trait collected at pre-test, the mean scores and standard deviations of the control group ($M = 4.11$, $SD = 0.81$) and the experimental group ($M = 4.14$, $SD = 0.89$) were similar. The skewness and kurtosis for both groups were fine. However, the mean of control group collected at post-test was 4.26 with the standard deviation of 0.73 and that of the experimental group was 4.59 with the standard deviation of 0.85, showing the difference in the means of the two groups as .33. When

examining the gains in this writing trait, the control group showed the average gain of 0.16 and that of the experimental group of 0.45, with a difference of .29. Table 4-11 shows the means, standard deviations, skewness, and kurtosis on the organization trait between groups at pre- test and post-test.

Prior to analyzing these three sets of data of the participants' gained scores on writing purpose and audience, development of main idea and support, and organization with one-way Multivariate Analysis of Variance (MANOVA), assumptions were reviewed for independence, multivariate normality, and homogeneity of covariance matrices. Each participant was a member of one group only and all of them wrote their letters independently without being influenced by others; therefore, this assumption was satisfied. A review of the skewness and kurtosis values for both groups showed mild departure from normality, but violations of this assumption have only a very small effect on the type I error rate or the probability of incorrectly rejecting a true null hypothesis (Hatcher & Stepanski, 1994). As such, caution was noted when interpreting the results of the MANOVA analysis. An inspection of the outcome from Box's M Test ($p = 0.34$) revealed that the assumption of homogeneity of covariance matrices was not violated. For these reasons, the researcher concluded that it was reasonable to proceed with the MANOVA analysis.

Gains (post-test minus pre-test scores) on the three writing traits: writing purpose and audience, development of main idea and support, and organization were analyzed using one-way MANOVA, between groups design. Table 4-12 demonstrates these gains between the two groups. The analysis showed a non-significant multivariate effect for the pre-writing strategy training on the participants' writing quality, Wilks' lambda = 0.98, F

(3, 27) = 0.30; $p = 0.82$ as shown in Table 4-13. As a result, the null hypotheses cannot be rejected.

Table 4-9

Descriptive Statistics on Writing Purpose and Audience by Groups

Groups	N	Mean	SD	Skewness	Kurtosis
Pre-test					
Control	19	4.11	0.94	-0.68	1.95
Experimental	22	4.18	0.85	-0.88	0.42
Post-test					
Control	19	4.26	0.65	-0.31	-0.51
Experimental	22	4.45	0.74	-1.00	-0.32

Table 4-10

Descriptive Statistics on Development of Main Idea and Support by Groups

Groups	N	Mean	SD	Skewness	Kurtosis
Pre-test					
Control	19	3.79	0.79	-0.35	0.20
Experimental	22	4.00	0.76	-0.73	1.18
Post-test					
Control	19	4.16	0.60	-0.05	0.04
Experimental	22	4.50	0.74	-0.39	-0.02

Table 4-11

Descriptive Statistics on Organization by Groups

Groups	N	Mean	SD	Skewness	Kurtosis
Pre-test					
Control	19	4.11	0.81	-0.68	1.95
Experimental	22	4.14	0.89	-0.88	0.42
Post-test					
Control	19	4.26	0.73	0.47	0.64
Experimental	22	4.59	0.85	-0.56	-0.14

Table 4-12

Descriptive Statistics on Writing Quality Gains by Groups

Groups	N	Mean	SD	Skewness	Kurtosis
Writing Purpose and Audience					
Control	19	0.16	1.07	1.18	1.63
Experimental	22	0.27	0.83	-0.02	-0.54
Development of Main Idea and Support					
Control	19	0.37	0.83	-0.18	-0.48
Experimental	22	0.50	0.86	0.25	-0.41
Organization					
Control	19	0.16	1.07	-0.65	0.13
Experimental	22	0.45	0.91	-0.68	1.42

Table 4-13

Multivariate Analysis of Variance of Students' Writing Quality

Source	Model df	Error df	Wilks' Lamda	F	P
Treatment	3	37	0.98	0.30	0.82

Research question #4: How do the participants approach the task of writing an opinion letter?

To answer this qualitative research question, six semi-structured student interviews were conducted intending to gather data that would aid the interpretation of the preceding quantitative analyses. The first six interview questions elicited demographic information of the interviewees and were conducted through a short survey prior to the face-to-face interviews. The remaining 13 questions stimulated their responses regarding the interviewee's writing process and strategies. More specifically, the questions that brought out their responses pertaining to their writing process were, for example, "How did you write the opinion letter this morning?" "Can you describe to me step by step?" "What did you do first?" "What did you do next?" Similarly, the questions such as "Did you think about the writing purpose?" "If so, what was it?" "Did you consider your audience?" "If yes, how did knowing your audience affect the way you wrote your letter?" elicited their responses in the area of their writing strategy use (see Appendix 5 for a complete list of interview questions). In addition, questions that elicited the interviewee's perception towards the computer-based writing instruction or training modules were also included.

As anticipated, two main emerging themes were writing process and pre-writing strategies. Under the pre-writing strategy theme, there were three sub-themes which included generating and organizing ideas, considering the writing purpose, and considering the audience. These themes and sub-themes are discussed in detail below.

The Writing Process

Flower and Hayes' (1981) identified three major components in their writing process model comprising task environment, writer's long-term memory, and writing processes (see more detail in Chapter 2). This writing process model has an influence on many ESL/EFL writing teachers' pedagogical approach in teaching writing. In classroom practice, the writing process generally consists of three major steps: planning, drafting, and revising/editing. Planning is the pre-writing step where writing ideas are generated and organized; drafting is the stage at which the writing ideas are translated into texts; and revising/editing is the phase where the text is read and revised. In most ESL/EFL writing classrooms, the emphasis is often placed on the drafting and revising stages where student writers are encouraged to use computers to write and get feedback from teacher and/or peers. The planning stage which allows student writers to think about the writing purpose, consider their readers, and explore their ideas is less emphasized, or in some cases, neglected. As such, students are often left to plan by themselves, and many do not know when and where to begin except moving quickly to construct their texts and spend time revising them to improve their writing quality.

This study found some common writing sub-processes and strategies among the interview participants with a few differences. It was evident that all of them focused

heavily on text construction. Prior to composing text, the majority of the interviewees began with the pre-writing or planning and revised their texts by using the spelling and grammar check features available on Microsoft Word after they completed their writing drafts. Most of them mentioned that they voiced their opinion and presented their main points in multiple paragraphs. It is important to note that all of the interview participants seemed comfortable writing on the computer screen and were actively engaged with the writing task. The details of their writing processes presented by groups are as follows.

The Control Group

Planning. Planning is a sub-process of writing in which the writer usually generates ideas, organizes information, and sets goals taking the task environment such as rhetorical problem, the writing assignment, and audience into account. Within this step, ESL students may not approach planning for writing in the same manner. For example, Reema informed me that she began her writing task by rereading the writing prompt to remember key words and the writing assignment. She did not write anything down during planning but planned what to write in her head. When asked what the writing purpose was, she replied “I wrote the letter because you and my teacher asked me to.” She seemed a little embarrassed when she was asked about her readers and showed no awareness of her audience for this particular writing task. Her responses were not uncommon among unskilled or less skilled ESL writers as consideration of the writing purpose and audience was not frequently emphasized and their regular audience was their teachers.

Sandy, on the other hand, used a clarifying strategy (Leki, 1995) by asking me to clarify the writing task. She did not use any other pre-writing strategies but proceeded to compose texts until finished. She understood that the writing purpose was “to tell my opinion about homework situation to the ELI Assistant Director.” She was pleased with the writing prompt as she felt she had a lot to say in her letter.

Of the three interviewees in the control group, Som made use of the most elaborated writing process, which he began by considering his audience and the writing purpose. Next, he thought about the issue and his stand on the issue, and planned his writing ideas mentally without jotting anything down on paper, a similar strategy reported by Reema. Zamel (1983) coined the term for this type of planning as using a “mental blueprint” that her skilled ESL writers employed throughout the writing process. When asked whether he had ever jotted ideas down on paper or on screen, he responded, “*I need to write my ideas down and organize them when I write a difficult essay like...a comparison and contrast essay.*”

Sam’s response shows that his planning process constituted an evaluation of the writing task and a decision of whether to plan on paper or mentally. Working out ideas on paper allowed him to visualize the relations of main ideas and support that could be compared, contrasted, and organized before drafting.

Drafting and Revising. Reema wrote two paragraphs with opposite opinions and organized them mentally. She reread what she had written, added more ideas, and made use of spelling and grammar checks during the drafting stage. Sandy, on the other hand, wrote until she finished the letter without rereading the whole text. She changed her spelling and grammar mistakes as indicated by Microsoft Word. She did not reread the

whole text to ensure text accuracy. When asked for the reason of not rereading, Sandy responded “*I don’t have this habit—to read again. I don’t read the letter because this is like homework. For schoolwork, it’s OK to make mistakes. If the writing is personal, I’ll read again.*” Sandy seemed to employ the rereading strategy when she writes for the real audience outside class.

Unlike Sandy, Som wrote two supporting paragraphs with specific examples and one paragraph making some suggestions to his audience. He informed me that he had intended to write a three-paragraph letter but could not think of one more supporting idea, thus, he made a decision to provide suggestions to his audience instead. After drafting, Som reread, checked his spelling and grammar, used Thesaurus to look for synonyms, and checked for coherence.

The Experimental Group

Planning. Isabel, Vivian, and Humberto thought about the writing purpose and their audience. Isabel decided not to do any pre-writing due to limited time, so she could spend more time on her drafting and revision. Vivian planned by writing two important ideas and supporting examples and a conclusion on paper. She also organized her notes prior to writing. Of these three, Humberto was the only writer who experienced a writer’s block momentarily. His strategy to unlock it was writing key words on paper and organizing them. Once he got his ideas, his writing began to flow.

Drafting and Revising. Isabel drafted and revised each paragraph at a time. When she felt satisfied with what she had produced, she moved on to compose the next paragraph. In all, she wrote three paragraphs by repeating the same process. She spent quite a bit of time revising her texts by reading each of the paragraphs, organizing them,

checking for coherence among paragraphs, used grammar and spelling checks, and used Thesaurus to search for synonyms, attempting to vary her use of vocabulary. Vivian drafted her letter by following her notes which she used as a model to guide her writing. Since she spent time using some pre-writing strategies, she did not have time to revise her letter. Like Som in the control group, Humberto drafted the letter comprised of two supporting paragraphs and one paragraph providing solutions to the homework situation. He revised by changing grammar and spelling in his text.

A summary of the students' writing processes is presented in Table 4-15. The first three interviewees were the participants in the control group and the last three were in the experimental group.

Table 4-14 The Writing Processes of Six Interviewees

Name	Writing process
------	-----------------

The Control Group

- | | |
|-------|--|
| Reema | <ol style="list-style-type: none"> 1. Read the writing prompt. 2. Used mental pre-writing. 3. Wrote two paragraphs with opposite opinions. 4. Organized mentally. 5. Revised by adding ideas and using spelling and grammar check |
| Sandy | <ol style="list-style-type: none"> 1. Asked for clarification on the writing task. 2. Wrote until finish. 3. Utilized spelling and grammar check and Thesaurus |

Table 4-14 The Writing Processes of Six Interviewees (Continued)

Name	Writing process
Som	<ol style="list-style-type: none"> 1. Considered the reader. 2. Thought about the issue and his stand of the issue. 3. Used a mental blueprint to write two supporting paragraphs and specific examples. 4. Provided suggestions. 5. Reread and revised text.
The Experimental Group	
Isabel	<ol style="list-style-type: none"> 1. Thought about time and writing task. 2. Considered her audience. 3. Drafted each paragraph at a time and revised. 4. Repeated the process for the other two paragraphs. 5. Revised by rereading all of the paragraphs, organizing paragraphs, checking flows of the paragraphs, used grammar and spelling check, and used Thesaurus.
Vivian	<ol style="list-style-type: none"> 1. Thought about writing purpose and audience. 2. Wrote notes on paper consisted of two important ideas and supporting examples, and conclusion. 3. Organized notes.

Table 4-14 The Writing Processes of Six Interviewees (Continued)

Name	Writing process
	<ol style="list-style-type: none"> 4. Drafted the letter using notes as a guide. 5. No revision due to time constraint.
Humberto	<ol style="list-style-type: none"> 1. Thought about the writing purpose and audience. 2. Experienced mental block, but tried to make the writing task real 3. Wrote words and organized them. 4. Drafted the letter and added solutions to the problem. 5. Revised by changing grammar and spelling.

Overall, all of the participants made use of the writing process to a certain extent. Of all the six interviewees, Sandy's writing process contained the fewest steps: clarification of writing task, drafting, and revising at the surface level without rereading the whole text. Reema did some mental planning but did not factor in her audience when composing her letter. Som put some thoughts into writing purpose and audience consideration, made use of the mental blueprint, reread, and revised his text. Like Som, Isabel, Vivian, and Humberto thought about the writing purpose and audience. Isabel made some strategic planning by skipping the planning stage and spent more time on drafting while Vivian spent more time creating her model but ran out of time when it came to revising. Humberto managed to plan, draft, and revised his text the way he wanted. What followed in the next section are the findings of the participants' pre-writing strategy use.

Pre-writing Strategies

Considering the writing purpose. Of the three interviewees from the control group, Sandy and Som reported that they thought about the writing purpose prior to drafting their opinion letters. Reema, however, did not consider the writing purpose. She said she did what she was told by the researcher and her teacher—to write an opinion letter. Sandy and Som articulated the writing purpose in the following excerpts.

Sandy: *“I know I need to write a letter to the assistant director telling her about the homework situation.”*

Som: *“The purpose of the writing is to show the effect of homework on students.”*

Humberto, Isabel, and Vivian, all of the three interviewees from the experimental group, also considered the writing purpose before they started to draft their letters. They commented the following:

Humberto: *“I need to write a letter to show my opinion about the [homework] issue and find solution to what’s affecting us.”*

Isabel: *“We need to write a letter to the assistant director because many students claim that there is a lot of homework. I explained in my letter that each day, there’s a lot of homework, and there’s no free time...”*

Vivian: *“I think why they want me to write this letter. I think the ELI manager [assistant director] wants to know something, and I must present important points.”*

All of the students agreed that the writing task was not difficult based on several different reasons. Sandy, for instance, felt that the issue was relevant to her. “It [the writing task] was not difficult because I feel I have something to say about the issue [of homework]”. Vivian, on the other hand, compared this writing task to the GRE writing.

“It was not difficult. GRE writing is more difficult.” Although Isabel found the writing task not difficult, she admitted that the task created stress for her.

Isabel: *“It was not difficult, but it was stressful for me. It was frustrating because I can’t express what I wanted to say.”*

She further elaborated that she felt like a child who had limited vocabulary and sentence structure but with a lot of ideas that could not be expressed effectively with her limited resources.

As for Humberto, it was difficult for him at first to come up with the ideas for his letter, but he solved the problem by relating the writing situation to the real-life situation. Humberto commented, *“First, it was hard for me. I didn’t have any idea. Then I find idea by myself. I made it like a real situation and I had to make a report.”*

Considering the audience. Sandy and Reema from the control group admitted that they did not consider their readers whereas Som did. When asked how knowing the reader affected the way he wrote his letter. He replied, *“I think about the reader, and try to be formal, and try to choose appropriate vocabulary.”*

All of the interviewees in the experimental group considered their audience. They thought about the audience’s gender, education, interests, and authority. Humberto, Isabel, and Vivian made the following remarks:

Humberto: *“I thought it [knowing the audience] was difficult. She was a superior. I have to use a special...like dialect. I try to be polite.”*

Isabel: *“I tried. I tried to make it like a formal letter...It’s difficult. In Venezuela, a writer doesn’t think about the reader. The writer focuses on himself. I tried to use good vocabulary.”*

Vivian: *“I just thought about the ELI manager [Assistant Director], but you or my teacher will read my letter.”*

Interestingly, Isabel’s comment showed her awareness of the English writing culture in which a writer is responsible for his/her readers’ understanding of texts, an approach which contrasts that of her experience as a Spanish writer. Her experience of difficulty in moving from producing a “writer-based prose” to “reader-based prose” (Flower, 1990) was similar to what Raimes (1985) discussed about her unskilled writers. Isabel also told me that she loved writing in Spanish, and she needed to love writing in English, too.

Another interesting point related to the English writing style and audience consideration was brought up by Vivian. Her remarks left me to speculate that her strategy of preparing an outline might have been transferred from her first language learning strategy.

“I think Chinese and English writing have [has] some differences. The Chinese way of writing is literal, shows writer’s perspectives, and must follow a model. If you follow that model, you can [will] have a correct article [writing product]. In English, you can write anything you want. It’s not formal. You can use an anecdote and write anything interesting down, but you have to think about the audience.”

Vivian’s strategy of using a model was similar to that of the Chinese graduate student in Leki’s ((1995) qualitative study. Her participant reported using an example of successfully completed tasks as model for her work. Another remark related to a writing model was made by Isabel who told me that after she had read the writing prompt, she wished she could have gone on to the Internet and searched for a model letter. She shared

with me that it was one of her regularly-used strategies--looking for a good example on the Internet. Sometimes, it turned out to be fruitless as it was a daunting task to find the exact match of the model and the writing task that she was required to complete.

After considering their audience, Som, Humberto, Isabel, and Vivian chose to use appropriate vocabulary, addressed important issues relevant to the writing task, and made an effort to appear polite in their letters. These findings confirm Weigle's (2005) statement that "writers use knowledge of their audience to select content, vocabulary, cohesive devices, and so on in an effort to make their writing meet the expectations and background of their readers" (p. 134).

Generating and organizing ideas. Reema, one of control-group students, generated her writing ideas by rereading the writing prompt and remembering some key words to search for her writing knowledge. She stated: "*I read the writing prompt again to remember what I need to write and create some ideas in my mind. I didn't write anything down. I organized everything in my mind.*" To guide her writing, Reema made use of mental planning, a strategy also used by Som who planned the outline of his entire letter in his head without jotting anything down on paper. Although both of these students used a "mental blueprint" (Zamel, 1983), Som appears to be more skillful in utilizing this blueprint, judging from his better text quality. Dissimilar to Reema and Som, Sandy did not brainstorm any writing ideas. When she was certain of the writing task, she proceeded to compose text on computer screen and finished her letter fairly quickly. She was able to complete the writing task in less than 45 minutes.

In contrast, the two students in the experimental group—Humberto and Vivian brainstormed their ideas on paper. Despite experiencing a writer's block momentarily,

Humberto managed to unlock it by writing some ideas for his writing and organize them on paper. He said, *“First it was hard for me. I didn’t have any idea. Then I find idea by myself. I wrote down specific words and organize everything.”*

Similar to Humberto, Vivian also generated her ideas on paper in the form of an outline consisted of her stand of the issue, main points to support her argument, and specific examples to support her points. She used this outline to guide her when she wrote the letter. Vivian commented the following, *“I wrote some notes, my opinion, and two main points, and think about my examples. I used my notes as a model.”* She went on to provide a rationale for her use of outline. *“If I don’t [plan], my thoughts will interfere or interrupt my original thought. If I have a model, I’ll follow my model, and I can write clearly. If I don’t write my ideas down, when I write, I may go outside my boundary. I think the model is very [very] useful.”*

When asked whether preparing an outline for her writing took her more time, she replied, *“When I write a draft [an outline] first, it takes me more time. But, it doesn’t matter because it’s very useful.”*

Realizing that she did not have much time to complete her writing task, Isabel made some strategic planning by skipping the planning stage. She chose to spend more time on drafting and revising her text as she explained that her writing score would be based on her text, not on her plan. She further informed me that usually planning is part of her writing process. If she had an hour to complete this writing assignment, she would have planned for it.

Computer-based writing instruction/training modules. During the interviews, the interviewees from the control group were asked to comment on the writing instructional modules on paragraphs, essays, and opinion essays. Likewise, the experimental group was asked about the training modules on writing purpose and audience, generating and organizing ideas, and the use of Inspiration software.

All of the three interviewees from the control group thought that the instructional modules were informative and well-organized. All of them agreed that the first module related to paragraph writing served as a review as they had already learned how write a paragraph. Although Sandy and Som had already learned how to write an essay, they thought that the module summarized important ideas and the visual representation of an essay was helpful. Som, in particular, mentioned that he had that visual in his mind and referred to it when he composed the writing assignments. All of them admitted that the module about opinion essays was extremely helpful. Their opinions on the instructional modules were evident in the following excerpts.

Reema: *“I like the PowerPoint lessons, and the way my teacher explained. It was very clear and interesting. If I use the PowerPoint by myself, it won’t be clear to me.”*

Sandy: *“I already know how to write paragraph and essay, but it’s a good review for me.”*

Som: *“I think the PowerPoint presentations were very useful. They help me to focus on important things when I write the assignments.”*

Consequently, these three students recommended that these PPT instructional modules be used in Academic Writing classes in the future.

Similarly, the experimental group liked all of the three training modules: considering writing purpose and audience, generating ideas, and organizing ideas as well as using the Inspiration 6 software to help them generate and organize ideas. They expressed that the training modules were well-sequenced and well-delivered by their teachers. All of them confessed that they had no idea that as writers, they needed to consider who their audience was. All of them liked to use Inspiration 6 but recommended that more time be allocated for practice. Among the three students, Isabel had some prior experience using Inspiration 2 for her job. She thought the software helped her focus on generating ideas and organizing them, resulting in a visual representation of her ideas and support which in turn helped to ease her text construction. She enjoyed using the software and found the tool was easy to manage partly due to prior experience with the early version of the program. She commented the following: *“Inspiration helped me think about ideas and organize my ideas. Organization is very important. It can make your writing clear. I think other teachers should teach students how to use this tool.”*

Humberto, who was ready to embrace any new technology, also liked to plan using Inspiration 6 but expressed that he would like to have an opportunity to use it more often. During the first Inspiration training, Humberto felt a little confused when he was trying to follow his concept map when he wrote about his dream, one of the writing topics. He showed a better grasp of transferring his writing ideas from the concept map into text in the second training session. He too felt that Inspiration was a useful tool in facilitating his plan for writing, as shown in his comment: *“I like to use computer, and I like to use Inspiration. I think it’s easy and more convenient to work out your ideas on the computer, but I need more practice.”*

Vivian viewed a computer and Inspiration 6 as valuable tools that could facilitate her writing although she admitted that she felt a little nervous using them. She perceived herself as a less-skilled computer user as she commented “*Girls are not good at technology. So, I need to use a computer more and more. I know it will help me with my English.*”

Having perceived the training modules and Inspiration 6 as beneficial to their writing process, all of these three students agreed that they should be implemented in the writing classrooms in the future.

Summary of Findings

This study investigated the training effects of pre-writing strategies on the participants’ strategy use and writing performances related to quantity and quality. The study utilized two control and two experimental groups in the quasi-experimental study and three quantitative research questions were posed. The gain scores on number of strategy use, number of idea units, and three writing quality traits were used as dependent variables whereas group membership was the independent variable. In addition, interview data were collected from six interviewees (three from the control group and the other three from the experimental group) to answer the qualitative question. The summary of findings for each of the research questions are presented as follows.

Question 1: Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the participants’ use of writing strategies when writing opinion letters?

Findings: The participants in the experimental group used significantly more pre-writing strategies than those in the control group, indicating the positive effect of pre-writing strategy training.

Question 2: Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the quantity of writing produced by participants?

Findings: There is no significant difference between the two groups on the number of idea units.

Question 3: Does pre-writing strategy instruction guided by computer-based procedural facilitation have an effect on the quality of writing produced by participants?

Findings: Although the participants in the experimental group showed an increase in their writing quality score gains, the difference between the two groups is not statistically significant.

Question 4: How do the participants approach the task of writing an opinion letter?

Findings: Two themes analysis including the writing process and pre-writing strategies emerged from the interview-data. All of the participants perceived writing as a process, and they shared some common writing processes to a certain extent with some individual differences. A variety of writing strategy use was observed between the two groups. The experimental group was uniform in employing the consideration of the writing purpose and audience strategies whereas only one student in the control group reported using them. Two students in the experimental group planned on paper while two students from the counterpart group planned their writing mentally. The one student in the strategy-trained group who did not plan decided to skip it in order to save time for

drafting and revising her text, but the one in the non-strategy-trained group skipped planning because she wanted to finish her writing task quickly. The next chapter discusses the findings and implications.

Chapter 5 -- Discussion and Implications

The present study investigated the effects of pre-writing strategy training on ESL students' writing strategy use, writing quantity, and writing quality. This final chapter presents discussions, implications, suggestions for further research, and limitations based upon the findings presented in the previous chapter.

Discussion

Pre-writing strategies are conscious thoughts, actions, or behaviors used by writers when they plan before writing. Second language writing researchers (e.g. Cumming, 1989; Lo, 1998; Roca de Larios et al, 2002; Weigle, 2005) agree that specific pre-writing strategies related to writing purposes, audience, brainstorming, and organizing ideas are teachable and have potential to improve ESL students' writing skills. These strategies can support ESL writers while they engage in the planning stage of the writing process. As the pre-writing stage is usually executed in advance of the drafting stage, ESL writers, particularly inexperienced or less experienced writers, may benefit from reducing the information-processing burden of mental resources, which in turn allowing them to focus their attention on other competing demands such as rhetorical features, text organization, text coherence, and etc. (Ojima, 2006; Skehan, 1996; Yuan, 2001). Experienced writers, who arrived in the classroom with already possessed strategies, may discover other effective strategies that they can add to their strategy repertoire which may help them progress in their writing expertise. Based on this

premise, this study hypothesized that the pre-writing strategy training would have positive effects on ESL students' writing processes and products. The following section will discuss the findings following the order of the four research questions.

Pre-writing strategy use. The first research question focused on the training effect on ESL students' use of pre-writing strategies in relation to considering writing purpose and audience, brainstorming ideas, and organizing ideas. A conclusion can be drawn from this study is that the training of the targeted pre-writing strategies seemed to have a positive effect on the use of pre-writing strategies reported by the experimental students. At pre-test, the participants in both control and experimental groups reported using averagely three out of seven pre-writing strategies which were included in the pre-writing questionnaire. These strategies included writing down ideas, listing ideas, writing down notes, organizing ideas, creating an outline, considering the writing purpose, and thinking about the audience. It can be inferred that these students had already possessed some pre-writing strategies when they arrived in the classrooms.

At post-test, the mean score of the control group, however, remained unchanged while that of the experimental group was significantly higher. This strategy-trained group reported using significantly more pre-writing strategies than their counterpart group, indicating the positive impact of the pre-writing strategy training on the participants' pre-writing strategy use. This finding confirms those of Cumming (1989) and Roca de Larios et al. (2002) in that students, regardless of their language proficiency, can be trained to use the strategies of having a sense of audience, planning, and organizing ideas. Based on the results of the pre-writing questionnaire and semi-structured interviews, many students were found to rely heavily on their cognitive strategies (O' Malley et.al, 1985), such as

rereading the writing prompt, remembering some keywords, using mental planning, writing down ideas, organizing ideas, drafting, rereading the draft, and revising. Some students used metacognitive strategies (O' Malley et.al, 1985) that seemed to play a role in their process planning (Hayes & Nash, 1996) and strategy use.

It is important to address some concerns about self-reported data in terms of their accuracy and reliability. Cook and Campbell (1979) pointed out that research participants had a tendency to report what they believed the researcher expected to see or hear and what reflected positively on their abilities, knowledge, beliefs, or opinion. Another concern is how accurately participants can recall past behaviors. In the context of this study, the participants completed the on-line writing strategy questionnaire anonymously and immediately after they had finished writing their opinion letters.

A question that arises from the findings is whether the increased use of pre-writing strategies among the experimental group in this study may have influenced the writing quantity and quality of the students' writing. These results are discussed in the next two sections.

Writing quantity. Training students to use pre-writing strategies did not have a significant impact on their writing quantity measured by idea units. In fact, the control group in this study had a slightly higher mean on the gains than that of the experimental group (4.33 vs. 4.27). Surprisingly, the results of the current study contrast with those of previous research that reported a positive impact of planning (e.g. concept planning, time) on the amount of participants' language production (Ojima, 2006; Yuan, 2001). This cautioned the researcher to review the coding analysis procedure, and she discovered that some students tended to produce short and simple sentences while others

had a tendency to produce long and complex sentences which contained, for example, complement and restrictive clauses. The following excerpts taken from the participants' letters demonstrate how idea units were coded in this study:

Excerpt 1

[1] Hello!

[2] I'm (student's name).

[3] I'm an ELI student.

[4] I'm in Level three.

[5] I would like to talk about the homework that the ELI need us to do.

Excerpt 2

[1] I am an ELI student in the third level who would like to tell you my opinion about type and amount of homework.

Excerpt 1 contained a total of five idea units, four of which were simple sentences with one verb phrase in each. Of all the five idea units in this excerpt, the fifth one showed the most complex sentence containing one verb phrase, one prepositional phrase, and one relative clause. Excerpt 2, on the other hand, contains one idea unit and comprised one verb phrase, two prepositional phrases, and one relative clause. Although these two excerpts communicated similar meaning, the number of idea units was quite different (5 vs. 1).

As such experienced writers who used restrictive relative clauses, complement clauses, adverbial phrases, and etc. might end up receiving the same number of idea units, or in some cases, fewer number of idea units than those of the inexperienced writers. This observation led the researcher to examine the number of words and the number of words

per idea unit produced by the participants on their post-treatment letters. Despite the higher gain mean on the idea-units measure, the control group was found to produce an average of 224.74 words per letter and 7.9 words per idea units whereas the experimental group wrote an average of 241 words and 9.34 words per idea unit. The number of words per letter and the number of words per idea unit between the two groups confirmed the researcher's informal observation while coding that the pre-writing-strategy trained participants tended to produce longer and more complex sentences than the control group despite fewer number of idea units on their opinion letters.

The number of words has been used as a measure in studies examining the impact of planning on the amount of ESL learners' language production. For example, the amount of oral and written language produced by Chinese EFL students was examined by Yuan (2001). He randomly assigned the students to one of the three groups--no planning, pre-task planning, and on-line planning-- and examined the effects of each type of planning on oral and written production. He found that the no-planning group produced, on average, 181.4 words whereas the on-line planning (prolonged planning time) group averaged 206.9 words on narrative written tasks. The number was lower than that produced by the control ($M=224.74$) and the experimental ($M=241$) groups on their post-treatment letters in this study. Yuan also reported that the groups who had time to plan produced not only longer but also more complex texts, a similar occurrence with most texts produced by the experimental group in this study. It is important to point out that the task condition in the current study in which the participants were given time to plan and write within 45 minutes was similar to that of the on-line planning group who was

allowed to take as much time as they needed to plan and was given 17 minutes to write in Yuan's study.

Another planning study was conducted by Ojima (2006) with three Japanese ESL students using concept mapping prior to writing. The three students' writing length ranged from 82 to 130 words when no-planning was not executed and from 94 to 182 when they used concept mapping as their pre-writing strategy prior to writing. When no planning was involved, the average length of writing was 98.5 words per writing assignment and when concept mapping was used, the writing length was 130.16. The participants in Ojima's study spent an average of 15 to 20 minutes to complete their writing assignments either in-class or out-of-class. What seemed to emerge from the results of these studies was that pre-writing strategies, pre-task planning, or strategic planning (the terms vary from studies to studies) have some positive effects on students' writing length.

In light of these results, using other measures such as number of words per document and number of words per idea unit in addition to number of idea units seemed to provide a more accurate picture of the writing quantity produced by student writers. Further, the idea units for written language proposed by Chafe (1985) may not be a sensitive measure to capture writing quantity produced by ESL student writers. However, if one wishes to use it in a similar context to this study, its operational definition needs to be further refined in order to better detect the writing quantity of ESL learners.

Writing quality. The pre-writing strategy training provided for the participants in the experimental group did not have a significant effect on their writing quality measured by the multiple-trait rubric focusing on writing purpose and audience (PA), development

of main idea and support (MS), and organization. Although the experimental group outperformed the control group in writing quality on all of the three components on the rubric, the differences in the gains were small. These gains, however, suggest a trend that the experimental group produced better quality texts on the given writing task and genre. This seems to suggest a positive relationship between pre-writing strategy use and writing quality in a small way although no clear relationship is found between them. The opposite finding was reported by Kozma (1991) that the computer-based organizational tools (i.e. an outline and a graphic idea organizer) increased planning of L1 novice and advanced writers, but there was no correlation between the amount of planning and the writing quality produced by both types of writers.

When closely examining each individual's scores on these writing traits, the results showed higher gains favoring the experimental group across the board. That is, in the experimental group, nine students showed improvement in the PA trait, ten in the MS trait, and 11 in the organization trait, with at least one scale higher between pre- and post-test. The control group also showed gains as follows: five students on PA, nine on MS, and eight in the organization component of the rubric. By comparing groups on each individual trait, it was found that the gains in the PA component among the students in the experimental group almost double those of the control group (9 vs. 5). Fewer gains also showed on the MS (10 vs. 9) and organization (11 vs. 8) between the experimental and control groups.

It is important to note that incidence of raw score decrease occurred in both groups. In case of the control group, five, three and four students showed decrease in the areas of PA, MS, and organization respectively whereas in the experimental group, four,

two, and two students showed the decrease of raw scores on the three previously mentioned traits respectively. The decrease of the scores in both groups might partly be the result of the slightly different writing prompts given at pre- and post-tests. Several students informally informed the researcher right after the post-test that the post-test writing prompt was more difficult than the one used for pre-test because they felt that writing a letter to express their opinions about the type and amount of homework to an ELI assistant director was more specific and therefore limited their ideas and content. These comments were echoed by a few interviewees during the semi-structured interviews. Some of the interviewees added that writing a letter to the ELI director about tuition increase (the pre-test writing prompt) gave them more freedom to select main ideas and relevant support.

A large number of students in both groups showed no change in their raw scores in all of the three writing traits. Nine, seven, and seven students in the control group versus nine, ten, and nine students in the experimental group managed to receive the same scores on PA, MS, and organization respectively.

The lack of statistically significant difference in relation to the participants' writing quality may be explained in two ways. First, the use of pre-writing strategies does not immediately improve writing quality because writing is a developmental process in which it takes time to acquire and refine skills (Zimmerman and Kitsantas, 1999). Considering the relatively short intervention periods (three training session/six weeks), the pre-writing strategy-trained students might not have enough time and opportunities to effectively apply the strategies into their writing processes and further develop their writing skills. Thus, their text quality shows only small improvement. This observed

difference, however, appears to suggest some educational significance or “the importance or relevance of a finding to education decisions” (CARET, 2005, p. 4) regarding pre-writing strategy training in ESL writing classrooms. Another explanation with regard to the lack of statistical significance is that the sample size for this study was small, suggesting a replication with larger number of participants in order to examine the effect of pre-writing strategy training on writing quality produced by ESL learners.

Writing processes and strategies. The data collected from six semi-structured interviews in the current study helped to illuminate the interpretation of the quantitative analyses concerning the effects of the pre-writing strategy training. The qualitative findings are discussed by groups below.

Among the control-group student writers, it seems that Reema and Sandy did not put much thought into planning. For instance, Reema completed the writing task because she was requested by her instructor and the researcher while Sandy used a clarifying strategy to confirm her understanding of the writing assignment and skipped the planning process entirely. Som, on the other hand, considered both the writing purpose and audience. His comment about his audience knowledge reflected the way he planned for his text production by attempting to produce a formal text with vocabulary he perceived to be appropriate to his audience’s level of education. After evaluating the task environment, Som felt that the writing assignment was not challenging to him as he was familiar with the topic knowledge and written discourse; therefore, he made a decision to plan mentally. From his text analysis, it was evident that Som was able to juggle the planning and drafting simultaneously and successfully. When asked whether Som would write and organize his ideas on paper on computer during planning, he informed the

researcher that he occasionally employed those strategies when encountering a challenging writing task, such as writing a comparison and contrast essay. The most common process and strategies shared by these three students were the drafting stage in which they utilized the spelling check, grammar check, and Thesaurus--the features available on Microsoft Word. During the revision stage, Reema revised by adding ideas and checking spelling while Som reread and revised his text for grammar and spelling. Reema and Sandy shared a similar writing process used by the unskilled ESL writers in Raimes' (1985) study. That is, they did little before writing and paid little attention to revising and editing but relying on their topic knowledge and past writing experience for the most part.

For the experimental group, the findings reveal that all of the students, regardless of their writing ability, utilized the strategies of consideration of writing purpose and audience. Their comments regarding the audience knowledge were insightful, especially that of Isabel who compared the writer-based approach in Venezuelan writing culture with the reader-based approach used in English academic writing. Her use of the audience strategy helped to improve the quality of her letter. Isabel, however, composed each paragraph in a linear manner in which she reread it, checked for organization and text coherence, and used Thesaurus to find synonyms to avoid repeating the same words. Vivian, on the other hand, considered both writing purpose and audience, generated and organized ideas, but had no time for revision. In Vivian's case, limited time was a factor that influenced her writing process. Evidently, the writing strategies they brought with them to the classrooms did not fully benefit them as shown on the quality of their written texts.

Both Som and Humberto, representing the strongest writers among the six interviewees, showed a common writing process with an individual variation of the pre-writing strategy use. Humberto wrote his ideas on paper and organized them perhaps following what he had been trained to do in the pre-writing strategies sessions. Both students chose to use the strategies that they felt comfortable with and that appeared to work for them effectively.

Theoretical Implications

This dissertation adds to a small, existing body of research on planning for writing. The study was grounded in knowledge-telling and knowledge-transforming cognitive writing models with the strategy training framework guided by procedural facilitation. Based on the results of the pre-writing questionnaires and semi-structured interviews, the findings demonstrate the effects of pre-writing strategy training on the use of pre-writing strategies employed by ESL students. The training was successful in raising the awareness of the students in the experimental group regarding their pre-writing strategy use. They also confirmed the teachable and learnable nature of these strategies regardless of the ESL learners' English language proficiency (Cumming, 1989; Lo, 1998; Roca de Larios et al, 2002). The increased use of pre-writing strategies has a positive influence on the increased writing quality scores produced by the strategy-trained group although the significance between groups was not found on this variable due to possibly small sample size and a short intervention period.

Bereiter and Scardamalia's (1987) knowledge-telling and knowledge-transforming writing processes differentiate unskilled writers from skilled writers in the way they write. Unskilled writers are believed to oversimplify mental representation of

the writing task, a strategy that works efficiently with simpler writing tasks such as narrative writing and personal expressive writing (Grabe & Kaplan, 1996). However, the knowledge-telling process alone is not useful when the writers are faced with more demanding writing tasks such as argumentative writing (Kozma, 1991). In addition to using the knowledge-telling writing process, experienced writers are found to use problem solving skills, set goals, and employ strategies resulting in a richer representation of the writing task. This complex representation is used as cues to search and access the content and rhetorical knowledge in their long-term memory and stimulates the dialectic process between the content and rhetorical problem spaces (Bereiter & Scardamalia, 1987; Flower & Hayes, 1981; Kozma, 1991). Some of these writing sub-processes and strategies were evident among the six interviewees in the current study. Reema, for instance, approached the writing task by reading and memorizing the key words (e.g. your opinion, homework, type, and amount) from the writing prompt and using them to retrieve relevant content and appropriate genre (an opinion letter) in her memory for text construction. She thought about the writing purpose at a superficial level and lacked awareness of her audience. Her incoherent and disorganized text revealed her perception of the writing task as knowledge-telling, which was simply telling what she knew about the topic. The transformation of her ideas to suit her audience and writing purpose was visibly absent from her text. Although she appeared to be a stronger writer than Reema, Sandy's three-step approach to writing also reflected the writing process of a knowledge teller. She gave herself very few directions to address the writing task. Her goal setting--to complete her writing task in as little time as possible--caused her to skip planning and use very few writing strategies both prior

and after drafting her letter. Her goal setting was ineffective, and thus it affected her mental representation of the writing assignment which, in turn, failed to trigger the dialectic process between the content space and the rhetorical space. Despite her vast experience in learning and using English both in the classroom and natural settings, Sandy was found to be the least sophisticated user of the writing process and strategies which directly affected the quality of her text, which may have been improved had she utilized some effective writing strategies.

In contrast, a more sophisticated use of the writing process and greater strategies were observed among the remaining four interviewees (Isabel, Som, Vivian, and Humberto). These four students shared some common strategies which included planning, setting goals, and using cognitive and metacognitive strategies during the writing process. As a result, they created reader-based texts that consider the needs of audience (Flower, 1990). Berierter and Scardamalia's (1987) knowledge-telling and knowledge-transforming writing processes appear to be a dichotomy of novice and expert writers' composing processes. However, the writing processes of the four students display the transition on the continuum between the knowledge-telling process and the knowledge-transforming processes. Prior to developing texts, all of these students made some strategic planning (Wendel, 1997) by analyzing the writing task and the task condition. Isabel, for example, has become a high strategy user after the less-than-six-week training period despite her little experience in producing English academic writing. She employed a problem-solving approach by skipping writing ideas down on paper, the strategy she usually uses if time permits, due to time restriction and focused her attention on some planning that she thought was more relevant to the current task such as thinking

about the writing purpose and audience, drafting, and revising in a careful manner. Her choice of revision strategies reflected her awareness of text organization and coherence. Her high use of relevant strategies displayed more of knowledge-transforming than knowledge-telling behaviors that were dominant in her pre-test opinion letter. Another example is the almost identical writing processes shared by Vivian and Humberto who brainstormed and organized ideas before composing on screen. The difference between them, however, is that Vivian had no time to revise her letter. Vivian's comment regarding the use of her organized notes was insightful. It showed that her notes facilitated the connection between planning and drafting. It is important to emphasize that Isabel, Vivian, and Humberto, all of whom were in the strategy-trained group, exhibited the use of pre-writing strategies despite the removal of the computer-based procedural facilitation tool in the form of Inspiration 6. That is to say, this routinized procedure seemed to be successful in raising the participants' awareness of planning in the areas related to reader awareness, writing-purpose consideration, and brainstorming and organizing ideas. Additionally, the use of planning facilitated by Inspiration 6 helped to divide the complex writing process into a smaller and more manageable sub-processes, which help lower their cognitive burden (Flower and Hayes, 1981; Lo, 1996).

One of the most interesting interviewees was Som, who was from the control group. From the outset, he was identified as one of the two strongest writers from this group based on his teacher's evaluation and his performance on pre-test opinion letter. He consistently maintained his strong writing performances throughout this study. He incorporated planning, drafting, and revising into his writing process. He was successful at using his mental blueprint when composing his draft and put a lot of thought into his

revision. It was evident that Som arrived at this classroom, having some prior writing skills, past English academic writing experience, some awareness of the writing process, and useful writing strategies. Like Isabel, Vivian, and Humberto, Som's text reflected the process of reworking his ideas and transforming them to meet the writing purpose and the need of his audience. The use of their writing processes and strategies as well as the quality of their text placed them on the continuum progressing towards the transforming-writing process. Regardless of a variety of their writing processes and strategies, it is important to point out that all of the interview participants focused most of their attention on the drafting process by either actively transferring their ideas from their head or from their notes onto the computer screen.

Pedagogical Implications

Based upon the findings of this study, it is recommended that a completely informed training of pre-writing strategies be incorporated in ESL writing instruction. Prior to the training, teachers should find out what strategies students already possess, then offer the training that include a variety of successful writing strategies that students should be aware and take advantage of. The completely informed training in itself can teach students how and why to use, transfer, and evaluate the trained strategies (Oxford & Crookall, 1989). Procedural facilitation may be used as a training framework to help students temporarily reduce their cognitive loads while drafting their texts. In addition, teachers as well as more advanced writers (knowledge transformers) can model their writing processes and strategy use by verbalizing them as they write to those who need more effective processes and strategies.

Generally, ESL writing teachers have a tendency to focus their students' attention more on the drafting and revision stages, providing teacher and peer feedback, using multiple drafts, and etc. However, it is also important to highlight the planning stage by teaching students how to plan for their writing and allocating planning time into their writing process if they perform in-class writing or encouraging students to spend time planning when they write at home. Initially, this planning time might take longer for some students, but when students practice doing it more often, they might be able to plan with less time.

Computer labs, in general, are often cramped, making it inconvenient for students to do some pre-writing on paper. In addition, computers tend to stimulate computer writers to move immediately toward text production and plan sequentially--simultaneously plan and draft (Hass, 1989). To resolve these issues, computer-based idea organizing tools, such as Inspiration, PowerPoint, and Microsoft Word could be used to support students while they generate and organize ideas during planning providing they receive some training to utilize them effectively. It is important for teachers to consider the impact of the writing task and the technological skills on ESL learners' cognitive loads. As Kozma (1991) pointed out, when incorporating any software programs in the writing program, teachers should be aware that "the effective use of a computer-based tool depends on the demands of the writing task, the cognitive skills of the users, and the features of the software" (p. 23). The author contended that effective tools should be designed to maximize and broaden the task-relevant skills that lie within the user's zone of proximal development, the distance between the students' actual development and the level of potential development with guidance or collaboration (Vygotsky, 1978).

Regarding writing tasks, they should be designed or chosen to provide opportunities for students to transform their ideas and knowledge or reworking information, the process in which knowledge tellers can develop their writing skills. Bereiter and Scardamalia (1987) and Flower (1994) urged writing educators to employ the writing process approach and knowledge-transforming tasks in their classrooms. In addition to learning how to write standard paragraphs and essays, students should also be exposed to models of other written texts such as letters, flyers, magazine, and articles in order “to raise their awareness with regard to the way words, structures, and genre contribute to purposeful writing” (Myles, 2002, p. 10).

Limitations

This study examined the training effects of specific pre-writing strategies via computer technology and through procedural facilitation; therefore, it focused on ESL learners’ cognition (behaviors and mental processes) when producing opinion letters. Social aspects, such as interactions and collaborations with peers and/or teachers, were intentionally excluded. This study has several potential threats to external and internal validity. First, with respect to population validity, the study utilized a purposeful sample of intermediate ESL students drawn from one intensive English program (IEP) in a research one university in the southeastern U.S.; therefore, the findings may not be generalizable to other ESL populations. Second, the sample consisted of four intact classes without random assignment due to schedule constraints; however, participants had been assigned to class sections (after their language proficiency level was identified) by the IEP based on first language and gender to balance the class diversity. Third, some of the selection criteria of the interviewees might have affected the findings of the

qualitative study. More specifically, the interview participants were chosen based on their writing scores, class participation, oral language proficiency, availability for interviews, and etc. Other variables such as students' past writing experience, their previous knowledge of writing strategies were not taken into consideration in selecting these six interviewees. Further, these students might have represented the populations who were motivated learners and had positive attitudes towards English language learning. Last, participants' number of strategy use relied on self-report which may not have been entirely accurate and reliable despite immediate completion of writing strategy questionnaire and informal observations by the researcher. Consequently, other data collection instruments such as a think-aloud protocol may be considered to examine strategies used by ESL learners whose English language proficiency is at high-intermediate or advanced levels. While composing, ESL learners at higher proficiency levels may be more able to verbalize the thoughts of their writing process and strategies and to cope with cognitive demands created by think-aloud tasks. To minimize the threats to external validity, care was taken in providing a careful description of the sample and settings to help readers infer and generalize the findings of this study.

The threat to internal validity was lessened by section assignment conducted by the IEP, random assignment to control or experimental groups performed by the researcher, instructors with similar educational backgrounds, professional development training, and teaching experience, the same curriculum, syllabus, and textbooks. In addition, to control for experimenter effect and treatment fidelity, the researcher systematically trained four course instructors to facilitate the pre-writing strategy training or deliver writing instruction via PowerPoint presentations to the participants. The

researcher also observed classes when the training/instructional modules were delivered to ensure the lesson consistency across groups. According to Gall, Gall, and Borg (2003, p. 381), treatment fidelity is “the extent to which the treatment conditions, as implemented, conform to the researcher’s specifications for the treatment.” Finally, to provide an equal educational opportunity for the participants in the control groups, computer-based pre-writing strategy training were delivered to them after data collection was completed.

Suggestions for Further Research

Since L2 pre-writing strategies or planning are under explored, future studies could examine the effects of these pre-writing strategies on writing strategy use and/or writing performances by using larger samples in order to detect a significant difference between groups. A within-subjects design could also be used to trace individual students over time and to control for individual differences, such as gender, past writing experience, and etc. Further, a follow-up test could be added to the design to examine the training effects on the variables long-term. In terms of writing strategies, a variety of pre-writing strategies, such as preparing an outline, free writing, and group discussions can be introduced to students to help them generate and organize ideas.

It will be fruitful for future research to document how ESL/EFL learners plan before writing and translate their writing plans into written texts. It may find out that these learners may need help in not only how to plan but also how to transition the writing ideas from the planning stage to the drafting stage.

Future research could also be conducted qualitatively and longitudinally to document and explore in depth how knowledge-tellers become knowledge-transformers,

and how knowledge-transformers make further progress in becoming expert writers with regards to fluency and accuracy. Multiple measures such as idea units (which need to be modified to detect ESL/EFL writing quantity), number of words, the multiple-trait writing rubric used in this study, and the like can also be used as measures to capture the complexity of the learners' writing development.

Conclusion

Little research has been conducted to investigate the effects of pre-writing strategies in relation to ESL students' pre-writing strategy use, writing quantity, and writing quality, grounded in knowledge telling and knowledge-transformation writing models. This dissertation research, therefore, focused on these issues by utilizing the mixed methods design to address the quantitative and qualitative research. The results of the study demonstrate the significant effects of the training on ESL students' pre-writing strategy use but fail to detect the significant impact on the students' writing quantity and writing quality. Only a trend of improvement regarding these variables was detected among the strategy-trained students. Furthermore, the qualitative analysis revealed the similarities and differences of students' writing processes and strategies. Overall, the findings suggest the complex interplay among the factors influencing writing development, including writing strategy use, writing tasks, task conditions, writer's background knowledge, their past writing experience, and their language proficiency in which the apparent positive trend occurred strongly encourage future inquiry.

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Appendices

Appendix 1: ELI Proficiency Scale—Spring 2008

Level	Reading	Writing	Listening/Speaking	Grammar
1	<p>Understands the main point of a simple text, simple vocabulary, and simple written directions for familiar topics.</p>	<ul style="list-style-type: none"> • Has command of simple words or phrases. • Shows some knowledge of rhetorical forms in English. • Demonstrates fairly logical sequence in writing. 	<ul style="list-style-type: none"> • Understands simple vocabulary and simple sentences in spoken English. • Is beginning to think in English but may still rely on translation. • Is able to communicate basic needs and answer questions on very familiar topics. 	<p>Uses basic verb phrases and structures.</p>
2	<ul style="list-style-type: none"> • Demonstrates increased fluency and approaches reading with more confidence. • Has a larger vocabulary and makes guesses about new words. 	<ul style="list-style-type: none"> • Begins to write meaningful compositions with paragraphing and topic sentences. • Shows attention to simple paraphrasing and sequencing. • Introduces new vocabulary into writing. 	<ul style="list-style-type: none"> • Is able to follow most “teacher talk” fairly well. • Understands the general idea of much of what is heard outside the classroom. • Is able to converse about general topics with some degree of success. • Is able to satisfy routine social demands and handles most situations in English fairly well. • Begins to think more in English and begins to speak more fluently. 	<p>Demonstrates control of simple present, past, and future verb tenses in speech and in writing.</p>
3	<ul style="list-style-type: none"> • Understands most of what is read in texts dealing with familiar subjects. • Demonstrates development of critical reading skills in English. • Increases passive vocabulary and can find meaning in context. 	<ul style="list-style-type: none"> • Gives coherent accounts of own activities, interests, needs, and wishes. • Shows improved organizational skills and includes an introduction and a conclusion in compositions. 	<ul style="list-style-type: none"> • Shows a marked increase in listening ability. • Is able to understand a great deal of what is heard outside of the classroom. • Retains larger sections of what is heard in class and makes the necessary connections to process it in English. • Is able to converse comfortably with both non-native and native speakers in English. • Displays vocabulary sufficient for most conversational purposes. 	<ul style="list-style-type: none"> • Controls basic verb forms in spontaneous speech and writing. • Aware of more complex grammatical structures and begins to use them. • Grammar does not interfere with comprehensibility in speech.
4	<p>Shows increased reading rate as well as comprehension in preparation for academic programs.</p>	<ul style="list-style-type: none"> ▪ Writes the language fairly easily and for the most part, correctly. • Organization of ideas in writing is fairly good. • Is familiar with basic academic research skills. 	<ul style="list-style-type: none"> ▪ Has excellent listening abilities in most settings including listening to academic lectures and taking notes, and paraphrasing what is heard. • Is able to use the language fluently and appropriately in most situations. • Is able to express both concrete and abstract ideas. 	<ul style="list-style-type: none"> • Is able to apply the grammar that has been learned to writing tasks. • Is familiar with complex grammatical structures such as phrase and clause structure, conditional verbs, parallelism, and coordination of ideas expressed in sentences within a paragraph.

Appendix 1: ELI Proficiency Scale—Spring 2008 (Continued)

Level	Reading	Writing	Listening/Speaking	Grammar
5	<p>Is able to read longer readings and larger quantities of academic materials for general understanding.</p>	<ul style="list-style-type: none"> ▪ Is able to paraphrase, summarize, organize and present text orally, and in writing. • Is able to synthesize information and write well-developed reaction/opinion papers. • Can research and write about a topic in an academic field of study. 	<ul style="list-style-type: none"> ▪ Is able to listen to longer academic lectures and to retain and organize much of the material heard. • Speaks fairly fluently. • Is able to express concrete and abstract ideas without grammar interference and with oral comprehensibility. • Is able to make oral presentations using visual aids and support. • Has developed note-taking skills. 	<ul style="list-style-type: none"> ▪ Uses a variety of sentence structures in writing. • Begins to understand the difference between moderate and formal expression as a means of presenting abstract ideas through tense and voice.

Appendix 2: Overview of ELI Curriculum—Spring 2008

Level	Grammar Strand (5 hours per week)	Academic Preparation Strand (5 hours per week)	Academic Interactions Strand (5 hours per week)	Communication Strand (6 hours per week)
1	Grammar 1 Produce basic grammatical forms in oral and written language.	Academic Preparation 1 Improve academic reading and writing skills through a photo portfolio or an autobiography, a reflection journal with entries based on personal experiences, class readings and other types of input.	Academic Interactions 1 Develop basic academic listening and speaking skills through short conversations, lectures, and presentations on everyday topics.	Communication 1 Develop communicative language skills, grammar, and vocabulary through the use of a thematic picture dictionary.
2	Grammar 2 Produce grammatical forms in oral and written language, including aspects of verb tense and use of modals.	Academic Preparation 2 Improve academic reading and writing skills by producing a biography of a famous person, a number of responses to timed essay questions based on readings and other types of input, and other writing assignments.	Academic Interactions 2 Develop and improve academic listening and speaking skills through short lectures, written responses, and presentations on academic topics.	Communication 2 Develop communicative language skills and strategies through reading, writing, and discussion.
3	Grammar 3 Produce complex grammatical forms in oral and written language, including the perfect tenses and the passive voice.	Academic Preparation 3 Improve academic reading and writing skills by completing a group research project, a number of responses to timed essay questions based on readings and other types of input, and other academic writing assignments.	Academic Interactions 3 Improve academic listening and speaking skills through lectures, discussions, writing, and presentations on contemporary political and social topics.	Elective Strand (6 hours per week)
4	Grammar 4 Produce advanced grammatical forms in oral and written language, including noun, adjective and adverb clauses.	Academic Preparation 4 Improve academic reading and writing skills by completing a problem-solution paper, a group presentation of a selected topic, responses to timed essay questions based on classmates' presentations, and other academic assignments.	Academic Interactions 4 Improve academic listening and speaking skills through lectures, discussions, extended research, and presentations in a variety of academic disciplines.	<p>1) Students from levels 3, 4, and 5 choose two electives, for three hours each.</p> <p>2) Electives are restricted by level; some are for 3 only, some are for 4 and 5 only, and some are for all three levels together.</p> <p>3) Test prep electives include: TOEFL iBT Intro, TOEFL iBT Reading/Writing, TOEFL iBT Speaking/Listening, SAT, ACT, SAT/ACT Vocabulary, GRE Verbal, and GMAT Verbal. Focus is on familiarization with test format, test-taking strategies, and the development of individual skills specific to the exam.</p> <p>4) Integrated skill electives include: Current Events, Pronunciation & Drama, Reading a Novel, Culture Thru Movies, Say It With Idioms, Business Communication, Business/Technical Writing, Myths & Legends and Math Review.</p>

Appendix 2: Overview of ELI Curriculum—Spring 2008 (Continued)

Level	Grammar Strand (5 hours per week)	Academic Preparation Strand (5 hours per week)	Academic Interactions Strand (5 hours per week)	Communication Strand (6 hours per week)
5	<p>Grammar 5 Refine use of advanced grammar in oral and written language. Be able to research own grammar questions using corpus data, grammar reference texts, and the internet.</p>	<p>Analytical Reading/Writing (ARW) 5 Develop critical thinking skills, analyze readings, and respond to them with 5-6 essays of different genres. (Required for a TOEFL waiver for USF.)</p>	<p>Academic Interactions 5 Further develop academic listening and speaking skills through advanced lectures, discussions, extended research, and presentations.</p>	
	<p>University Experience 5 Learn about university policies and research methodology through study and participation in university credit courses. (Required for a TOEFL waiver for USF.)</p>	<p>Community Volunteering 5 Integrated skills practice while focusing on social issues. Students experience volunteering through local organizations.</p>	<p>Public Speaking 5 Develop public speaking skills through the presentation of impromptu and researched speech topics.</p>	
<p>Test Preparation Track (Levels 4 and 5 only; 21 hours per week) This track is for students that need to focus on preparing to take a standardized exam (TOEFL iBT, SAT, ACT, GMAT, GRE or other approved exam). Students in this track choose 2 test prep elective courses (6 hours per week) and have 15 study hours per week in the Test Prep Lab to work individually with a tutor. They can only take this track for one term and cannot be promoted to the next level during that term.</p>				

Appendix 3: Scoring Guide for Opinion Letters

Score	Writing Purpose & Audience	Development of Main Idea & Support	Organization
6	The letter demonstrates a clear understanding of purpose and audience. It states a clear position, explicitly identifies the proposed reader, and clearly addresses reader concerns and counterarguments.	The letter effectively addresses the writing task. It contains multiple paragraphs and uses clearly appropriate details to support a main idea or illustrate an idea.	The letter is clearly organized in a logical sequence with an opening, body, and closing paragraphs that support a main idea. Explicit transition words between paragraphs are shown.
5	The letter demonstrates a general understanding of purpose and audience. It states a position, identifies the proposed reader, and addresses some reader concerns and counterarguments.	The letter may address some parts of the task more effectively than others. Most details support a main idea or illustrate an idea.	The letter is organized in a logical sequence with multiple paragraphs or several important points. Ideas flow smoothly from one paragraph/idea to another even without transition words.
4	The letter demonstrates some understanding of purpose and audience. It may state a position indirectly and may show some awareness of audience.	The letter addresses the writing task adequately but may slight parts of the tasks. Some details that are related to a main idea may be irrelevant or redundant.	The letter is adequately organized. Transition between paragraphs/ideas may be choppy.

Appendix 3: Scoring Guide for Opinion Letters (Continued)

Score	Writing Purpose & Audience	Development of Idea & Support	Organization
3	The letter demonstrates a little understanding of purpose and audience. The writing aim and/or audience might be unclear or confusing.	The letter is marginally related to the writing task. It lacks specific supporting ideas or contains irrelevant support related to a main idea.	The letter has little organization. Supporting sentences and paragraphs are somewhat incoherent. Transition is unclear.
2	The letter demonstrates no understanding of purpose and audience. It is off topic.	The letter lacks a main idea and contains irrelevant or redundant supporting details.	The letter lacks organization. Supporting sentences and paragraphs are incoherent.
1	The letter contains no response or merely copies the writing prompt.	The letter contains no response or merely copies the writing prompt.	The letter contains no response or merely copies the writing prompt.

Appendix 4: Writing Strategy Questionnaire

Writing Strategy Questionnaire

The purpose of this questionnaire is to find out about your English language writing strategies that you used when writing your opinion letter. Please read each statement and answer it carefully. Please be sure to submit it once only. Thank you.

1. Choose your gender.

male

female

2. Choose your age group.

20 or younger.

21-25 years old.

26-30 years old.

31-40 years old.

41-55 years old.

56 or older.

3. Choose your native language.

Arabic

Spanish

Chinese

Korean

Japanese

Thai

Russian

Other

4. Choose your highest educational degree.

- High school diploma
- Undergraduate/bachelor's degree
- Graduate/master's degree
- Ph.D degree
- Other

5. Choose years of your English study.

- 5 years or fewer
- 6-10 years
- 11-15 years
- 16-20 years
- 21 -25 years
- 26 years or more

6. Choose years of your computer use.

- 5 years or fewer
- 6-10 years
- 11-15 years
- 16-20 years
- 21 -25 years
- 26 years or more

7. I planned by writing down ideas before writing my opinion letter.

- Yes
- No

8. I planned by listing ideas before writing my opinion letter.

Yes

No

9. I organized my list of ideas before writing my opinion letter.

Yes

No

10. I planned by writing freely before writing my opinion letter.

Yes

No

11. I thought about the writing purpose before writing my opinion letter.

Yes

No

12. I considered my audience before writing my opinion letter.

Yes

No

13. I wrote notes before writing my opinion letter.

Yes

No

14. I wrote an outline of my opinion letter.

Yes

No

15. I used a dictionary to help find words in English.

Yes

No

16. I used a graphic organizer in Inspiration 8 to generate and organize my ideas before writing my opinion letter.

Yes

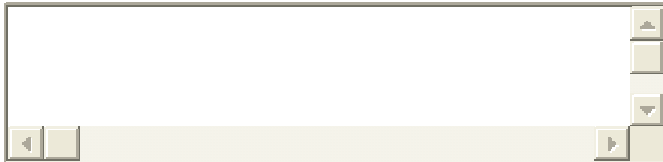
No

17. I thought about what I want to write and had a plan in my mind, but not on paper or computer screen.

Yes

No

18. Please write all of the writing strategies that you used when you wrote your opinion letter, but they were not mentioned in the questionnaire items 7-17.



Appendix 5: Interview Guide

1. Where are you from?
2. What is your native language?
3. What is your highest educational degree?
4. Have you had any work experience? If so, what have you done?
5. How long have you studied English?
6. How long have you used computer?
7. Do you enjoy using computer to write? Why or why not?
8. How often do you write in English? What kind of writing do you do?
9. Do you enjoy writing in English? Which aspect of English writing do you enjoy most?
Which aspect of English writing do you enjoy least?
10. Which aspect of English writing do you find the most difficult? Do you enjoy using
computer to write in English? Why or why not?
11. Do you enjoy using computer to write in English? Why or why not?
12. Do you think the writing task this morning/this afternoon was difficult for you? Why or
why not?
13. How did you write the letter to ____? Can you describe it to me step by step (planning,
drafting, revision)? What did you do first? Second?
14. What did you do before you started writing? If you generate ideas, did you use them in
your writing?
15. Did you think about the purpose of your writing? If so, what was the writing purpose of
this letter?
16. Did you think about your readers? If yes, how did knowing your audience affects the way
you wrote your letter?
17. Did you read what you wrote during writing?

Appendix 5: Interview Guide (Continued)

18. Did you make any changes after your first draft? If so, what kind of changes did you make?
19. Did you use any other writing strategies when you wrote the letter to ____? If so, what are they?

Appendix 6: Writing Prompt—Pre-test

Academic Preparation 3

January 24, 2008

Part 1: Writing an Opinion Letter: Read the writing prompt below and follow the directions for writing.

Writing Situation

Due to inflation (an increase in the prices of products and services), the ELI director is thinking about raising the tuition fee from \$3,585 to \$3,700 in fall 2008. She has asked ELI students to share their opinions on this issue with her.

Directions for Writing

Using Microsoft Word, write a letter to the ELI director voicing your opinion about the issue. Clearly state your position and support your opinion using facts and logical arguments. You have 45 minutes to write the letter of about 250 words.

Directions for Saving Your Document

To save your letter, name it as follow: pre_your first name_your last name (e.g. pre_Darunee_Dujcik). Then save it in the Academic Preparation 3 folder located in the K Drive in My Computer.

Part 2: Pre-Writing Strategy Questionnaire

After you finish writing your letter, open Internet Explorer and type **<http://CTLSilhouette.wsu.edu/surveys/ZS74048>** for URL address. This will direct you to the pre-writing strategy questionnaire which you need to complete. It is important for you to finish writing your letter before starting completing the questionnaire. Once you finish your questionnaire, **click the submit button once only**. Thank you.

Appendix 7: Writing Prompt—Post-test

Academic Preparation 3

March 4, 2008

Part 1: Writing an Opinion Letter: Read the writing prompt below and follow the directions for writing.

Writing Situation

The ELI Assistant Director has received several complaints from students about the type and amount of homework that students are getting this semester. She decided to find out what the students think about this issue. She plans to make some adjustments if necessary, so the students can get appropriate type and amount of homework to help them learn better.

Directions for Writing

Using Microsoft Word, write a letter to the ELI Assistant Director voicing your opinion about the issue. Clearly state your position and support your opinion using facts and logical arguments. You have 45 minutes to write the letter of about 250 words.

Directions for Saving Your Document

To save your letter, name it as follow: post_your first name_your last name (e.g. post_Darunee_Dujsik). Then save it in the Academic Preparation 3 folder located in the K Drive in My Computer.

Part 2: Pre-Writing Strategy Questionnaire

After you finish writing your letter, open Internet Explorer and type **<http://CTLSilhouette.wsu.edu/surveys/ZS74054>** for URL address. This will direct you to the pre-writing strategy questionnaire which you need to complete. It is important for you to finish writing your letter before starting completing the questionnaire. Once you finish your questionnaire, **click the submit button once only**. Thank you.

Appendix 8: Pre-test Letter--Reema

01\24\2008

Dear ELI director ...

I heard about what u are thinking, which is that about raising the tuition fee from \$3.585 to \$3.700 in fall 2008.

But in my opinion , I think the tuition now is good , and some people could offer it , but when you raise the tuition that will be a lot , because the university of south Florida is one of the best university in the world as I see and as my brother and sister see because they had studied and graduated from the U.S.F , and every one wish that he or she have a chance to study and graduate from the U.S.F , and not every one can offer that amount of money , so I hope that you will keep the tuition as it .

That was my opinion and I hope that you like it ...

Thanks ,,,

Reema

Appendix 9: Pre-test Letter--Sandy

Dear Sir,

How are you? I note that you're going to raising the tuition fee from \$3,585 to \$3,700 in fall 2008, it is certainly increasing a lot burden for me.

I hope you could take deep considerate about this, which is unnecessary to increase our budget. I'm not from a "very rich" family, but I still want to keep study and improve my English ability. If I study in ELI, I'm not only pay for the tuition; we also need to pay our life expense. Original tuition in ELI is pretty high to me; buying life stuffs in US is high too. Those expenses are huge burden to my family and mine.

I can understand, high quality needs to pay more benefit. Sometimes we still can find out in the different way to get high quality learning. You're a wonderful director, I believe you would know which way is the best for the student.

Truthful,

Sandy

Appendix 10: Pre-test Letter--Som

Dear ELI director

My name is Som, international student from Thailand. Due to inflation, which the ELI director is thinking about the tuition fee from \$3585 to \$3700 in fall 2008, I have to write up this letter to you let you know that I disagree with this. If the tuition fee rise up the students are supposed to find more money to pay, and they have to be stress during their studies, and their parents might be forced to afford more money. All of these are the reason why I disagree with your opinion.

As we know the tuition cost for studying in the united state is very expensive, if you increase the tuition fee, you might force student to find job to do for paying. This might interrupt their concentration of studies. For example, they may go to find some job off campus to earn more money, but it is illegal for them to work without social security. They will lose their concentration on studies then. This is one reason why I strongly disagree with increasing tuition.

For their concentration, after you increase the tuition fee, some of students might get a problem about this because they have to think about the way to earn money to pay. In addition, not only tuition, which students are supposed to pay, they also have to pay for health insurance, apartment for living, and meal. In this case, we can see that student have to pay a lot. All of these can cause them to lose their concentration of studies.

In term of parents, Students 'parents have to earn more money to support their kids. It seems to be like family's financial burden because parents must be forced to work harder than

Appendix 10: Pre-test Letter—Som (Continued)

they've ever done. The international students who stay far away from home will be worry about their parents too much. Moreover, they may want to go back home and give up their studies.

In conclusion, all of these are the reason why I disagree with your opinion, which you are thinking to increase tuition fee. Even though some of students can afford for the new tuition fee, I think after we will have a lot problems about students' performance to solve after increasing the tuition fee. I strongly hope that after you read my letter, you'll cancel your plan to increase the tuition fee.

Sincerely

Som

Opinion Letter:

Increase in the price of ELI Programs

ELI director has thinking about changing the prices of ELI Programs. Before she wants have an opinion from students about increase of prices in ELI.

I think is a good thing that she wants to ask us. However, when I looked for school to learn English I found many language institute with different prices and different locations in United States. I choose ELI for two reasons: location and good prices.

In my country I made an economic plan with website prices and collect money for paid the spring semester and for the others semester during this year.

Now it is possible my plan changes and I will star to look for other school in Florida because I won't have to enough money for my tuition next semester.

In the other hand, it is not serious change the prices when the semester has already started because I trusted in the prices that I saw in the ELI website.

I feel really upset about this news. I like ELI, teachers and classmates but I don't have enough money to pay next semester.

Maybe the ELI Director should think about increase prices better because many students will go to others school.

Appendix 12: Pre-test Letter—Vivian

Dear ELI director:

I want to tell you my opinions about the raising the tuition fee. Nowadays, it is exists circumstance that all over the world is increasing the price of products. To examine whether raising the tuition is better than keep original, we have to think carefully into the deep details.

At first, the raising tuition can adapt to this circumstance which is increasing the price of products nowadays, also ELI can get more revenues and it can maintain the quality in education. For example, If ELI decrease the income, maybe we will lose lots of opportunity, such as the important activity will be cancel, the salary of all the ELI staff will decrease. The consequence is that the quality of education is must be reduce, that isn't good situation we hope.

On other hand, there is anther circumstance that is keep original tuition price. Lots of students hope that. Everyone hopes pay less price get better stuff. If we raise the fee to 3700, maybe ELT will lost amount of student for few people can not afford this price.

In my opinion, I think if the circumstance that raising the tuition fee is base on the quality of education can still maintain or get higher than before, I approve of raising the tuition fee.

Appendix 13: Pre-test Letter—Humberto

Dear ELI director:

I'm writing this letter to let you know my opinion about the future increase of the tuition fee from \$3,585 to \$ 3,700 in fall 2008.

First of all, I want you to know that I agree with this issue, and here I present some of my reasons below:

- I understand that's a superior decision of the English Language Institute and we're suppose to adapt to any kind of situations or superior decisions.
- Other reason is that I think that this increase won't affect me in any aspect, because is not a high increase (it is only \$315 more).
- And the last one is that I understand that this increase has an objective, which can bring good benefices for the ELI and for us.

By the way, I would like to know some of the important reasons that could show me that this increase has an objective for the ELI and for the students.

This is all that I think about this issue.

Thanks for giving me the opportunity to share about this issue, hopping that you're making the right decision.

Sincerely:

Humberto

Appendix 14: Post-test Letter—Reema

My adjustment about the homework will be; I think home work very important for the students to help them to review what did they take during their classes and improve themselves. Also, by doing there homework they can find what they didn't understand, so they can ask the teacher. For that they will aware about their subjects and they will be prepared for their exams, and be able to pass their exams. For example, if there is no homework maybe the student will not study so that he won't have a good background about the classes and the subject so he will confused during the exams , even during the classes he /she will be confused about what the teacher talking about because there is no any way let him to focus on his/her studies of the student don't care about his / her studies. And that because some student thinks that the ELI classes not important and so easy so they don't have to study well, but all that is wrong because the ELI classes are so important to prepare the student for the university by improving their English language.

On other wise, I think the homework's are a lot for the student and maybe difficult, especially for the ELI students, because the are new English learning's think the homework a lot because they have a lot thing to focus on it such as; exams, projects and they are confused of thinking about the toefl test and how they can get the score that help them to join the university and complete their studies. That's my opinion so I think its better the amount of the homework is in the middle not a lot and not little!

Appendix 15: Post-test Letter—Sandy

Dear Sire,

In this semester, I think there is too much homework for us. I would like to explain the situation we have. At the beginning, the first class teachers just announce the projects we need to finish in the end of semester; it is too much for us. We don't have the time to prepare apply in to the regular program. The plan that I study at ELI program is not only improve my English; the most important thing is help me apply into the College.

At the time in ELI, I think I spent too much time to write the homework, I don't have enough time to write my statement of purpose and prepare the documents. In the morning time, we need attend to the class. In the afternoon, I need to spent time to do the all assignments, sometime it may take longer until 9 to 10 o'clock. At the weekend, teachers will think we have more time to do the assignment, so they will give us more homework to ask us finish on Monday.

Write a good statement of purpose is not easy for a foreigner. I need teacher to help us to check the grammar, and make sure we write good information that the school want to know about us. In my opinion, school should think about, why the student come to the ELI, they want to come here to write the homework, they can never finish or they want to come here to prepare their future plan?

Thanks for your patient.

Best Regards,

Sandy

Appendix 16: Post-test Letter—Som

Dear Assistant Director

I'm Som, international student from Thailand. After I read this statement, ELI is considering reducing among of homework. I agree that Eli should reduce the homework, which teachers assign to students. In my point of view, a great number of students are affected from much homework in several ways, lose concentration, and stress, and you should adjust amount and type of homework to appropriate to students

First, Even though we have to accept that, basically, homework is good for students to practice their English skills, it may cause students to lose their concentration in the class participation. For instance, when the grammar teacher assigns them a lot of homework, student may bring this homework to do during studying in other classes such as listening or writing class, because they definitely concern about turning the homework on time. Moreover, the much homework will extremely affect some students who need to take another test as TOEFL, and they won't have time to concentrate. Consequently, students may lose their concentration in other classes.

Second, the amount of homework might affect students to be stressed. For example, some students who have their own family for taking care must be affected form a great number of homework, because they have to work hard for both homework and responsibility for taking care of family. Moreover some students who have a part-time job have to quit working, because they have to spare the time for doing homework. In this case the student will have a financial problem. As a result, they are going be stressed people.

Appendix 16: Post-test Letter—Som (Continued)

Third, I think that the right number of homework is suitable for students, because the student will have time to do other activities such as working, taking of family, or concentrating for another test which they're supposed to take. Through my experience, I think the much homework can not help student to improve their English. Instead of much homework, the best way which I recommend you to do is adjusting number of homework and increase class, which international students are able to communicate with native speaker.

In conclusion, I hope that after you read my writing, you will see the effect which much amount of homework disturb students' concentration and make student stressful. In addition, I hope that you will carefully make an adjustment type and amount of home work based on the way of adjustment which I give you

Sincerely

Som

Appendix 17: Post-test Letter—Isabel

Tampa, March 4, 2008

University of South Florida
English Language Institute
ELI Assistant Director
Present.

I write this letter with purpose to communicate you the issue about the homework during spring semester 2008. This semester, it is my first semester in ELI and also is my first time learning English and then I think the ELI classes are really good, but the teachers, in general, give me a lot of homework every day. All homework has a high level of difficulty and so I need to spend many hours to complete it. Sometimes, I am so tired that when I do my homework its quality is no so good and my learning isn't improved.

I think it will be better each teacher give me homework one time on a week because I will have more time for do it. In another hand, maybe my learning will be improved each day so I feel more comfortable learning English.

I know the best way to learn a new language is practicing it and for this reason is, absolutely, necessary to do homework , but I believe that reducing the quantity of homework I will get better results in my homework and my learning will improve.

Of course, I agree with the homework but the only thing that I claim is the big amount of homework is really too much what affect my learning.

Please, I would like that you will consider my opinion for next semester.

Best Regards,

Isabel
ELI Student Level 3

Appendix 18: Post-test Letter—Vivian

Dear ELI Assistant Director:

I would like tell you my own opinions about type and amount of homework. I believe that completing homework can bring us many advantages of improving our English levers.

Firstly, I think that completing homework can help us remember lots of information which we have learned. For example when we received some rules of grammar class, then we recalled that rules through completing homework. In this case, we can remember that rules clearly, even we are able to use this rules in English sentence correctly.

Second, it can develop our interest of studying English. In variety of homework, some assignments look like survey. We have to communicate with different people in English, and record their answers. Finally we write an article about our survey, and then we share our different opinions with classmate. I think like these assignments are very funny to us therefore we finish it joyfully. Everyone knows that to get more communication in English very useful strategy for studying English so this is suitable way to develop our interest of studying English.

In my conclusion, studying English is own business, nobody can help you learn English fully without your struggling. Actually, we have many factors which can help you learn more easily to study English, and completing homework is the most important and powerful factor to help you improve you English lever.

ELI student

Appendix 19: Post-test Letter—Humberto

Dear ELI Assistant Director:

I'm writing this letter with the purpose of let you know what I think about the issue (type and amount of homework that we are receiving this semester) which is retarding our progress to learn English and also to let you know my opinion about the adjustment that you have been thinking to do to find the solution of this issue.

First, I'd like to talk about the type of homework that we're actually receiving. The most of the homework result to be very hard for us mostly the high level of investigation homework that sometimes don't have any relationship with learning English and result very hard for us to understand them and also take from us a lot of time.

Second, I'd like to mention another part of this issue which is the amount of homework that we're actually receiving. The time is a very important factor in the process of learning English and because of the amount of homework that we're receiving sometimes we only have time to do them and not to study them which is more important, also remember you that we have other classes and responsibilities to take care about.

I'm glad to know that you've been planning to make an adjustment; in my opinion I think this is a good decision that will solve this issue and at the same time improve our English.

Finally I recommend you to reduce the amount of homework and think if the type of homework that you're planning to give us will help us to improve our knowledge in English.

Sincerely,

Humberto

About the Author

Darunee Dujsik received her Bachelor's degree in English Education from Ramkhamhaeng University in Thailand and her Master's degree in Applied Linguistics from the University of South Florida (USF) at Tampa. After obtaining her MA, Darunee returned to her homeland and taught EFL at the tertiary level in Thailand for 8 years. Her interest in computer-assisted language learning led her to pursue a doctoral degree in the Second Language Acquisition and Instructional Technology (SLA/IT) Ph.D. program at her alma mater in Florida.

As a doctoral student, Darunee taught ESL at the USF's English Language Institute, worked as a SLA/IT program assistant, trained international teaching assistants, presented at conferences, published on-line, and served as Secretary of the SLAQ student organization. Her research interests include academic writing, writing strategies, computer-mediated communication, distance education, and teacher training. Darunee is currently a faculty member in the Faculty of Humanities of the University of the Thai Chamber of Commerce in Bangkok, Thailand.